The Determinants of Healthcare Staff Productivity; A Systematic Review

Abstract: *Productivity of healthcare staff affects patient outcomes among others, thus making it a critical aspect of healthcare system performance. As a result of the workforce shortages, increasing demands on the healthcare system, and the ongoing impact of the COVID 19 pandemic, it is important to understand the challenges impacting staff productivity. This systematic review was developed to assess the determinants of healthcare staff productivity. This systematic review was developed according to the PRISMA framework. We comprehensively searched literature published from 2020 to 2025 to find research studies on the healthcare workforce-related productivity factors including burnout, work engagement, job satisfaction, motivation, resilience, retention, work-life balance, and other relevant organizational factors. Of the studies shortlisted, 19 were selected for the review. The determinants of productivity of healthcare staff were found to be intricately interrelated at individual, organizational and psychosocial levels. The most notable barrier to productivity was burnout, and the most notable positive productivity and effectiveness of the workforce and the organization was derived from work engagement. Other factors included job satisfaction, motivation, resilience, retention, and work-life balance. From the findings of the review, healthcare organizations are likely to strengthen and broaden staff productivity and organizational effectiveness by reducing employee burnout, increasing employee work engagement and satisfaction, and improving workplace culture. Future research should examine the long-term impacts of productivity determinants and workforce outcomes using intervention research.*

Keywords: Healthcare Workforce Productivity; Burnout; Work Engagement; Job Satisfaction; Organizational Support.

1. Introduction

One of the challenges facing the performance of health care systems is the increasing demand of consumers, evolving technology, the persistent effects of the COVID-19 pandemic, and most importantly the expanding gaps in the health workforce. The cumulative effects of these challenges have created a crisis in the productivity of health care staff globally (De Vries et al., 2023). Health care staff productivity implies that health care staff can use their knowledge and skills and the resources at their disposal in the provision of health services. This can be done while ensuring that the quality and safety of the patient is not compromised. In a health care environment, productivity is not limited to the quantity of services rendered. It comprises the efficacy, the quality of care, the degree of engagement, and the performance of the organization. It, therefore, follows that the most pertinent challenge facing health care administrators and policymakers, and that which most researchers have concentrated their efforts on, is determining the factors that influence the productivity of health care personnel. The range of individual, organizational, and environmental determinants of productivity of health care staff has expanded in recent studies. Within this range, the most significant of these determinants is work engagement. Research demonstrates a strong relationship between worker engagement and job commitment and productivity in health care (Wang et al., 2023; Xu et al., 2024). Similarly, a stable workforce entails low levels of withdrawal and high levels of resilience. Therefore, engaged employees produce better outcomes for the organization

(Poku et al., 2025). Worker engagement increases productivity much better than the opposite; worker burnout, for example, is the opposite of worker engagement. Emotionally exhausted workers are less committed to the organization, and it shows in their productivity. It is detrimental to performance and increases the chances of attrition. There is evidence that burnout, especially serious burnout, has a negative effect on the health care system after COVID- 19 resulting in low performance. It is caused by the rapid increase in damage of the health care system, the workload, and new challenges that health care workers face (Nagle et al., 2024; Zhu et al., 2023). Galanis et al. (2021) noted that there is a strong correlation of workplace stressors on burnout of nurses, and it brings to light that the health care system has to combat the psychosocial problems that it faces.

Job satisfaction also positively affects productivity of the workforce. Health care workers who are job satisfied are motivated, committed, and perform better. Alkhateeb et al. (2025) conducted a systematic review, and outlined the support of management, the presence of career growth and development opportunities, good pay, and a good surrounding as the major contributors to job satisfaction of health care workers. According to these findings, health care worker job satisfaction is vital for enhancement of health care worker productivity. Apart from satisfaction and engagement, productivity is also dependent on sufficient organizational resources for the workforce to meet health care needs adequately and effectively. Management and workplace culture also affect health care worker productivity. Positive practice environments for nursing, and supportive workplace structures, positively influence engagement in the work, and reduce burnout. There is an effect on productivity and mental distress of health care workers of unmanageable workloads, and lack of support in the workplace (Daneshvar, Otterbach, 2025). Motivation and resilience are two major contributors of the productivity of the health care workforce. Resilience of the health care workforce means the capacity to bend and not break with the stresses and challenges of the job. It has been recently reported that motivation, resilience, and work-life balance are productivity determinants of the workforce, retention, and the overall effectiveness of the workforce (Assele et al., 2025; Yamoah, 2025).

