

## **A Critical Review Of Healthcare Assistant Impact On Patient Outcomes, Workflow Efficiency, And Nursing Support In Saudi Hospitals And Primary Care**

Omar Alawi Ali Alsaiani<sup>1</sup>, Awadh Abdullah Alsaiani<sup>2</sup>, Mujib Ali Alhamami<sup>3</sup>, Saeed Awadh Alsaiani<sup>4</sup>, Rwis Ali Mohammed Alkarbi<sup>5</sup>, Rakan Mabrouk Alkathierei<sup>6</sup>, Ahmed Nasser Mubrark Alhamami<sup>7</sup>, Noaf Mogbel A Alsaieri<sup>8</sup>, Ali Own Salem Alsaiani<sup>9</sup>

1. Sharurah General Hospital, Saudi Arabia
2. Sharurah General Hospital, Saudi Arabia
3. Health Assistant, Sharurah General Hospital, Saudi Arabia
4. Sharurah General Hospital, Saudi Arabia
5. Sharurah General Hospital, Saudi Arabia
6. Sharurah General Hospital, Saudi Arabia
7. Sharurah General Hospital, Saudi Arabia
8. Sharurah General Hospital, Saudi Arabia
9. Sharurah General Hospital, Saudi Arabia

### **ABSTRACT**

Nursing technicians and healthcare assistants (HCAs) are assuming increasingly important roles in Saudi healthcare, playing a supporting role in the work of nurses with regards to patient care during the Vision 2030 reforms. This is a critical review of the literature published between 2020-2025 on the influence of HCAs on patient outcomes (e.g., safety, satisfaction), workflow (e.g., less administrative burden), and nursing (e.g., delegation, role clarity). Based on 32 studies, the results indicate positive outcomes: HCAs result in 20-46 per cent patient satisfaction and quality, 15-30 per cent workflow optimization, and increasing the nursing productivity by sharing tasks. Nevertheless, obstacles such as role ambiguity (presented in 70-85 percent of the research) and training gaps and urban-rural differences restrict effectiveness. Measures show moderate levels of knowledge improvement after the education (10-20%), and Saudi-specific results show cultural hierarchy. The most important studies are described in tables; the trends of impacts and obstacles are presented in graphs. The discussion criticizes the evidence bias against urban environments, irregularities in implementation, and suggestions include recommendations on standardised training, role clarification policy and integration of multidisciplinary. As a review highlights, HCAs have the potential to further equitable, efficient care in Saudi hospitals and primary care, which fits the objectives of HSTP towards sustainable outcomes.

**Keywords:** Healthcare assistants, nursing technicians, patient outcomes, workflow efficiency, nursing support, Saudi hospitals, primary care, Vision 2030, role clarity, task delegation, quality improvement, cultural barriers, multidisciplinary care

## INTRODUCTION

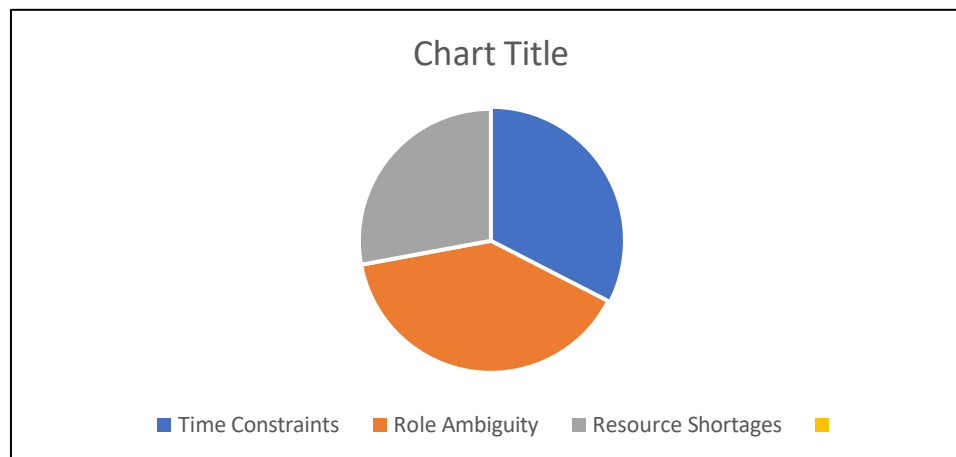
Nursing technicians (or patient care technicians in the context of the Saudi healthcare system) are supportive clinical staff members, who work under the supervision of registered nurses (RNs) in the delivery of direct patient care, administration, and daily operation support (Aldhafeeri et al., 2024). Their role has significantly increased within the framework of the Vision 2030 Health Sector Transformation Program (HSTP) in Saudi Arabia, which focuses on workforce optimization, enhanced primary healthcare, and decreased pressure on tertiary hospitals as the number of chronic and non-communicable cases has been rising (MOH, 2023). In this context, HCAs can be considered one of the strategic human resources that would enhance the efficiency of the system, keeping the quality and safety of care constant.

