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## Evaluating the Distribution and Adequacy of Human Resources in Hospital Settings

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### Abstract

Human resources play a crucial role in achieving organizational goals and are considered the most valuable asset in both production and service delivery. Imbalances in the distribution of human resources, including shortages and surpluses, can significantly affect the quality of patient care. This study aimed to investigate the situation of human resources in hospitals. The findings from the hospitals examined indicate that many institutions are experiencing shortages and poor distribution of medical staff, especially in nursing, medical, support, administrative, and financial departments. No significant deficiencies were observed in para-clinical and para-medical areas. Effective management and strategic planning to address personnel shortages and align them with standard levels can increase hospital efficiency and overall performance. In hospitals where bed capacity is underutilized and average occupancy is low, management tends to employ fewer human resources, often with poor allocation, leading to inefficiencies. As a result, many hospital facilities and investments remain underused, representing a lost opportunity.

**Keywords:** Hospitals, Nursing, Human resources, Medical

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### Introduction

Human resources have become a vital strategic factor in modern organizations, particularly within the healthcare sector. Over the past few decades, the role of human resources in shaping organizational performance has garnered increased attention from management experts [1]. In the context of healthcare, human resources have been identified as one of the most significant assets, with shortages or surpluses potentially affecting the quality of patient care. This issue has received heightened focus, particularly in the early 21st century, as outlined in the World Health Organization's 2006 report [2].

In healthcare organizations, including hospitals, human resources are key to the efficient provision of services. Hospitals combine human effort with equipment and resources to deliver essential healthcare to society. However, the distribution of human resources in hospitals varies widely by region and country. Some countries face a critical shortage of healthcare workers, while others have an adequate supply or even an oversupply of medical professionals [3].

The global average number of nurses and midwives per 10,000 people stands at 280. However, this number is significantly lower in many regions, such as 21 per 10,000 in both the Western Pacific and Eastern Mediterranean, and only 14 in Southeast Asia and 11 in Africa [4, 5]. Despite these challenges, many countries are actively working to improve the distribution of healthcare professionals and to address human resource shortages. These efforts, often guided by the World Health Organization, are especially focused on developing nations [6].



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Research by Méndez and Torres [7] emphasizes the importance of human resources in the healthcare system, noting that effective human resource management can enhance healthcare delivery. Similarly, Jamal *et al.* [8] highlighted issues of uneven human resource distribution across various departments of hospitals, both public and private. Other studies, such as those by Sadeghifar *et al.* [9] and Arab *et al.* [10], also point out inefficiencies in the allocation of human resources in hospitals. The efficient management and allocation of human resources are crucial for improving hospital performance and ensuring that healthcare services meet the needs of the public. This study aims to examine the current state of human resources in hospitals, identifying key challenges and offering recommendations for improvement.

## Results and Discussion

The findings from the research on human resources in hospitals reveal a considerable shortage of medical personnel, particularly nurses, and doctors in many hospitals across Iran [11-13]. Previous research has also pointed to a scarcity of nursing staff, leading to patients and their families being tasked with roles typically filled by trained nurses, which negatively impacts the overall quality of care [10, 14]. Additionally, the distribution of nursing staff across the country is uneven. For instance, Semnan province has a higher concentration of nurses, while provinces such as Hamadan, Kohkiluyeh, Golestan, Boyer Ahmad, and Sistan and Baluchistan have far fewer nurses relative to their population.

Many studies have also highlighted the insufficient number of medical staff, particularly specialist doctors, in public hospitals. Some provinces, such as Semnan and Isfahan, are better served with a higher number of specialists, while others, including Golestan, Kohkiluyeh, South Khorasan, Boyer Ahmad, and Sistan and Baluchistan, are notably lacking in specialist doctors [15]. The disparity in the distribution of specialists is evident in the data, which shows that Yazd province has the highest doctor-to-population ratio, whereas Sistan and Baluchistan have the lowest [16].

