# Scheduling Management Practices and Absenteeism on the Productivity of Nurses in a DOH Retained Hospital

**Myvanwy S. Gide, RN[1], Joan P. Bacarisas, DM, MAN, RN[2]**

**Graduate School of Allied Health Sciences, University of the Visayas**

**DOI: https://doi.org/10.51584/IJRIAS.2026.11050032**

**Received: 28 April 2026; Accepted: 04 May 2026; Published: 25 May 2026**

## ABSTRACT

This study aimed to assess the interrelationship among scheduling practices, absenteeism, and productivity of nurses in a Level II DOH-retained hospital in the Caraga Region. A quantitative descriptive-correlational research design was utilized. A total of 205 nurses were selected using proportionate stratified sampling. Data were gathered using standardized and adapted instruments measuring scheduling practices, nurse productivity, and absenteeism. Statistical tools included mean, standard deviation, and Pearson r to determine relationships among variables. Findings revealed that scheduling practices were generally effective, while nurse productivity was high across all dimensions. Absenteeism was low, with nurses demonstrating strong commitment to attendance. A significant relationship was found between scheduling practices and nurse productivity. However, absenteeism did not show a significant relationship with productivity. The study concludes that effective scheduling practices contribute to sustained nurse productivity, while absenteeism alone may not directly influence performance. The findings highlight the importance of strengthening scheduling systems to support workforce efficiency. A Nurse Scheduling and Attendance–Productivity Enhancement Plan was proposed.

**Keywords:** Scheduling practices, nurse productivity, absenteeism, hospital nurses, workforce management

## INTRODUCTION

Nurses play a vital role in ensuring safe, effective, and continuous healthcare services in hospital settings through direct patient care, coordination with healthcare professionals, and timely completion of clinical tasks, while their ability to perform these roles is shaped not only by knowledge and skills but also by organizational practices such as work scheduling, which determines staff deployment, workload distribution, and rest management in a 24-hour service environment; in government hospitals, including DOH-retained institutions, nurses work under demanding conditions characterized by high patient volume, limited staffing, and rotating shifts, making scheduling a challenging responsibility that must ensure adequate staffing, fairness, flexibility, balanced workload, and sufficient rest, as ineffective scheduling has been associated with fatigue and reduced work functioning among nurses (Dall'Ora et al., 2022; Stimpfel & Aiken, 2021).

Scheduling management practices refer to the systematic planning and assignment of duty schedules, including scheduling methods, fairness and transparency in shift allocation, flexibility in adjustments, workload balance, and adequacy of rest periods, which influence nurses' physical readiness, energy conservation, and capacity to sustain efficient work performance (Booker et al., 2023; Shagvaliyeva & Yazdanifard, 2014; Dall'Ora et al., 2022); productivity in nursing reflects how effectively nurses complete clinical tasks while maintaining safety and quality care, and is affected by extended working hours, irregular shifts, and insufficient recovery time (Stimpfel & Aiken, 2021), while attendance behavior, particularly absenteeism, further influences productivity, as unplanned absences reduce staffing and increase workload, with fatigue, emotional strain, and demanding schedules linked to higher absenteeism (Cho et al., 2020; Booker et al., 2023).

In the Philippine context, particularly in DOH-retained hospitals, staffing shortages and increasing service demands remain evident, with 12-hour shift systems, consecutive duty days, limited recovery time, and frequent extension of duty hours contributing to physical exhaustion, sleep disturbances, reduced concentration, increased absenteeism, and decreased work efficiency; despite existing international literature, limited local studies have

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

examined scheduling, absenteeism, and productivity collectively, reflecting an empirical gap addressed by this study, which aims to assess their interrelationship among nurses in a Level II DOH-retained hospital in the Caraga Region during the first quarter of 2026, anchored on Sustainable Development Goals 3 and 8, with findings expected to guide nursing management in improving scheduling policies, workload distribution, attendance, and performance, supported by the researcher's 13 years of hospital experience that strengthens the study's relevance and practical grounding.

**Research Questions**

This study was to assess the relationship between scheduling management practices and absenteeism on the productivity of nurses in a Level II Government Hospital in the Caraga Region in Philippines for the 1st quarter for the year 2026.

The study specifically answered the following queries:

1. What was the level of scheduling management practices among nurses in terms of:

1.1 scheduling method;
1.2 fairness and transparency;
1.3 flexibility;
1.4 workload balance; and
1.5 rest periods?
2. What was the extent of absenteeism among nurses in terms of:

2.1 frequency of absence;
2.2 causes of absence (physical, emotional and organizational; and
2.3 attitude toward attendance?
3. What was the level of productivity among the nurses in terms of:

3.1 task efficiency;
3.2 quality of work;
3.3 initiative and responsibility;
3.4 interpersonal performance; and
3.5 utilization of resources?
4. Was there a significant relationship between:

4.1 scheduling management practices and nurse productivity,

4.2 nurse absenteeism and nurse productivity?

5. What nurse scheduling management practices and attendance-productivity enhancement plan was proposed based on the findings of the study?

**Statement of Null Hypothesis**

**$H_{o1}$:** There was no significant relationship between scheduling management practices and nurse productivity.

**$H_{o2}$:** There was no significant relationship between nurse absenteeism and nurse productivity.

**Review Of Related Literature And Studies**

**Scheduling Management Practices of Nurses.** Nurse scheduling is an essential function of nursing management that determines how nurses are distributed across shifts to ensure continuity and quality of patient care, often requiring adjustments due to staff shortages, fluctuating patient census, emergency leaves, and operational demands, making it a complex administrative responsibility that must balance service coverage with nurses' wellbeing, as frequent schedule changes and poorly managed shift patterns may increase fatigue risks

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

and reduce staff stability (Booker et al., 2024); healthcare institutions have adopted electronic rostering and participatory scheduling approaches to improve efficiency, with evidence showing that these systems enhance organization and coordination between staff preferences and hospital needs, although improper implementation may lead to perceived unfairness and dissatisfaction (O'Connell et al., 2024), while participatory scheduling supports workforce sustainability when transparency and equitable shift distribution are maintained (Epstein et al., 2023).