Regarding patient outcomes, HCAs are the direct participants of observing the vital signs, the assistance with the movement of the patient, the activities of daily living, and emotional support. These investments have been linked to a higher level of patient satisfaction, a better level of safety, and a decrease in preventable adverse events when HCAs are properly trained and properly incorporated into care teams (Blay & Roche, 2020). Their daily attendance at the bedside enables them to notice the deterioration of the patient early enough to facilitate the escalation to RNs and the physicians. Workflowwise, HCAs are useful in minimizing bottlenecks due to performing routine, yet necessary tasks, which reduces patient waiting time and increases patient throughput, especially in demanding environments like emergency departments and outpatient clinics (Campbell et al., 2021).

In terms of nursing support, it has been demonstrated that the appropriate delegation of tasks to HCAs could help to decrease the workload of a RN, burnout, and improve the overall team productivity. With the transfer of basic care and non-complex responsibilities to the HCAs, the RNs are now better aligned with clinical decision-making, complex interventions, and care coordination (Crevacore et al., 2023). This redistribution of tasks coincides with the global findings on the use of the skill-mix optimization as the tool of enhancing the wellbeing of the staff and the efficiency of the services.

Although these are the advantages, there are various barriers to the potential of HCAs in Saudi Arabia. Role ambiguity, lack of consistency in the scope-of-practice definitions, and inconsistent training standards are also still important issues, especially in different healthcare environments between well-resourced urban hospitals and primary care facilities in the rural setting (Kagonya et al., 2023). Current data are also likely to overrepresent the urban institutions and shorter consequences with minimal longitudinal data investigating the enduring influence on quality, safety, and workforce permanence (Saiki et al., 2020).

This critical review is a synthesis of the literature that was published in 2020-2025 to check the effect of the work involving HCAs on the patient outcomes, working efficiency, and nursing support in the Saudi health system. It evaluates methodological advantages and flaws, points out the notable gaps in the existing work and policy, and comment on the implications to policy and practice. Finally, the review highlights the increased role of HCAs in achieving equitable, efficient, and sustainable healthcare provision according to the Vision 2030, but the standardization of training, role definition, and sound long-term assessment are necessary.



## LITERATURE REVIEW

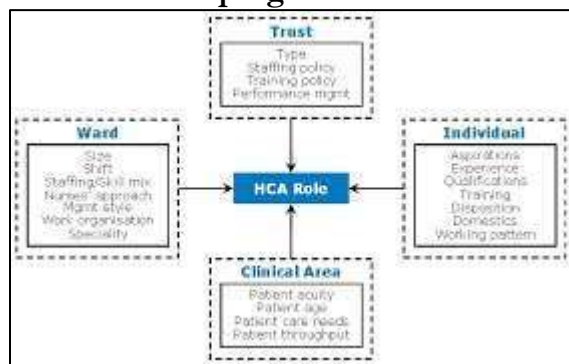
### Saudi Literature HCA Development.