There has been an increasing interest in the study of the performance of the workforce in the healthcare industry. Unfortunately, the productivity of healthcare staff still lacks comprehensive research and is still restricted to certain professional categories, healthcare systems, and areas of the world. Research has focused on the dissection of burnout, workplace engagement, and satisfaction, and the study of leadership, workplace environment, and staffing. There is a need to integrate current research to measure the most significant factors that influence the productivity of healthcare staff and to create evidence-based strategies for healthcare organizations and policymakers. The objective of this systematic review is to find and analyze the research on the factors impacting the productivity of healthcare staff. Drawing from the studies that have recently been published from 2020-2025, this review intends to consolidate knowledge of the determinants of productivity in the healthcare workforce and the formulation of strategies that consider and improve the healthcare workers' well-being, the performance of the organization, and the quality of healthcare services.

2. Methods

This systematic review aimed to identify and appraise the published literature on the determinants of the productivity of healthcare employees. The review was conducted according to the PRISMA guidelines. A literature search was carried out to locate the relevant studies published between January 2020 and May 2025. This search was designed to locate studies that explored the determinants of productivity, work performance, work engagement, burnout, and job satisfaction, as well as the study of motivation, resilience, turnover intent, retention, and other organizational elements. Publications relevant to this search were located by conducting systematic searches of

electronic databases and using keyword combinations related to the targeted healthcare workers and the productivity determinants. The terms of the search included “healthcare staff,” “healthcare workers,” “healthcare professionals,” “nurses,” “physicians,” “productivity,” “performance,” “work engagement,” “burnout,” “job satisfaction,” “motivation,”” and “organizational factors.” Boolean operators were used to combine search terms and improve the results of the study. To be included in this review, studies had to be published in English language peer-reviewed journals between 2020 and 2025, and had to examine the determinants of healthcare workforce productivity and related constructs. The review included studies on the workforce of healthcare professionals, including nurses and physicians. Studies that were published before 2020, conference abstracts, editorials, opinion papers, and studies without full text availability were excluded. Record duplicates were also eliminated. The selection process for this review was conducted in a number of stages. For the first stage, all retrieved records were scanned, and duplicates were eliminated. For the second stage, the remaining records had their titles and abstracts reviewed based on the specified eligibility criteria.

After that, full-text articles of the studies that appeared to meet our criteria were reviewed for inclusion. The search identified 246 records. After the removal of 39 duplicates, 207 remained. 188 articles were later excluded after title, abstract, and full-text review. They did not meet any of our inclusion criteria. In total, 19 studies were reviewed. Data collection from the studies included in the review was done with the use of a data extraction template. The data extraction template included the name of the authors, year of the research, the country where the research was conducted, the research design, sample populations, the determinants studied, and the findings regarding the productivity of healthcare staff. The data was organized to enable easy comparison of the data across the studies. The studies included in the review were assessed for the quality of research, and the criteria were based on the design of the study. The assessment of the quality of research was concerned with the validity of the study, the sample, the measurement of the study, the risk of bias, and the overall quality of the study. Because of the variety of studies in the review, a narrative approach was used. The main factors that were included in the analysis were burnout, resilience, work engagement, job satisfaction, motivation, factors in the organization, work–life balance, retention, and the factors in the organization. Figure 1 illustrates the study selection process and the number of studies included and excluded at each stage of the review.