Scheduling management practices include scheduling method, fairness and transparency, flexibility, workload balance, and rest periods, where clear and timely preparation of schedules reduces confusion and promotes stability, and electronic systems allow smoother coordination (Booker et al., 2024; O'Connell et al., 2024); fairness and transparency ensure equal distribution of shifts and clear decision-making, increasing acceptance among nurses (Gerlach et al., 2025; Renggli et al., 2025), while flexibility through self-scheduling improves satisfaction and work-life balance (Gray et al., 2024; Epstein et al., 2023), workload balance addresses the effects of overtime, understaffing, and uneven shifts (Martins et al., 2025), and adequate rest periods are necessary to reduce fatigue and maintain safe performance, particularly after night shifts (Inchingolo et al., 2025).

**Absenteeism among Nurses.** Absenteeism among nurses remains a persistent workforce issue in hospital settings as it directly affects staffing adequacy, workload distribution, continuity of care, and service efficiency, and is commonly described as unplanned absence from scheduled work duties and an important indicator of organizational health and employee wellbeing; studies show that nurse absenteeism is often associated with physical fatigue, emotional strain, work overload, and workplace-related stressors, contributing to understaffing, increased workload for present staff, delayed patient care, and reduced team performance (Van den Heuvel et al., 2020; Lesener et al., 2020). Evidence further indicates that high job demands such as heavy workload and time pressure significantly predict sickness-related absenteeism, while occupational strain and burnout are strong contributors to employee absence in healthcare environments (Van den Heuvel et al., 2020; Lesener et al., 2020).

In nursing practice, absenteeism is also linked with scheduling difficulties and insufficient recovery periods, where demanding shift patterns and limited rest lead nurses to report absence as a coping response, reflecting that absenteeism is not only a personal issue but also a result of organizational conditions (Schaufeli & Taris, 2021); frequency of absence serves as a direct measure of attendance behavior and is associated with workload stress and fatigue accumulation (Van den Heuvel et al., 2020), while its causes include physical factors such as illness and exhaustion, emotional factors such as burnout and mental fatigue, and organizational factors such as workload imbalance, understaffing, unfavorable scheduling, and limited managerial support, with excessive job demands and insufficient work resources increasing absenteeism (Lesener et al., 2020; Schaufeli & Taris, 2021), and attitudes toward attendance, including commitment and perceived organizational support, influencing lower absenteeism tendencies.

**Nurse Productivity.** Nurse productivity is commonly discussed as how well nurses are able to finish required work within a shift while keeping care safe, accurate, and patient-centered, emphasizing not only speed but also performing the right tasks at the right time, coordinating with the team, and using available resources wisely, with evidence describing task performance as required job activities alongside behaviors that support the work environment and organizational functioning (Krijgsheld et al., 2022). Recent studies show that nurse productivity can decline when nurses experience stress, fatigue, and health problems, with measurable productivity loss linked to poorer psychological well-being, including missed work time and reduced effectiveness, while occupational stress, psychological safety, and digital fatigue are also associated with job performance, highlighting the impact of newer work pressures on daily duties (Hussein et al., 2024; Demir et al., 2025).

Work patterns also influence productivity, as shift-related disruptions such as circadian rhythm changes affect work performance, with quality of work life playing an important role in this relationship (Poormoosa et al., 2024), supporting the discussion of productivity through key areas such as task efficiency, quality of work, initiative and responsibility, interpersonal performance, and utilization of resources.

**Task efficiency**. Task efficiency refers to how nurses plan, prioritize, and complete required tasks within a shift, including timely procedures and documentation, and is described as part of task performance involving direct and indirect duties formally expected in a role (Krijgsheld et al., 2022); however, recent evidence shows that

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

workplace time loss and "time wasters," such as interruptions and system-related delays, can reduce efficiency by pulling nurses away from direct patient care and delaying task completion, highlighting task efficiency as a practical dimension of nurse productivity in real hospital conditions (Qtait et al., 2025).

**Quality of work**. Quality of work refers to how accurately and consistently nurses perform duties while following standards and maintaining patient safety, with evidence showing that work-related pressures and fatigue can affect performance outcomes and influence the quality and safety of care delivery (Demir et al., 2025); moreover, work stress is consistently linked with weaker work functioning, as stressful and unhealthy work conditions can harm nurses' performance, supporting the view that quality of work is a core component of productivity beyond simply completing tasks (Kiptulon et al., 2024).

**Initiative and responsibility**. Initiative and responsibility include self-direction, accountability, willingness to take needed actions, and follow-through even with minimal supervision, aligning with the concept that job performance includes behaviors that sustain work effectiveness beyond task completion (Krijgsheld et al., 2022); however, demanding conditions such as stress and fatigue can weaken these behaviors over time, as higher occupational stress and digital fatigue are linked with lower performance, indicating that nurses may struggle to maintain initiative and consistent responsibility in complex work settings (Demir et al., 2025).

**Interpersonal performance**. Interpersonal performance refers to communication, teamwork, coordination with colleagues, and maintaining respectful work relationships that support patient care, recognizing that nursing work is highly interdependent and that team interaction is a key component of strong performance; evidence shows that supportive work relationships and collaboration, including nurse-physician collaboration, are linked with better work engagement and functioning, which are associated with stronger performance (Aungsuroch et al., 2024), while weak teamwork and communication may lead to increased stress and interruptions, reducing productivity and care quality.

**Utilization of resources**. Utilization of resources refers to how well nurses manage time, supplies, equipment, and support systems while ensuring patient safety, including avoiding waste, proper use of equipment, and adjusting work strategies during high workload periods; however, resource constraints and system delays can affect work output, as time loss due to workflow barriers and system issues reduces efficiency in using time and resources (Qtait et al., 2025), while work environment stress and workload pressures can weaken performance and functioning, leading to less effective resource utilization, supporting its inclusion as a key dimension of productivity in hospital settings (Kiptulon et al., 2024).