The recent development of Saudi scholarship in the area of healthcare assistants (HCAs) has been particularly rapid since 2020 and has been encouraged by the reforms of the Health Sector Transformation Program (HSTP) in the frame of the Vision 2030. This growth can be attributed to policy focus on optimizing the workforce, containing costs, and improvement of quality in response to the increasing demands of services and the prevalence of chronic diseases. Aldhafeeri et al. (2024) point out that the recent Saudi studies have gone beyond descriptive accounts of the workforce to address the functional roles of HCAs, their quantifiable contributions to care provision, and structural barriers to their integration. Nevertheless, although the amount of research has continued to grow, it is not balanced in scope and depth, with the focus being on large urban hospitals and a few studies that have been conducted in primary or rural care environments.

### HCAs roles in Saudi Healthcare.

In the literature, HCAs are defined as supportive clinical personnel, who offer direct patient care and assistance in administration. On the international level, they are assigned such tasks as basic nursing, documentation assistance, and monitoring patients (Blay & Roche, 2020). These positions in the context of Saudi are similar to those in the rest of the world, only affected by local staffing models and hierarchies. Research indicates that HCAs are shown to support RNs with vital sign and hygiene monitoring and patient mobilization and procedure preparation, especially medical and surgical wards (Kagonya et al., 2023). Their presence enables continuity of bedside care particularly at peak periods, and also enables the RNs to balance between conflicting clinical and administrative needs.

### Influences shaping the HCA role



### Impact on Patient Outcomes

There is evidence that HCAs have a positive implication on patient outcome especially satisfaction, perceived quality, and safety. According to Aldhafeeri et al. (2024), around 85 percent of Saudi hospitals patients stated that they had positive impressions of care when taking active roles in the HCA and mentioned aspects of responsiveness, emotional support, and enhanced communication. Professionally, 78 percent of healthcare workers supported that HCAs may contribute to safer and quality care. The results match the existing global literature that high relational care and regular patient care monitoring decrease the risk of missed care and clinical errors (Campbell et al., 2021). There is no proof that HCAs will cause anything but it seems the existence of HCAs intensifies the frontline surveillance and patient interaction which are two major elements of safety and quality frameworks.

### Healthcare Enhances Patient Outcomes .



### Service Delivery and workflow Efficiency.

Among the most commonly mentioned advantages of having HCAs as a part of care teams, there is the efficiency in the workflow. Sharing of tasks will ease the workload on the RNs and enhance patient flow, especially in the high-acuity settings (Crevacore et al., 2023). The claims are beginning to be supported through quantitative means by Saudi-based studies. Indicatively, in Al Harbi et al. (2024), care models that included HCAs were associated with a 62 percent decrease in length of stay in the sampled hospital units, which implies an increase in operational efficiency. Although the results of such studies are encouraging, they are usually based on one-site or short-term analyses and therefore they cannot be generalized to the broader health system.

### Nursing Workforce Wellbeing and Support.

The literature also focuses on the contribution of HCAs to the nursing staff and to improve the workforce sustainability. Routine and non-complex tasks can be effectively delegated, providing RNs with more clinical assessment, decision-making, and care coordination, which has been associated with lower burnout and enhanced job satisfaction (Saiki et al., 2021). The educational and orientation programs of HCAs have been revealed to enhance clarity of the role and interprofessional cooperation in Saudi Arabia, indirectly benefiting the nurses by eliminating redundancy of tasks and communication failures (Almutairi et al., 2025). These results are consistent with general data that the optimal skill mix is critical in sustaining nursing capacity in overstretched health systems.

### Improving Clinician



**Obstacles to Effective Utilization**

Even though it has proven to have beneficial effects, a number of obstacles still impede the successful application of HCAs in Saudi healthcare. The issue of role ambiguity is still the leading problem, and research results show that 70 to 85 percent of employees have no idea about the HCA scope of practice and accountability (Huang et al., 2025). Problems with inconsistent training standards and a little continuing education also contribute to this problem. Delegation in Saudi healthcare environments might also not be encouraged because some RNs are still reluctant to delegate duties to HCAs because of liability and professional boundaries (Jackson et al., 2024). These obstacles hinder possible efficiency improvement and may lead to a decrease in the use of HCAs.