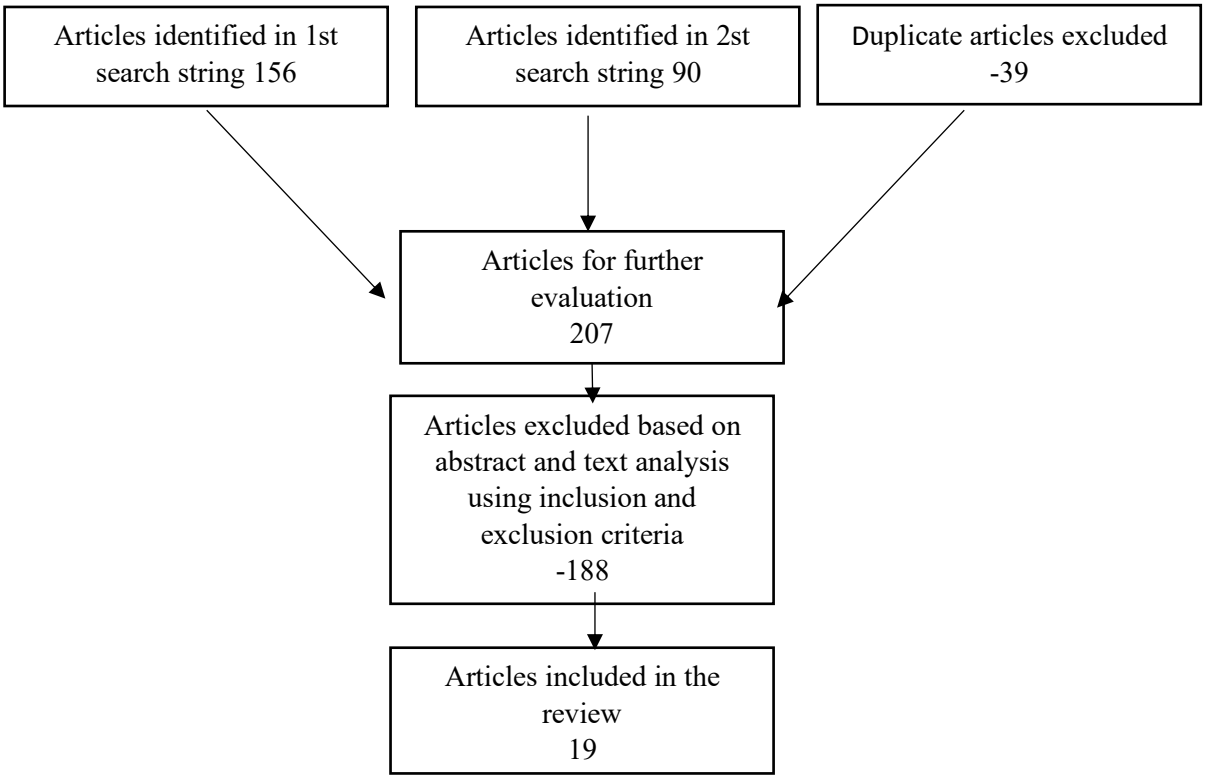


Figure 1. PRISMA flow diagram of the study selection process.

3. Results

3.1 Characteristics of Included Studies

Nineteen studies were included in this review. The studies brought a mix of settings, including China, Turkey, Ethiopia, Ghana, and Indonesia, as well as the Gulf Cooperation Countries, and Peru, and provided an international perspective, as some studies blended multiple settings. The studies also covered a range of time periods from 2021 to 2025. The international representation of the studies shows the varied issues that can impact healthcare staff productivity, considering different healthcare and organizational contexts. The studies included in this review used multiple approaches and the majority were cross-sectional studies. This emphasizes that most studies that consider healthcare settings and workforce issues tend to be of an observational nature. This review witnessed the presence of various systematic reviews and meta-analyses. These were important in providing a high level of evidence regarding healthcare workforce issues, and this variety was welcomed, as it included primary and secondary research, thus broadening the perspective on the issues discussed.

Looking at the studies included in this review, the multiple determinants that impact the productivity of healthcare staff from an individual, organizational, and psychosocial perspective were considered. Among these determinants, work engagement was considered extensively, and the factors that were studied included performance, satisfaction, and resilience, as well as turnover intentions. Burnout was also studied extensively, and research conducted during and after the COVID-19 pandemic emphasized the impact of burnout on the effectiveness of the healthcare workforce and on the overall psychological well-being of the workforce. Leadership support, workplace environment, staffing adequacy, communication practices, and organizational culture were some of the organizational determinants that were included in many studies. These factors were linked to positive employee

outcomes such as heightened workplace engagement, job satisfaction, and decreased turnover intentions. Professional recognition and motivation were additional determinants of productivity that were cited in the literature. These findings place managerial practices at the core of employee commitment and performance in an organization.