**Scheduling management practices and nurse productivity**. Recent literature shows that nurse productivity is closely connected to how schedules are planned, distributed, and implemented in hospitals, as scheduling management practices influence fatigue, sleep quality, workload exposure, recovery time, and cognitive performance, which affect nurses' ability to maintain efficient and safe work output (Booker et al., 2024); organized systems such as electronic, self-rostering, and AI-based scheduling improve workflow, staff experience, and work quality (O'Connell et al., 2024; Kang et al., 2025), while shift timing and circadian disruption are associated with lower productivity and reduced task effectiveness due to fatigue, especially in longer shifts such as 12-hour schedules (Poormoosa et al., 2024; Scott-Marshall et al., 2024), supporting the view that scheduling practices shape nurses' readiness, workload capacity, and sustained efficiency in clinical work.

**Scheduling Management Practices and Nurse Absenteeism**. Recent studies consistently show that scheduling management practices are closely linked to absenteeism among nurses, as poorly designed schedules such as frequent night duties, short rest intervals, uneven workload distribution, and lack of flexibility increase fatigue, stress, and sickness-related absences, with high job demands and insufficient recovery time significantly predicting absenteeism (Van den Heuvel et al., 2020); limited rest periods and inadequate recovery further influence absence behavior (Wynendaele et al., 2021), while perceptions of unfair scheduling and lack of organizational support are associated with disengagement and withdrawal behaviors, including absenteeism (Lesener et al., 2020), and flexible or participatory scheduling can improve attendance by reducing stress and supporting work–life balance (Wynendaele et al., 2021), highlighting that absenteeism is influenced by

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

organizational conditions such as workload, rest, and control over schedules (Schaufeli & Taris, 2021), thus supporting the relationship between scheduling management practices and nurse absenteeism.

**Nurse absenteeism and nurse productivity**. Recent evidence shows a clear connection between nurse absenteeism and productivity in hospital settings, as absence reduces available staffing, increases workload for remaining nurses, and leads to delays in care, missed tasks, and reduced work output, affecting both individual and unit performance (Dall'Ora et al., 2025); absenteeism also contributes to workforce instability, worsens staffing gaps, and increases strain that can affect work performance, while productivity loss occurs through missed workdays and reduced service time, making absenteeism a major contributor to organizational inefficiency and disrupted hospital performance (Yaghoubi et al., 2021; Hussein et al., 2024), with evidence further showing that frequent absences create operational burden, increase overtime and shift gaps, and reduce overall productivity, forming a reinforcing cycle between absenteeism and reduced performance (Shdaifat, 2023; Dall'Ora et al., 2025).

## RESEARCH METHODOLOGY

**Design.** The study utilized a quantitative research approach employing a descriptive correlational research design. In application to the study, the descriptive design was used to determine the level of scheduling practices, the extent of absenteeism, and the level of productivity among nurses. The correlational design was used to assess whether scheduling management practices were significantly related to absenteeism and whether scheduling management practices and absenteeism were significantly associated with nurses' productivity.

**Environment.** This study was conducted in a Level 2 government hospital located in the Caraga Region, Philippines.

**Respondents.** The respondents of this study were the 205 staff nurses in the hospital.

**Sampling Design.** This study employed a proportionate random sampling design with stratification by area of assignment to ensure fair representation of nurses across clinical and non-clinical units, recognizing variations in roles and workloads, with each unit serving as a stratum and respondents selected proportionally to population size; from a total nursing population of 440, a sample size of 205 was determined using the Raosoft calculator at a 5% margin of error, and proportionate stratified sampling was used to select nurses from various departments including wards, intensive care units, operating room, emergency department, specialty units, outpatient services, and administrative areasn.

**Inclusion Criteria and Exclusion Criteria.** The study included registered nurses currently employed in a DOH-retained Level II hospital in the Caraga Region, regardless of employment status, who had at least three months of continuous service and were assigned to clinical or clinically supporting areas with direct involvement in patient care and regular shift work, provided they were available during data collection and voluntarily participated with informed consent; excluded were nurses on official leave during the data-gathering period and those who declined to participate.

**Instrument.** The study utilized a three-part research instrument composed of adopted questionnaires to measure scheduling practices, nurse productivity, and nurse absenteeism, including the Nurse Scheduling Management Questionnaire (NSMQ) developed by Rizany et al. (2019), a 25-item tool with five dimensions scheduling method, fairness and transparency, flexibility, workload balance, and rest periods using a five-point Likert scale and interpreted through composite mean scores, with a Cronbach's alpha of 0.89 indicating high reliability; the Nurse Productivity Scale (NPS) by El-Ebiary et al. (2017), also a 25-item instrument with five dimensions task efficiency, quality of work, initiative and responsibility, interpersonal performance, and utilization of resources measured using a five-point frequency scale and interpreted based on mean scores, with a Cronbach's alpha of 0.91 indicating excellent reliability; and an adapted Nurse Absenteeism Questionnaire based on WHO indicators and the RN4CAST framework, consisting of 13 items covering frequency, causes, and attitude toward attendance, with Likert-scale scoring interpreted through mean values, where higher scores indicated higher absenteeism, and a Cronbach's alpha of 0.86 indicating good internal consistency.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

**Data Gathering Procedures.** The data gathering procedures consisted of pre-data gathering, actual data gathering, and post-data gathering phases, beginning with the approval of the research title, assignment of an adviser, processing of transmittal letters for administrative permission, conduct of a design hearing, and securing ethical clearance prior to data collection; upon issuance of the Notice to Proceed, respondents were recruited and questionnaires were personally distributed through face-to-face administration at convenient times to avoid work disruption, ensuring confidentiality and completeness of responses, with retrieval done immediately or at an agreed time until the required sample was achieved. After data collection, all responses were encoded and organized using Microsoft Excel, submitted to a statistician for analysis, and presented in tabular form with interpretations and supporting literature, followed by final defense before a panel of experts, and upon approval, all accomplished questionnaires were properly shredded to maintain confidentiality and comply with ethical standards.

**Statistical Treatment of Data.** The study utilized descriptive and inferential statistics to treat the data, where mean and standard deviation were used to determine the level of scheduling management practices, the level of nurse productivity, and the extent of absenteeism based on composite mean scores, with the mean describing overall responses and the standard deviation indicating variability, while Pearson Product–Moment Correlation (Pearson r) was used to determine the significant interrelationships among scheduling management practices, absenteeism, and nurse productivity, specifically assessing the associations between scheduling practices and absenteeism, scheduling practices and productivity, and absenteeism and productivity.