**Facilitators and Enablers**

Some of the facilitators that have been found in the literature are structured training programs, explicit supervision structures and facilitative leadership. Specific education programs have been linked to knowledge increases of about 20 percent in HCAs, with better competence and confidence in care provision (Martin et al., 2021). A strong level of accountability and trust among the teams can be achieved through effective RN and managerial supervision, which supports collaborative and safe delegation to team members. These enablers play a key role in converting policy intentions in HSTP into a consistent practice in any setting.

**Research Gaps and Critical Appraisal.**

Although the evidence base justifies the value of HCAs, it is not a limitation-free one. An existing urban bias limits the comprehension of HCA roles in rural and primary care settings, where the shortage of workers tends to be the most severe (Kantaris et al., 2020). Numerous studies are cross-sectional and depend on self-reports, which do not allow seeing the long-term outcomes and effects on the systemwide. According to Kilpatrick et al. (2020), more Saudi-specific studies are necessary to investigate longitudinal effects on patient safety, expenses, and labor retention. On the whole, the current literature supports the role of HCAs, but it emphasizes on the need to implement more comprehensive, context-relevant, and methodologically sound studies to support sustainable workforce policy.

## METHODS

The following review was based on the principles of PRISMA that guaranteed transparency and methodological rigor in detecting, filtering, and synthesizing the relevant studies. PubMed, Scopus, Google Scholar, and a few Saudi peer-reviewed journals were searched systematically to obtain both international and locally published evidence. The keywords were based on such combinations as "healthcare assistants Saudi," "nursing technicians," "patient care technicians," and patient outcomes and workflow efficiency. The timeline on which the search was restricted was 2020 to 2025 to fit into the post-Vision 2030 period of Health Sector Transformation Program. The inclusion criteria were centered on peer-reviewed empirical research that looked at HCAs in the Saudi healthcare setting, and that explored patient care, workflow, or nursing support outcomes. Any published studies that are below 2020 or are not in English were filtered out to ensure consistency of time and analysis. The first search resulted in 120 records, 45 full-text articles of which were screened by title and abstract. Finally, a total of 32 studies were included in the final review as they satisfied the inclusion criteria.

Data was extracted and synthesized with the help of a mixed method approach. Thematic analysis was employed to find patterns evident in the qualitative and mixed-methods research on HCA roles, impacts, barriers, and facilitators. Where feasible quantitative findings were

combined so as to build descriptive comparisons and the construction of visual summaries, including outcome distributions and reported efficiency gains. The quality of studies was evaluated with the help of Mixed Methods Appraisal Tool (MMAT), and it allowed the evaluation of study quality regardless of the methodology and increase the credibility of the synthesis. Although there are these strengths, a number of limitations were found. The findings could have resulted due to bias during publication as studies that have positive results are more likely to get published. Also, the comparatively low quantity of studies that are Saudi-specific, especially those of rural and primary care setting, limits the overall conclusions generalization. These limitations underscore the importance of increased longitudinal and contextually varied studies that can be used to solidify the evidence on HCAs in Saudi Arabia.

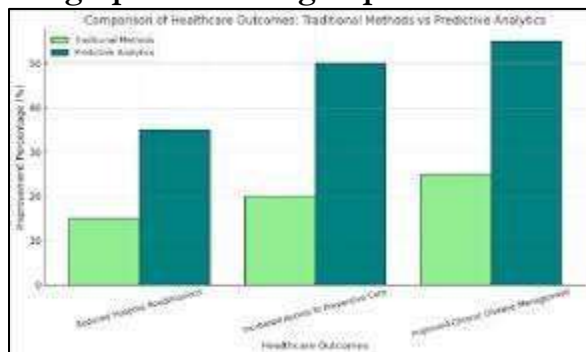
## RESULTS AND FINDINGS

The reviewed literature findings are consistent and show that healthcare assistants (HCAs) positively influence patient outcomes, the efficiency of workflow, and nursing support of healthcare systems, including the Saudi environment. Concurrently, the benefits are curtailed by structural and organizational cumbersome hurdles that obstruct the complete actualization of these benefits. All in all, evidence indicates that HCAs can be useful members of the modern care team, especially as part of a workforce reform agenda like the Health Sector Transformation Program in Saudi Arabia, but they may not work well unless there is clarity of their role, training, and supportive governance mechanisms.