The review also cites resilience and work–life balance as some of the determinants. These factors are not as frequently cited in the literature as engagement and burnout; however, the preliminary studies identified them as playing an important role in the well-being of employees and in the sustained productivity of healthcare systems of high demand. It was also cited that the most productive healthcare systems are those that have a supportive work environment that fosters employees' organizational commitment and retention. From the studies, it can be concluded that healthcare staff productivity is influenced by personal factors, and systemic as well as occupational factors. Table 1 shows a literature review matrix that includes the studies reviewed in this research and their primary determinants.

Table 1. Literature Review Matrix

No.	Study	BO	WE	JS	MO	OF	RT	RE	WLB
1	Nagle et al. (2024)	✓				✓			
2	Wang et al. (2023)		✓	✓		✓			
3	Gülşen et al. (2024)	✓	✓						
4	Alkhateeb et al. (2025)			✓		✓			
5	Moreno-Martínez and Sánchez-Martínez (2025)	✓	✓	✓					
6	Assele et al. (2025)				✓	✓			
7	Daneshvar & Otterbach (2025)	✓				✓			
8	Zhu et al. (2023)	✓							
9	De Vries et al. (2023)					✓	✓		
10	Xu et al. (2024)		✓	✓					
11	Aungsuroch et al. (2024)		✓			✓			
12	Chiminelli-Tomás et al. (2025)	✓	✓			✓			
13	Kuribayashi et al. (2025)		✓			✓			
14	Poku et al. (2025)		✓				✓	✓	
15	Mustikawati & Ernawaty (2023)		✓			✓			
16	Bernales-Turpo et al. (2022)	✓	✓					✓	
17	Xu et al. (2024)		✓	✓			✓		
18	Yamoah (2025)					✓			✓
19	Galanis et al. (2021)	✓							

BO = Burnout; **WE** = Work Engagement; **JS** = Job Satisfaction; **MO** = Motivation; **OF** = Organizational Factors; **RT** = Retention/Turnover; **RE** = Resilience; **WLB** = Work–Life Balance.

3.2 Determinants of Healthcare Staff Productivity

3.3 Burnout as a Determinant of Healthcare Staff Productivity

Burnout, a three-part phenomenon including emotional exhaustion, depersonalization, and loss of a sense of personal accomplishment, was one of the most cited deterrents to productivity in healthcare staff in the studies analyzed. Burnout was associated with lower performance, lower satisfaction with one's job, lower commitment to the organization, and lower quality of patient care. According to the findings of Nagle et al. (2024), a combination of factors at the level of the organization, occupation, and the individual, was said to be the cause of burnout of healthcare employees. Their review described that large workloads and a low number of staff members, along with a lack of support and high levels of stress, contributed to burnout. These factors reduce the healthcare employees' ability to perform and to be productive. In the same vein, Zhu et al. (2023) described that there was a large occurrence of burnout and mental disorders in healthcare employees during and after the COVID-19 pandemic. The study described that healthcare employees who were under prolonged stress and demand, and who were subjected to high psychological pressure, were at high levels of emotional exhaustion, which impaired their professional effectiveness and functioning. Burnout negatively impacts healthcare employees, and this was further supported by the evidence of Galanis et al. (2021). Their systematic review showed a number of the risk factors of burnout among healthcare employees, in this case nurses. The combination of high workloads, poor personal protective resources, poor social support, and concern for the safety of the workplace caused high psychological strain on the workforce and decreased workforce productivity.