The assessment of various departments (clinical, paraclinical, service, maintenance, technical support, and administration) across the studied hospitals revealed that only 19% of the departments met the standard staffing requirements. Approximately 64% of the departments were understaffed, while 17% exceeded the standard [17]. Interestingly, other studies observed an over-concentration of support and administrative staff concerning medical staff in many hospitals, which contrasts with the need for medical professionals [15, 18].

In a case study at the Children's Medical Center at Tehran University of Medical Sciences, a method to calculate the manpower required for hospital reception units highlighted that upgrading technology and increasing staffing levels could significantly improve service efficiency [19]. Similar research in countries like Thailand, Lebanon, Japan, and Turkey also pointed to issues with the unequal distribution of healthcare professionals, particularly specialists, which has led to staffing shortages in some private hospitals [8, 19-24].

Overall, the studies consistently reveal a shortage of human resources, especially in the clinical and treatment sectors, demonstrating a significant gap between the current and ideal staffing levels in hospitals [25, 26]. Ensuring a balanced and equitable distribution of specialized medical personnel is crucial for improving health outcomes and promoting social justice [27]. The uneven allocation of medical staff, especially in underserved areas like rural Iran, as identified in numerous studies, emphasizes the need for a more coordinated approach to human resource management in the healthcare sector [11-13].

The uneven distribution of healthcare professionals can be attributed to a range of factors, including insufficient numbers of specialized doctors, poor living conditions in underserved regions, inadequate compensation structures, and the limited acceptance of certain specialties [14]. Other contributing factors include education levels, economic conditions, gender imbalances, and geographic factors, all of which play a crucial role in the availability and allocation of medical professionals [28, 29]. This issue is not unique to Iran, as similar challenges can be observed in countries such as Albania, Greece [30], Taiwan [31], Japan, and the United States [32] regarding the distribution of specialist doctors [33-35].

To address these challenges, the Ministry of Health in Iran can implement strategies like mandating medical professionals to serve in rural areas, offering financial incentives for working in underserved regions, and pinpointing areas in dire need of healthcare resources [36-38]. While some improvements have been made in increasing the number of medical students and enhancing the general practitioner workforce, there is still considerable room for progress, especially concerning fair distribution [36, 39]. In comparison to countries like Turkey, South Korea, and Japan, Iran's healthcare system is relatively well-staffed, but it still lags behind advanced countries like the United States, Sweden, and Belgium in terms of medical resources [39].

A particularly notable issue is the shortage of nurses in hospital settings. The international standard calls for 3 nurses per bed, while in Iran, the ratio is just 0.9 nurses per bed, far below the ideal (Ministry of Health and Medical Education). Countries like Japan, England [40], and China [41] maintain a more favorable nurse-to-bed ratio, but disparities in distribution remain even in these countries. A more balanced approach to staffing could improve both the quality of patient care and employee satisfaction. Proper staffing levels are critical not just for maintaining standards, but for enhancing the overall healthcare system.

While shortages exist in nursing, Iran's hospitals generally do not face significant deficits in administrative, support, or para-clinical roles [10, 16, 18, 39]. However, a limitation of this study was the lack of research on the distribution of human resources in private hospitals. Additionally, limited access to certain reports from governmental health organizations hindered the ability to fully assess the situation. The overall lack of comprehensive research on healthcare personnel in Iran posed further challenges to understanding the issue from multiple angles.

## Conclusion

The research findings indicate that the hospitals studied are facing significant issues with the distribution of human resources, with a clear lack of uniformity across departments. While some areas, such as laboratory sciences, operating rooms, radiology, intelligence, and midwifery, are overstaffed, critical positions like medicine and nursing are severely understaffed. This imbalance has a direct impact on the quality of services provided. To enhance the efficiency and effectiveness of hospital operations, it is essential to address these staffing shortages, ensure that departments meet standard personnel requirements, and provide managers with the necessary training to optimize human resource planning and management. Overall, the mismanagement and underutilization of available human resources lead to wasted potential and inefficiencies, particularly in hospitals with low bed occupancy and underused hospital facilities, despite significant investments made in these areas.

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