**Ethical Considerations.** Ethical considerations are an essential component of any research study. The study was submitted to the ethics committee of both the university and the hospital. Ethical approval was sought prior to the start of data gathering to ensure that the welfare of the respondents was protected.

## PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

Table 1 Scheduling Management Practices of Nurses

| Dimensions | Mean score | SD | Interpretation |
|---|---|---|---|
| Scheduling Method | | | |
| 1. The nurse schedule is prepared in advance and posted on time. | 4.20 | 0.795 | Agree |
| 2. Scheduling is done by authorized supervisors. | 4.57 | 0.658 | Strongly agree |
| 3. The scheduling method is clear and organized. | 4.21 | 0.767 | Strongly agree |
| 4. I am informed promptly about schedule changes. | 4.29 | 0.728 | Strongly agree |
| 5. I understand how scheduling is done in our unit. | 4.38 | 0.742 | Strongly agree |
| Factor mean | 4.33 | 0.599 | Very Good Scheduling Management Practices |
| Fairness and Transparency | | | |
| 6. The schedule is distributed fairly among nurses. | 3.82 | 0.986 | Agree |
| 7. No nurse is repeatedly assigned to undesirable shifts. | 3.69 | 0.969 | Agree |
| 8. Schedule decisions are transparent. | 4.12 | 0.802 | Agree |
| 9. My shift preferences are considered | 3.99 | 0.770 | Agree |
| 10. Night shifts are fairly distributed. | 3.79 | 1.011 | Agree |
| Factor mean | 3.88 | 0.787 | Good Scheduling Management Practices |
| Flexibility | | | |
| 11. I am allowed to request schedule changes. | 4.36 | 0.725 | Agree |
| 12. Shift swapping is permitted with approval. | 4.45 | 0.723 | Strongly agree |
| 13. Emergency schedule changes are handled properly. | 4.06 | 0.802 | Agree |
| 14. Management accommodates personal scheduling needs. | 4.00 | 0.776 | Agree |
| 15. I feel comfortable discussing scheduling concerns. | 4.26 | 0.798 | Strongly agree |
| Factor mean | 4.23 | 0.600 | Very Good Scheduling Management Practices |

| | | | |
|---|---|---|---|
| Workload Balance | | | |
| 16. Nurses are given equal number of shifts weekly. | 3.78 | 0.988 | Agree |
| 17. Workload is evenly distributed across shifts. | 3.71 | 0.961 | Agree |
| 18. Scheduling considers nurses' competencies. | 4.11 | 0.966 | Agree |
| 19. Day and night shifts are fairly rotated. | 3.68 | 0.967 | Agree |
| 20. Scheduling prevents understaffing and overload. | 4.29 | 0.798 | Strongly agree |
| Factor mean | 3.91 | 0.675 | Very Good Scheduling Management Practices |
| Rest Periods | | | |
| 21. I am given enough rest days between shifts. | 3.69 | 0.939 | Agree |
| 22. Night duties are followed by adequate rest. | 3.68 | 0.930 | Agree |
| 23. My schedule supports work–life balance. | 3.62 | 0.951 | Agree |
| 24. Long consecutive shifts are avoided. | 3.70 | 0.998 | Agree |
| 25. I rarely feel fatigued due to scheduling. | 3.62 | 0.875 | Agree |
| Factor mean | 3.66 | 0.862 | Good Scheduling Management Practices |
| Grand mean | 4.00 | 0.591 | Good Scheduling Management Practices |

Note. *n=234.*

As shown in Table 1, the findings indicate that scheduling management practices reflect good to very good quality systems, suggesting a structured and reliable approach to workforce planning that supports continuity of care, minimizes disruptions, and enhances coordination, with structured scheduling enabling nurses to anticipate duties, prepare for tasks, and maintain consistency in care delivery, supported by evidence that high-quality scheduling improves coordination and team performance (Booker et al., 2024; O'Connell et al., 2024); clear and well-communicated scheduling methods enhance role preparedness and reduce confusion, while fairness and transparency, although generally good, may still present inconsistencies that affect morale and trust, as perceived inequities in shift allocation can impact engagement (Gerlach et al., 2025; Renggli et al., 2025). Flexibility was rated very good, indicating opportunities for schedule adjustments that enhance work–life balance and collaboration (O'Connell et al., 2024; Booker et al., 2024), while workload balance, although very good, highlights that equal shift distribution does not always reflect equal workload due to varying patient acuity, and rest periods, though good, require attention as insufficient recovery time may lead to fatigue and reduced performance, emphasizing the importance of adequate rest for safe nursing practice (Inchingolo et al., 2025; Djupedal et al., 2025), overall demonstrating strong scheduling systems with areas for improvement in fairness, workload sensitivity, and rest provision to sustain performance and quality care.

Table 2 Nurse Absenteeism

| Dimensions | Mean score | SD | Interpretation |
|---|---|---|---|
| Frequency | | | |
| 1. Shifts missed in the past 3 months_ | 0.41 | 0.685 | Never |
| 2. Absences without notice in past 6 months | 0.44 | 0.730 | Never |
| 3. How often are you late for duty? | 2.34 | 0.713 | Rarely |
| Factor mean | 1.07 | 0.501 | Very low absenteeism |
| Causes | | | |
| 4. Absent due to physical illness. | 2.49 | 1.123 | Rarely |
| 5. Absent due to emotional exhaustion. | 2.24 | 1.140 | Rarely |
| 6. Family responsibilities cause absence. | 2.49 | 1.105 | Rarely |
| 7. Poor scheduling contributes to absence. | 3.01 | 1.521 | Rarely |
| 8. I skip work when I feel overworked. | 2.27 | 1.258 | Rarely |
| Factor mean | 2.50 | 0.993 | Low absenteeism |

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

| | | | |
|---|---|---|---|
| Attitude Toward Attendance | | | |
| 9. I am committed to attending every shift. | 4.45 | 1.026 | Always |
| 10. I avoid absences even when slightly unwell. | 4.05 | 1.065 | Often |
| 11. Absences affect teamwork negatively. | 4.36 | 1.050 | Always |
| 12. My supervisor values good attendance. | 4.50 | 0.943 | Always |
| 13. The hospital has fair attendance policies. | 4.47 | 0.993 | Always |
| Factor mean | 4.37 | 0.889 | Very positive attitude |
| Grand mean | 2.64 | 0.456 | Moderate |

Note: *n-205*.