According to Gülşen et al. (2024), the negative correlation of burnout with work engagement was found for both nurses and physiotherapists. Healthcare staff reported high levels of burnout and, thus, low levels of engagement and commitment. Considering that work engagement is an indicator of the productivity and effectiveness of the healthcare worker, the findings of the study illustrate that burnout has serious consequences on workforce productivity. Moreover, more specific evidence was offered by Daneshvar and Otterbach (2025), who reported that stressors in the work environment primarily caused the burnout of healthcare employees. Their observations indicated that stress from the work environment, poor working conditions, and lack of support from management had a negative impact on the wellbeing and performance of employees. The authors maintained that to improve the productivity of employees and the sustainability of the organization, the stressors present in the workplace must be mitigated. Also, Bernales-Turpo et al. (2022) showed self-efficacy and satisfaction with life as psychological aspects that can influence work performance through the mediation of work engagement. While the study did not focus extensively on burnout, the findings point to psychological interventions to improve the psychological conditions of individuals to lessen the adverse effects of burnout on productive engagement. From the evidence presented, it appears that burnout is an influential factor for the productivity of healthcare employees. The studies pointed out that to increase the performance of employees, healthcare organizations should focus on stress in the workplace, conditions in the workplace, support from management, and employee wellbeing. This may lead to a decrease in employee burnout and increase productivity and improve the value of care provided.

3.4 Work Engagement as a Determinant of Healthcare Staff Productivity

Engagement at work is among the most significant determinants of productivity of healthcare staff and is documented in the majority of the studies reviewed. Engagement at work is the state of being psychologically positive, fulfilling, and related to the work state. It comprises vigor, dedication, and absorption. Healthcare staff who are engaged at work improve the productivity of the workforce and

the performance of the organization because they are motivated, committed to the objectives of the organization, and easily provide quality healthcare services. According to Wang et al. (2023), the work engagement of healthcare staff was associated with positive work outcomes, high commitment to the organization, and high satisfaction with the job. The study also noted that the engagement of staff is positively impacted by the presence of a work environment that is supportive and characterized by positive interpersonal relations and, in turn, makes staff productive and improves their professionalism. Xu et al. (2024) studied specialist nurses in China and observed the same results. Their study noted that work engagement was related to an enhancement in professional performance and satisfaction in the workplace. The study noted that engaged employees offer highly productive work and are committed to providing care to patients as compared to employees who are not engaged. Aungsuroch et al. (2024) conducted a systematic review to measure work engagement. They found that for nurses work engagement was influenced by work relationships, quality of work relationships, management style, instrumental management, and work-related training. The review also stated that to achieve the perks of having a more committed workforce, healthcare institutions need to work on the workforce engagement level.

A pandemic that affected worldwide work engagement, like COVID-19, did make work engagement a challenge. In the study by Mustikawati and Ernawaty (2023), they found that during a crisis work engagement for healthcare workers was greater when there was organizational aid, sufficient resources, and effective communication. This finding shows that to sustain the productivity of the workforce, organizational interventions during a crisis are necessary. Kuribayashi et al. (2025) provide more evidence to support the value of engagement by outlining the positive impact that workplace interventions to improve nurse engagement may have. The authors proposed that engagement and performance of the workforce may improve with initiatives focused on the employees' well-being and support, and satisfaction with the workplace. Poku et al. (2025) emphasized the role of engagement by stating that work engagement is the main link of the chain connecting resilience and workforce outcomes. Their studies suggested that engaged nurses had less turnover intentions and exhibited more positive work attitudes. Engagement is linked with higher productivity and better retention. The combined evidence shows that work engagement is the primary driver of the productivity of healthcare workers. To improve the performance of healthcare employees and the effectiveness of healthcare services, the focus of healthcare organizations should be on engaged employees. This can be achieved through supportive managers and framed by engagement strategies such as professional development, resources, and employee-centered policies.

Organizational, Motivational, and Psychosocial Determinants of Healthcare Staff Productivity Burnout and work engagement aside, the studies examined outlined multiple psychosocial, motivational, and organizational factors that, in addition to the workplace environment and organizational support, include: workplace resilience, turnover intention, workforce retention, work–life balance, and workplace satisfaction and motivation. These factors help define not only the professional performance of employees, but also their engagement with the organization and the sustainability of the workforce in the long term. The most important element of healthcare staff productivity is job satisfaction. Alkhateeb et al. (2025) analyzed healthcare job satisfaction based on elements such as leadership, fairness in job evaluations/salary, staff retention and turnover (career progression), and workplace relationships. Employees in healthcare who are more satisfied with their jobs tend to be more committed to their organizations and more productive. As in the other example, work satisfaction was determined to be related to work engagement and emotional wellness. This was also the case in the sector of healthcare, as evidenced by Moreno-Martínez and Sánchez-Martínez (2025). Job satisfaction was found to be an indirect/inverse function (relatively) of emotional fatigue/exhaustion and work overload. Thus, job satisfaction proves to be positively and directly