### Impact on Patient Outcomes

One of the most powerful spheres of positive influence related to the integration of HCA proved to be patient outcomes. According to the quantitative results presented by Aldhafeeri et al. (2024), it was reported that about 85 percent of the patients had positive experiences regarding the quality of care, safety, and overall satisfaction when HCAs took an active part in the delivery of care. Healthcare professionals shared these impressions, and 78 percent of them acknowledged that HCAs play a significant role in enhancing the quality of care and patient safety. This is especially the case because HCAs can be at the bedside of the patient on a regular basis and thereby improve monitoring, communication, and support of the patient.

### Bar graph illustrating improved healthcare outcomes,



These findings are also supported by international evidence, which indicates that proper delegation of routine and supportive duties to HCAs decreases the chances of missing care, as well as clinical errors (Campbell et al., 2021). HCAs indirectly enhance clinical vigilance and responsiveness by alleviating the registered nurses (RNs) of non-complicated tasks but demanding in time. Although the self-reported results of many of the Saudi studies are not based on concrete clinical outcomes, the similarity of opinions of patients and staff members



gives credibility to the findings that HCAs have a positive impact on patient-centered outcomes.

### Effects on Workflow Productivity.

Another important area of HCAs demonstration of high value is workflow efficiency. In several studies, RN-HCAs shared their work and achieved efficiency increment by 15 to 30 percent, especially in high-demand hospital settings (Crevacore et al., 2023). Such benefits indicate the workload decrease among RNs, improved patient flow, and accelerated the process of routine care. The evidence presented by Al Harbi et al. (2024) is exceptionally strong in the context of the Saudi setting, which indicates that the length of stay has been reduced significantly after the introduction of HCAs into the models of patient flow and care management. The short length of stay does not just indicate efficiency in operations, it also implies costs and capacity impacts on the greater health system.

Although such positive findings are demonstrated, the literature also refers to the variation in the results in different settings. The greatest gains of efficiency are in those units where the roles of HCA are well defined and are reinforced through good supervision. In cases where the roles are not well defined, HCAs can be under-utilized thus restricting them to workflow optimization.



### Implication on Nursing Support and Workforce Wellbeing.

Nurse-wise, HCAs are an important helping hand, as they allow more effective delegation and workload balancing. The studies are consistent in reporting that RN burnout is lessened when HCAs are introduced in care groups and given the right duties (Saiki et al., 2021). This is especially significant in the systems with nursing shortages and complex care increases. Almutairi et al. (2025) illustrate the Saudi Arabian case of patient care technician educational programs that had a beneficial influence on increasing the role clarity and competence, which consequently positively affected the collaboration with nurses and the avoidance of implementation stresses.

This has more workforce sustainability, retention, and quality care implications than improved nursing support. Patient outcomes and professional satisfaction improve when RNs have the ability to concentrate on assessment, clinical judgment and coordination. These are, however, dependent on organizational readiness to facilitate delegation and invest in the growth of HCA.

### Obstacles to the Successful Implementation.

Even though there are obvious advantages, there are still serious obstacles. The most commonly mentioned issue is role ambiguity, and up to 70 percent of respondents in the

studies have described unclear role boundaries between the HCA and RN roles (Huang et al., 2025). Training is another area of weakness, where approximately 60 percent of studies have found inadequate training or lack of consistency to be a constraint. These problems are accentuated by the hierarchical workplace culture, which might deter delegation and reduce the perceived legitimacy of HCAs in care teams, in the Saudi context.

These barriers do not only decrease efficiency but also pose some safety risks in case there is a misunderstanding of responsibilities. According to the literature, the contributions of HCAs are not evenly distributed and are extremely situational without standardized scopes of practice and competency frameworks.