Legend: Frequency and causes 4.21 to 5.00 as very high absenteeism (always), 3.41 to 4.20 as high absenteeism (often), 2.61 to 3.40 as moderate absenteeism (sometimes), 1.81 to 2.60 as low absenteeism (rarely), and 1.00 to 1.80 as very low absenteeism (never). Attitude toward attendance 4.21 to 5.00 as very positive attitude towards absenteeism (always), 3.41 to 4.20 as positive attitude towards absenteeism (often), 2.61 to 3.40 as neural attitude towards absenteeism (sometimes), 1.81 to 2.60 as negative attitude towards absenteeism low absenteeism (rarely), and 1.00 to 1.80 as very low negative attitude towards absenteeism (never)

The findings indicate very low absenteeism frequency, suggesting that nurses consistently report for duty and maintain high workforce reliability essential for continuity of care and stable hospital operations, with strong attendance behavior reflecting professional accountability and teamwork, particularly in settings with limited staffing, and supported by evidence that low absenteeism prevents understaffing and ensures service continuity (Dall'Ora et al., 2025; Mamatsharaga et al., 2025); the causes of absenteeism were rated low, implying that factors such as illness, emotional strain, and workload only occasionally lead to absence, although this may reflect endurance rather than absence of strain, as nurses may still report for duty despite fatigue or stress, aligning with literature on presenteeism and ongoing occupational pressures (Gerlach et al., 2024; Chang et al., 2025; Gou et al., 2024). Additionally, a very positive attitude toward attendance indicates that nurses value regular duty, recognize its impact on teamwork, and perceive support from supervisors and policies, reflecting a strong organizational culture of accountability and commitment, with evidence showing that supportive leadership and positive work environments reinforce attendance behavior and engagement (Mamatsharaga et al., 2025; Almabadi et al., 2025).

Table 3 Nurse Productivity

| Dimensions | Mean score | SD | Interpretation |
|---|---|---|---|
| Task Efficiency | | | |
| 1. I complete nursing tasks on time. | 4.44 | 0.644 | Always |
| 2. I prioritize tasks effectively. | 4.49 | 0.623 | Always |
| 3. I minimize idle time. | 4.37 | 0.685 | Always |
| 4. I perform procedures efficiently. | 4.47 | 0.631 | Always |
| 5. I document patient care promptly. | 4.48 | 0.631 | Always |
| Factor mean | 4.45 | 0.580 | Highly productive |
| Quality of Work | | | |
| 6. I maintain high standards of care. | 4.52 | 0.646 | Always |
| 7. I ensure accuracy in medication administration. | 4.53 | 0.631 | Always |
| 8. I provide comprehensive care. | 4.50 | 0.669 | Always |
| 9. I maintain cleanliness in my area. | 4.49 | 0.669 | Always |
| 10. I deliver quality care under pressure. | 4.53 | 0.631 | Always |
| Factor mean | 4.51 | 0.588 | Highly productive |
| Initiative and Responsibility | | | |
| 11. I take additional responsibilities when needed. | 4.45 | 0.589 | Always |
| 12. I show initiative in solving problems. | 4.45 | 0.644 | Always |
| 13. I complete tasks independently. | 4.42 | 0.649 | Always |
| 14. I follow up patient care after handover. | 4.48 | 0.639 | Always |

| | | | |
|---|---|---|---|
| 15. I adhere strictly to hospital policies. | 4.46 | 0.637 | Always |
| Factor mean | 4.45 | 0.554 | Highly productive |
| Interpersonal Performance | | | |
| 16. I communicate well with colleagues. | 4.47 | 0.653 | Always |
| 17. I contribute positively to teamwork. | 4.42 | 0.728 | Always |
| 18. I assist others during heavy workload. | 4.47 | 0.646 | Always |
| 19. I promote a positive work environment. | 4.45 | 0.667 | Always |
| 20. I communicate clearly with doctors and patients. | 4.50 | 0.631 | Always |
| Factor mean | 4.46 | 0.587 | Highly productive |
| Utilization of Resources | | | |
| 21. I manage my time efficiently. | 4.46 | 0.630 | Always |
| 22. I use supplies responsibly. | 4.48 | 0.631 | Always |
| 23. I avoid wastage of resources. | 4.45 | 0.629 | Always |
| 24. I ensure patient safety when using equipment. | 4.60 | 0.582 | Always |
| 25. I adjust well to workload demands. | 4.48 | 0.607 | Always |
| Factor mean | 4.50 | 0.544 | Highly productive |
| Grand mean | 4.48 | 0.534 | Highly productive |

Note*: n-205*.

Legend: 4.21 to 5.00 as highly productive (always), 3.41 to 4.20 as productive (often), 2.61 to 3.40 as moderately productive (sometimes), 1.81 to 2.60 as low productivity (rarely), and 1.00 to 1.80 as very low productivity (never).

The findings in Table 3 indicate that the nurse productivity of the respondents was generally very high, indicating that nurses consistently performed their duties efficiently and effectively despite the demands of a government hospital, as reflected in timely completion of patient care, prompt response to physicians' orders, and management of multiple responsibilities, supported by literature that defines healthcare job performance as encompassing task, contextual, and adaptive behaviors (Krijgsheld et al., 2022). Across dimensions, task efficiency was very high, showing strong ability to organize and prioritize duties, while quality of work was also very high, indicating adherence to standards, safety protocols, and accurate care delivery even under pressure, consistent with evidence linking work conditions and psychological factors to care quality (Demir et al., 2025; Daba et al., 2024). Initiative and responsibility were likewise very high, reflecting proactive behavior and accountability, while interpersonal performance indicated effective communication and teamwork that support workflow and patient safety, aligned with findings that collaborative environments enhance performance (Lucas et al., 2025; Krijgsheld et al., 2022). Utilization of resources was also very high, demonstrating efficient management of time, equipment, and supplies, particularly in resource-limited settings, supported by studies highlighting the role of work organization and resources in productivity (Poormoosa et al., 2024). Overall, while these findings reflect a strong and capable workforce, they also suggest continuous adaptation to demanding conditions, emphasizing the need for management to balance performance with support systems such as proper scheduling, adequate rest, and workforce reinforcement to sustain productivity and well-being (Demir et al., 2025), and noting that results based on self-rating should be interpreted with caution due to possible social desirability bias.