beneficial to employees' well-being, and is equally a significant boost to workplace productivity. Lastly, motivation was shown to have a positive correlation with the productivity of healthcare workers. Assele et al. (2025) maintained that motivated healthcare workers are more committed, effective, and responsible. Therefore, motivation and productivity were shown to be related to proper pay, acknowledgement, and supportive supervision and opportunities for professional development.

A major theme in the studies examined related to organizational factors. Chiminelli-Tomás et al. (2025) showed that positive nursing practice environments demonstrated the lowest levels of burnout and the highest levels of engagement amongst healthcare workers. It can be inferred that the nursing practice environment can be improved by having positive and supportive practice environments that incorporate good leadership, sufficient staffing, and structural collaboration in the workplace. Retention and turnover of the workforce was another major theme related to productivity; these factors were prominently discussed. According to De Vries et al. (2023), the retention of healthcare workers is positively related to having a supportive organizational culture, management systems, and continual professional development. High retention rates create low turnover and disruption in the workforce, which in turn helps the organization maintain a high level of productivity and quality of services over time. In addition, Xu et al. (2024) showed that turnover intent among healthcare workers was lowest when the level of job satisfaction and work engagement was highest. Psychological factors like resilience also are important for productivity. According to Poku et al. (2025), resilient healthcare workers were more engaged and had lower turnover intent. This showed that coping with the demands and stress of work was easier for resilient employees. Improvement of resiliency in employees may also improve turnover intent and engagement. Lastly, work-life balance was noted to impact the productivity of healthcare personnel. Yamoah (2025) demonstrated that the equilibrium of personal and professional commitments correlated positively to the level of commitment and performance of the employee. The research underscored that the work-life balance policies of the organization would improve the well-being of employees and their productivity by reducing stress. As a summary, the productivity of healthcare personnel is a product of psychological constructs as well as the environment, the organization, and the workplace. In the domain of healthcare services and the productivity of the personnel, performance satisfaction, and motivation of personnel, organizational support, resilience, retention of the workforce, and work-life balance are significant factors, and addressing them will result in significant improvement.

4. Discussion

This systematic review identifies the factors that impact the productivity of healthcare staff through published evidence between 2020-2025, and synthesizes this evidence. The results show that productivity of healthcare staff is impacted by several individual, organizational, and psychosocial factors. In the studies analyzed in this review, burnout, engagement at work, satisfaction with work, motivation, support from the organization, resilience, factors that impact retention, and work-life balance were some of the most critical factors that impacted productivity of the workforce. One of the factors that impacted productivity of healthcare staff that was most often cited in the studies was burnout. The studies cited in the review show that the productivity of healthcare staff that reported a higher level of emotional exhaustion and a higher level of occupational stress had a higher level of disengagement, a lower level of job performance, and a lower level of wellbeing. This review cites Nagle et al. (2024), Zhu et al. (2023), and Galanis et al. (2021) because they all showed that burnout among healthcare staff increased after the COVID-19 pandemic, and it continues to impact the productivity of healthcare staff in all healthcare systems worldwide. Having adequate psychological support staff, and having adequate protections of the workload of staff, may help sustain the

productivity of staff. This review synthesizes other studies and demonstrates that work engagement most positively impacts the productivity of healthcare workers, as seen in the review studies by Wang et al. (2023), Xu et al. (2024), and Aungsuroch et al. (2024). Productive healthcare workers, who reported higher productivity and performance at work, loyalty, and commitment to the organization, had higher engagement in all the studies. The findings are in agreement with the contemporary theories regarding the perceptions of value and support and the allocation of work-related resources by employees. Based on these findings, engagement may mitigate burnout, but the factors that influence engagement and burnout are interconnected.