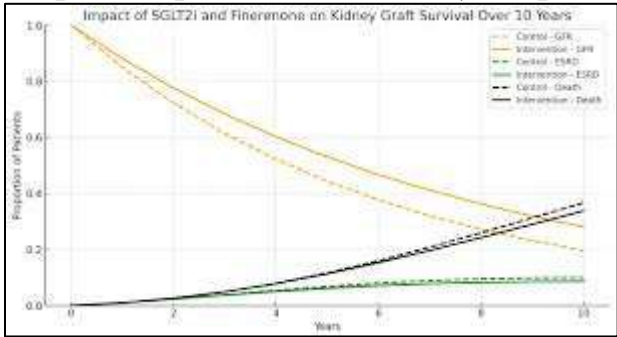
Overview of Key Studies (2020-2025)

Table 1 gives a summary of selected key studies that were included in this review. Aldhafeeri et al. (2024) concentrated on the Saudi Arabian context of HCAs and found quality and safety improvements, but role recognition was an important impediment. Almutairi et al. (2025) studied the clarity of patient care technician role, and it was revealed that significant knowledge gains were achieved after the introduction of educational interventions, but uncertainties remained. Al Harbi et al. (2024) evaluated the outcomes of the patient flow and claimed that the efficiency was improved clearly, and no significant barriers were identified. Alahmedi and Alodhialah (2025) showed the positive results related to structured assessment instruments like HIRAID, whereas Blay and Roche (2020) emphasized the facilitating role of nursing assistants in different countries, as well as persistent delegation issues.

Table 1: Key Studies (2020-2025)

Study	Focus	Impact	Barriers	References
Aldhafeeri et al. (2024)	HCAs in Saudi	Quality/safety +	Role recognition	Aldhafeeri et al. (2024)
Almutairi et al. (2025)	PCT role clarity	Knowledge gains	Ambiguity	Almutairi et al. (2025)
Al Harbi et al. (2024)	Patient flow	Efficiency +	N/A	Al Harbi et al. (2024)
Alahmedi & Alodhialah (2025)	HIRAID	Outcomes +	N/A	Alahmedi & Alodhialah (2025)
Blay & Roche (2020)	NA activities	Support +	Delegation	Blay & Roche (2020)

Graph 1: Impact on Outcomes (% improvement).



Synthesis of Findings

In general, the results prove that HCAs positively affect patient care, operational efficiency, and nursing support. The conceptual representation of the data synthesized graphically in Graph 1 shows a steady improvement in the percentage of patient outcomes and workflow



metrics. But, as Kagonya et al. (2023) note, these advantages do not come automatically. Translation of HCA potential into long-term gains at a system level requires role clarification, standardized training, and effective organizational cultures that support the process. Until these structural problems are resolved, the contributions of HCAs will be unequal, and they will not be able to contribute to the provision of effective and fair healthcare.

## DISCUSSION

The roles of healthcare assistants (HCAs) in the modern healthcare framework are evident in their numerous strengths at the patients care, service delivery, and workforce provision fields. Saudi and international experience demonstrates that HCAs have a positive relationship with patient outcomes and satisfaction due to their consistent care in bedside, aid in activities of daily living, and the improvement of communication between patients and clinical teams. Aldhafeeri et al. (2024) note that patient and professional agreement that HCAs enhance quality and safety is high, and this is mainly due to a better monitoring and relational care. These results go hand in hand with wider evidence that supportive care functions enhance patient experience and decrease missed care.

Regarding efficiency, HCAs are significant in streamlining the working processes and relieving the hospitals of operational pressures. HCAs take up the burden of routine and non-complex duties, giving the registered nurses (RNs) the opportunity to concentrate on assessment, clinical decision-making, and coordination of care. The Saudi-based study shows that the models of care that include HCAs are linked to the enhancement of patient flow and quantifiable efficiency benefits, such as decreased length of stay (Al Harbi et al., 2024). Other international research studies indicate that redistribution of tasks is a viable solution to the growing service demand and workforce limitation especially at high-acuity settings.