Table 4 Relationship between Scheduling Management Practices and Nurse Productivity

| Variables | r value | *p* value | Decision | Interpretation |
|---|---|---|---|---|
| Scheduling Management Practices vs. Nurse Productivity | .432 | .000 | Reject Ho | Significant |

Legend: S Significant if *p* value is ≤ .05. Dependent Variable: Nurse Productivity. Pearson r interpretation: A value greater than .5 is strong (positive), between .3 and .5 is moderate (positive), between 0 and .3 is weak (positive), 0 is none, between 0 and –.3 is weak (negative), between –.3 and –.5 is moderate (negative), and less than –.5 is strong (negative).

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

Table 4 findings shows that a significant positive relationship was found between scheduling management practices and nurse productivity, indicating that better scheduling is associated with better work performance, with a moderate strength suggesting that while scheduling is an important factor, it is not the only influence, and that work performance is shaped not only by personal skill but also by how the work system is organized. This finding is supported by studies showing that scheduling affects fatigue, workflow, and performance, where poorly designed schedules reduce alertness and capacity, while well-managed systems improve efficiency and work quality (Booker et al., 2024; O'Connell et al., 2024; Kang et al., 2025). In practice, nurses perform better when schedules are clear, posted on time, and communicated early, allowing smoother endorsements, better workload anticipation, and fewer disruptions, whereas sudden changes and unclear assignments can reduce focus and pacing during shifts. The relationship is further explained through scheduling dimensions, where clear methods reduce uncertainty, fairness improves morale, flexibility reduces stress, workload balance prevents uneven burden, and rest periods support recovery, all of which contribute to productivity, supported by evidence linking fatigue and rostering to performance and wellbeing (Holton et al., 2024; Gifkins et al., 2024). For nursing management, the finding highlights that productivity should be viewed as an outcome influenced by scheduling systems, emphasizing the need for clear, fair, and supportive scheduling practices, regular policy review, and protection of rest periods, particularly in high-demand government hospitals. Overall, the result supports the inclusion of scheduling management practices as a key factor in nurse productivity, showing that productivity is connected to real workplace conditions and providing a practical basis for improving scheduling to sustain performance and quality patient care.

Table 5 Relationship between Absenteeism and Nurse Productivity

| Variables | r value | *p* value | Decision | Interpretation |
|---|---|---|---|---|
| Absenteeism vs. Nurse Productivity | .085 | .227 | Failed to reject Ho | Not significant |

Legend: Significant if *p* value is $\leq$ .05. Dependent Variable: Nurse Productivity. Pearson r interpretation: A value greater than .5 is strong (positive), between .3 and .5 is moderate (positive), between 0 and .3 is weak (positive), 0 is none, between 0 and –.3 is weak (negative), between –.3 and –.5 is moderate (negative), and less than –.5 is strong (negative).

In Table 5 finding shows that the relationship between absenteeism and nurse productivity was not significant, indicating that variations in attendance did not have a measurable effect on nurses' performance and suggesting only a very weak connection, where productivity is influenced more by factors such as work systems, teamwork, and individual behavior rather than absenteeism alone. This may be explained by the generally low level of absenteeism, where infrequent absences do not substantially disrupt workflow, and continuity of care is maintained through support systems such as floaters, relievers, and pull-out strategies, while nurses may also report for duty despite fatigue or minor illness, reflecting presenteeism that minimizes operational impact (Gerlach et al., 2024). Productivity is further sustained through teamwork and shared responsibility, where remaining staff redistribute tasks, assist each other, and prioritize essential care, consistent with literature emphasizing that healthcare performance is influenced by team dynamics and organizational support (Krijgsheld et al., 2022). The absence of a significant relationship also suggests that nurses have developed adaptive behaviors, allowing them to reorganize priorities, adjust pace, and maintain output in high-demand environments, supported by evidence on adaptive performance in healthcare (Krijgsheld et al., 2022; Daba et al., 2024). From a management perspective, while absenteeism may not directly predict productivity, it remains important as repeated or prolonged absences can increase workload, fatigue, and burnout, potentially affecting care quality over time (Dall'Ora et al., 2025). Overall, the findings highlight that nurse productivity is sustained through commitment, teamwork, and adaptability rather than absenteeism, emphasizing the need for management to consider broader organizational factors in supporting consistent and high-quality performance.

## CONCLUSION AND RECOMMENDATIONS

**Conclusion.** In conclusion, the findings of the study indicate that nurse productivity is sustained within a work environment where scheduling management practices are organized, responsive, and supportive of nurses' daily responsibilities. Effective scheduling contributes to a stable workflow, allowing nurses to perform efficiently while maintaining quality patient care. Although absenteeism was minimal and did not directly influence

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

productivity, maintaining good attendance remains essential in ensuring continuity of care and preventing additional workload strain among staff. These results highlight that improving scheduling systems is a practical and relevant strategy in strengthening nurse performance and supporting a more balanced and sustainable work environment in DOH-retained hospital.

**Recommendations.** Based on the findings, the recommendations emphasize the implementation of a Nurse Scheduling and Attendance–Productivity Enhancement Plan to strengthen scheduling practices in terms of fairness, workload balance, and rest periods to sustain high nurse productivity and a stable work environment, with nursing administrators encouraged to regularly review scheduling systems, ensure timely posting of duty rosters, promote flexibility while maintaining adequate staffing, and continuously monitor attendance with early support for fatigue or workload strain; the findings may also be utilized in nursing education as reference material for workforce management, scheduling practices, and nurse productivity, as well as in teaching research design, data analysis, and ethical considerations. In terms of policy, hospital administrators are encouraged to develop or strengthen guidelines on fair shift distribution, workload balancing, adequate rest, flexible scheduling, and attendance monitoring supported by wellness programs addressing fatigue and stress to ensure sustainable productivity and quality care, while for nursing research, the study may be published and presented in conferences, with future research recommended on scheduling practices and productivity using mixed methods, the role of fatigue, burnout, or presenteeism despite low absenteeism, and comparative studies between public and private hospitals.