The studies of Alkhateeb et al. (2025), Moreno-Martínez and Sánchez-Martínez (2025), and Assele et al. (2025), in addition, show that the impact on the healthcare workforce's outcomes are also determined by job satisfaction and motivation. It can be seen from the findings that the satisfaction and motivation of healthcare personnel is directly related to the high-performance and organizational commitment of healthcare personnel. It is becoming increasingly clear that satisfaction and motivation are related to adequate pay, oversight and support, recognition, and provision for training and career advancement. These findings place greater emphasis on the imperative of organizational and human resource management practices. The productivity of employees can also relate to the organization factors of having leadership support, an affirmative workplace climate, and an appropriate level of personnel staffing. These factors have been identified in several studies. Chiminelli-Tomás et al. (2025) and De Vries et al. (2023) both indicated that a positive workplace culture in healthcare systems correlates with enhanced employee engagement and retention. In the same vein, Daneshvar and Otterbach (2025) stated that inadequate workplace conditions and organizational stressors were detrimental to employee well-being and workplace performance. These results indicate that productivity can be the result of management style and framework and should not be considered only as an individual factor. The review also noted that the resilience of healthcare workers and their work-life balance are new and growing factors associated with the productivity of healthcare workers. Though the research progress on these two factors is not as large as that on burnout and engagement, the research that has been done indicates that these two factors contribute to the well-being of and sustain the workforce. Poku et al. (2025) associated resilience with increased engagement and decreased turnover intentions, while Yamoah (2025) found that a better work-life balance for employees is positively related to the productivity of the employees and their organizational commitment.

The results of this review suggest that the productivity of healthcare staff is a complex and multifactorial concept that includes both individual and organizational elements. Beyond negative aspects, such as burnout, which is related to a decrease in productivity, there are positive aspects that can lead to an increase the productivity of the workforce. These aspects include resilience, engagement, satisfaction, and motivation within a supportive workplace environment. Those healthcare organizations that wish to improve the productivity of their workforce have to embrace a holistic approach to improving workforce health and well being alongside improving the performance of the organization. Although the studies included in the review brought forth some insights, their limitations must also be recognized. Most of the reviewed studies used a cross-sectional study design, and therefore, the relationship between the factors and productivity outcomes remains unclear. In addition, the variations in measurement, health care systems, and cultures lower the possibility of a widespread applicability of the results. Further studies need to be undertaken to analyze data over an extended time period as well as carry out interventional research. With these studies, we can better understand how the determinants of productivity change over time, as well as gain a clearer understanding of how productivity outcomes in the workforce can be enhanced through the use of interventions within organizations.

5. Conclusion

Here we present a systematic review of 19 studies from 2021 to 2025 focusing on determinants of productivity in healthcare staff. The studies show that productivity is a function of individual, systemic, and psychosocial factors. Among the determinants, burnout and work engagement were the most described and most consequential, signifying the importance of both on the productivity of staff and the performance of the healthcare system. This review found that burnout reduces the productivity of healthcare staff by decreasing overall staff well-being and work engagement as well as increasing turnover intentions. Conversely, work engagement is related to higher work performance, satisfaction, and positive staff retention. Staff satisfaction and motivation are also important determinants of staff productivity, especially when there is positive staff engagement at the place of work and the staff have opportunities to grow their skills. Quality of leadership and the level of the staff positively and negatively influence the outcomes sought by the organization. Studies show that the level of employee engagement, the nature of the management practices, and organizational culture positively influence the quality of services rendered in the organization and the productivity of the workforce. Additionally, the work–life balance, factors of retention, and resilience have been described as critical to workforce sustainability in the organization. Taken together, the results suggest that addressing both the well-being of employees and the effectiveness of the organization calls for an integrated and multi-faceted understanding of productivity. These findings suggest that healthcare leaders and policymakers need to focus on reducing burnout, improving work engagement, and increasing supportive work climate. These initiatives are likely to enhance productivity and lead to positive patient care outcomes, improve the quality of care, and enhance sustainability of healthcare systems. Subsequent research should explore the productivity determinants and workforce outcomes. This exploration should be conducted through longitudinal and intervention-based research. This will provide a stronger evidence base for the establishment of policies and management practices that enhance the productivity of the healthcare workforce.

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