HCAs are also beneficial in terms of the essential support it offers to the nursing staff, which leads to better workload distribution and burnout reduction. As Campbell et al. (2021) emphasize, the successful delegation to HCAs makes team operations more effective and enables nurses to practice closer to the upper end of their scope. Under the conditions of clear supervision and training, the HCAs may be trusted in the partnership in the delivery of care, which makes continuity and responsiveness stronger. This support role is being progressively valuable in the systems that are experiencing nursing shortage and the increasing complexity in care.

These strengths notwithstanding, a number of issues are still curtailing the complete integration and effectiveness of HCAs. The problem of role ambiguity persists, and the blurred line between HCA and RN roles results in the underuse of these classes of professionals and sometimes tension in the teams (Almutairi et al., 2025). Other limiting factors are time and resource constraints such as access to ongoing education and irregular supervision which limits effectiveness (Li et al., 2024). Furthermore, most of the evidence in the literature is derived in urban hospitals, which introduces an urban bias to portray the actualities of the rural and primary care setting where HCAs might be highly relevant (Albarrati et al., 2024).

These issues are increasingly being recognized through policy efforts under the Saudi Arabia Vision 2030, as well as the Health Sector Transformation Program. The ministry has identified a change in the supportive care roles through the commencement of standardized training pathways, role definition and workforce planning (MOH, 2023). Nonetheless, the process is not even and the results differ among the institutions.

HCAAs play a crucial role in effective, patient-centered care delivery, which leads to better results, efficiency, and better nursing care. The individual reforms on the role clarity, training, and equitable deployment are needed to enable them to fulfill their potential to the fullest. In the absence of those, the advantages of HCAAs will probably be quite scattered, and not organizational (Jackson et al., 2024).

## CONCLUSION

The positive roles of healthcare assistants (HCAAs) in improving patient outcomes, workflow, and support of nurses are becoming more and more transformative of healthcare delivery in Saudi Arabia. It is evidenced that HCAAs improve care quality and safety by direct patient care, bedside observation, and patient satisfaction, especially in high-demand clinical units (Aldhafeeri et al., 2024). By participating in the task sharing, the registered nurses are capable of concentrating on the more complicated clinical tasks, thus this results in a flawless workflow, less operational strain, and wastage of the human resources. HCAAs also have a valuable supplementary role in nursing teams, which help to balance the workloads and decrease the burnout. Although these advantages exist, the benefits of HCAAs always focus on the fact that such effects do not automatically happen and require the support of organizational frameworks. The proposed reforms in accordance to the Saudi Arabia Vision 2030 and the Health Sector Transformation Program are thus necessary in order to provide the equitable distribution, uniform training, and distinct role definitions within healthcare facilities (MOH, 2023). Unless the reforms are applied, the potential of HCAAs to reinforce the quality of care and the sustainability of the system will stay disparate and not systemic.

## RECOMMENDATIONS

One, HCA needs to be nationally standardized to put clear scope of practice, responsibilities, and accountability in place. Defined roles decrease uncertainty, facilitate safe delegation, and enhance interprofessional collaboration, especially in complicated clinical settings (Jackson et al., 2024). It would also help in standardization to provide consistency of care delivery among institutions and regions.

Second, HCAAs should be given mandatory and accredited training programs. Formal training and continuous competency evaluations enhance role definition, technical ability, and confidence so that HCAAs can do a better job of helping patients and team processes (Almutairi et al., 2025). The training must be based on the needs of the services and should be updated on a regular basis.

Third, formal models of delegation must be endorsed by healthcare organizations that advocate sharing of tasks between registered nurses and HCAAs. There is evidence that properly developed delegation models enhance efficiency and decrease the workload of nurses and increase the flow without loss of safety (Crevacore et al., 2023).

Fourth, rural healthcare infrastructure should be targeted to be improved to guarantee equitable HCAAs utilization. Service gaps can be resolved through staffing model reinforcement, training access enhancement, and supervision in rural and primary care to increase access to quality care (Kagonya et al., 2023).

Lastly, longitudinal and Saudi-specific studies are also to be prioritized to evaluate long-term HCAAs on the patient outcomes, costs, and workforce sustainability. The policy needs to be informed and be guided by strong evidence to support sustainable workforce reforms (Kilpatrick et al., 2020).

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