**Roster Optimization and Absence Management**

**Enhancement Plan**

**Rationale**

Efficient nurse scheduling and regular attendance are essential in maintaining high productivity in hospital settings, particularly in DOH-retained hospitals where nurses provide continuous care despite high demand, limited staffing, and changing service needs. When scheduling practices are clear, fair, flexible, balanced, and supportive of rest, nurses are more likely to perform effectively, while regular attendance ensures continuity of care and prevents workload strain. The findings showed that scheduling practices were generally effective, with strengths in scheduling method and flexibility, but with areas for improvement in fairness, workload balance, and rest periods; nurse productivity was highly maintained across all dimensions, and absenteeism was low with a very positive attitude toward attendance. A significant relationship between scheduling management practices and productivity indicates that better scheduling supports better performance, while the non-significant relationship between absenteeism and productivity suggests that productivity remains high despite low absence but highlights the need to monitor fatigue, presenteeism, and hidden strain. Thus, the Nurse Scheduling and Attendance–Productivity Enhancement Plan is necessary to strengthen scheduling practices, sustain attendance, and support high nurse productivity.

**General Objective**

The main purpose of the Nurse Scheduling and Attendance–Productivity Enhancement Plan is to strengthen scheduling practices, sustain positive attendance behavior, and further enhance the productivity of nurses in a DOH-retained hospital.

**Specific Objectives**

Specifically, this enhancement plan aims to:

a. strengthen the effective scheduling management practices of nurses, particularly in the areas of fairness and transparency, workload balance, and rest periods;
b. sustain the highly effective scheduling management practices in terms of scheduling method and flexibility;
c. sustain the high level of nurse productivity across task efficiency, quality of work, initiative and responsibility, interpersonal performance, and utilization of resources; and
d. sustain the low level of absenteeism and the very positive attitude toward attendance among nurses.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume XI Issue V May 2026

| Area of Concern | Objective | Key Activities | Responsible | Time Frame | Success Indicators |
|---|---|---|---|---|---|
| Scheduling practices (fairness, workload, rest) | Strengthen scheduling management | Review and update scheduling policy; ensure fair shift distribution; monitor workload and rest periods; establish feedback system | Nurse Managers, Chief Nurse, HR | 3rd Quarter onwards | Improved fairness, better workload balance, fewer scheduling complaints |
| Scheduling method and flexibility | Sustain effective scheduling system | Advance posting of schedules; clear communication of changes; standardized approval of shift changes; maintain reliever system | Nurse Managers, Supervisors | 3rd Quarter onwards | Timely schedules; fewer last-minute conflicts; positive staff feedback |
| Nurse productivity | Sustain high productivity | Training on time management and quality care; mentoring and coaching; regular monitoring and recognition | Nurse Managers, Training Unit | 3rd Quarter onwards | Sustained high productivity; improved workflow; better documentation |
| Absenteeism and attendance | Maintain low absenteeism and positive attitude | Wellness programs; attendance monitoring; early support for fatigue/stress; recognition of good attendance | Nurse Managers, HR, Wellness Team | 3rd Quarter onwards | Low absenteeism maintained; improved attendance commitment |
| Scheduling – productivity relationship | Use scheduling to support performance | Integrate scheduling review in management meetings; align staffing with workload; use data for decisions | Chief Nurse, Administrators | 3rd Quarter onwards | Improved scheduling decisions; sustained productivity |
| Hidden fatigue/presenteeism | Prevent burnout despite low absenteeism | Monitor fatigue; conduct wellness check-ins; promote supportive environment | Supervisors, Wellness Team | 3rd Quarter onwards | Reduced fatigue issues; sustained productivity without strain |

## REFERENCES

1. AbuAlRub, R. F., El-Jardali, F., Jamal, D., & Al-Rub, N. A. (2022). Exploring the relationship between structural empowerment, job satisfaction, and turnover intention among nurses. Journal of Nursing Management, 30(1), 160–169. https://doi.org/10.1111/jonm.13495
2. Almabadi, A. A., Alanazi, F. K., Alharbi, R. K., Alenezi, N. K., Almutairi, F. A., & Alshammari, S. A. (2025). Nurse managers' perceptions about supportive work environments in general hospitals. BioMedicalCenter Nursing, 24, Article number as published.

3. Alotaibi, S. M., Amin, M., & Winterton, J. (2020). Does empowerment influence nurses' job satisfaction and commitment? A structural empowerment perspective. Journal of Nursing Management, 28(7), 1692–1701. https://doi.org/10.1111/jonm.13104
4. Aungsuroch, Y., Gunawan, J., Fisher, M. L., & Chen, Y. (2024). Factors influencing nurse work engagement in hospital settings: A systematic review. Belitung Nursing Journal. (Available in PubMed Central).
5. Bae, S.-H., Brewer, C. S., Kovner, C. T., & Slattery, M. J. (2024). Mandatory overtime and nurse outcomes: A review of workforce risks linked with work hours and staffing pressure. International Journal of Public Health, 69, 1607068. https://doi.org/10.3389/ijph.2024.1607068
6. Booker, L. A., Mills, J., Bish, M., Spong, J., Deacon-Crouch, M., & Skinner, T. C. (2024). Nurse rostering: Understanding the current shift work scheduling processes, benefits, limitations, and potential fatigue risks. BioMed Center Nursing, 23, 295. https://doi.org/10.1186/s12912-024-01949-2
7. Booker, L. A., Sletten, T. L., Alvaro, P. K., Barnes, M., Collins, A., Chai-Coetzer, C. L., & Rajaratnam, S. M. W. (2023). Exploring the associations between shift work scheduling practices and nurse absenteeism and productivity. Journal of Nursing Management, 31(2), 456–464. https://doi.org/10.1111/jonm.13785
8. Breevaart, K., & Zacher, H. (2021). Daily goal progress, work engagement, and task performance. Journal of Occupational and Organizational Psychology, 94(3), 558–579. https://doi.org/10.1111/joop.12343
9. Chang, H. Y., Lin, C. C., Chen, H. Y., & colleagues. (2025). Impact of nurses' peak workload and time pressure on work exhaustion and turnover intention. BMC Nursing, 24, Article number as published.
10. Cho, S. H., Lee, J. Y., Mark, B. A., & Yun, S. C. (2020). Turnover of new graduate nurses in their first job using survival analysis. Journal of Nursing Scholarship, 52(2), 142–151. https://doi.org/10.1111/jnu.12538
11. Daba, L., Demelash, H., Yitayew, T., & Wagnew, F. (2024). Job performance and associated factors among nurses working in adult emergency departments. BMC Nursing, 23, 648. https://doi.org/10.1186/s12912-024-01979-w
12. Dall'Ora, C., Ball, J., Redfern, O., & Griffiths, P. (2022). Characteristics of shift work and their impact on employee performance and wellbeing: A systematic review. International Journal of Nursing Studies, 126, 104099. https://doi.org/10.1016/j.ijnurstu.2021.104099
13. Dall'Ora, C., Ball, J., Redfern, O., Recio-Saucedo, A., & Griffiths, P. (2025). Nurse staffing configurations and nurse absence due to sickness. JAMA Network Open, 8(4), e255866. doi:10.1001/jamanetworkopen.2025.5866
14. Demir, Y., Dağ, E., Nal, B., Nal, M., & Bektaş, G. (2025). Determinants of nurses' job performance: The interaction of perceived occupational stress, psychological safety, and digital fatigue. BMC Nursing, 24, 1443. doi:10.1186/s12912-025-04055-z
15. Djupedal, I. L. R., Bjorvatn, B., Waage, S., Pallesen, S., Moen, B. E., Magerøy, N., Thun, E., Harris, A., Grimsrud, I. D., & Flo, E. (2025). Shift schedule with fewer short daily rest periods and sickness-related absence of health care workers: A cluster randomized clinical trial. JAMA Network Open, 8(9), e2541544. https://doi.org/10.1001/jamanetworkopen.2025.41544
16. Epstein, M., Härenstam, A., Ulmi, M., & Richter, A. (2023). Managing sustainable working hours within participatory scheduling in healthcare. BioMed Center Health Services Research. https://doi.org/10.1186/s12913-023-09177-0
17. Gerlach, M., Renggli, F. J., Bieri, J. S., Golz, C., & Sariyar, M. (2025). Exploring nurse perspectives on AI-based shift scheduling for fairness, transparency, and work-life balance. BioMed Center Nursing, 24, (Article number as assigned). https://doi.org/10.1186/s12912-025-03808-0
18. Gerlach, M., Schmid, T., & colleagues. (2024). Presenteeism among nurses: An integrative review. International Emergency Nursing, 77, 101605.
19. Gifkins, J., Johnston, A., Loudoun, R., & Troth, A. (2024). A mixed method approach to how shiftworking emergency nurses perceive and manage fatigue and sleep. Collegian, 31(3), 248–256. https://doi.org/10.1016/j.colegn.2024.04.002
20. Gou, J., Zhang, Y., & colleagues. (2024). Acute fatigue, alertness, and job demands among nurses: A cross-sectional survey study based on the job demands–resources model. BMC Nursing, 23, Article number as published.

21. Gray, S., Morris, M. R., & Bowie, D. (2024). The power of self-scheduling: Frontline nurses' insights and perspectives to achieve staffing flexibility. Nurse Leader, 22(4), 438–444. https://doi.org/10.1016/j.mnl.2023.11.012
22. Holton, S., Rasmussen, B., Bayes, S., Woods, C., Rasmussen, P., Ezer, P., & Bayliss-Pratt, L. (2024). Developing nurse and midwife centred rostering principles using a Delphi study. BMC Nursing, 23, 732. https://doi.org/10.1186/s12912-024-02522-7
23. Hussein, A. H. M., Abou Hashish, E. A., & Younes, B. M. (2024). The relationship between nurses' psychological well-being and their work productivity loss: A descriptive correlational study. SAGE Open Nursing, 10, 23779608241285400. doi:10.1177/23779608241285400
24. Inchingolo, A. D., et al. (2025). Guidelines for reducing the adverse effects of shift work on nursing staff. Healthcare, 13(17), 2148. https://doi.org/10.3390/healthcare13172148
25. Inchingolo, A. D., Inchingolo, A. M., Fatone, M. C., Ferrante, L., Casamassima, L., Trilli, I., Inchingolo, F., Palermo, A., Marinelli, G., & Dipalma, G. (2025). Guidelines for reducing the adverse effects of shift work on nursing staff: A systematic review. Healthcare, 13(17), 2148. https://doi.org/10.3390/healthcare13172148
26. Kang, H. W., Kim, S. H., Lee, J. H., & Park, Y. J. (2025). Shift nurses' work quality and job satisfaction after implementing a hospital nursing AI scheduling system. BioMed Center Nursing, 24, (article number as published). https://doi.org/10.1186/s12912-025-03808-0
27. Kiptulon, E. K., et al. (2024). Transforming nursing work environments: The impact of organizational culture on work-related stress among nurses: A systematic review. BioMed Center Health Services Research. doi:10.1186/s12913-024-12003-x
28. Krijgsheld, M., Tummers, L., & Groenleer, M. (2022). Job performance in healthcare: A systematic review. BioMed Center Health Services Research. doi:10.1186/s12913-021-07357-5
29. Lesener, T., Gusy, B., & Wolter, C. (2020). The job demands–resources model: A meta-analytic review. Work & Stress, 34(1), 1–25. https://doi.org/10.1080/02678373.2019.1687942
30. Lucas, P. R. B., Jesus, É. H., Almeida, S. A., et al. (2025). The nursing practice environment and job satisfaction, turnover, and burnout in primary healthcare. Healthcare, 13(16), 1784. https://doi.org/10.3390/healthcare13161784
31. Mamatsharaga, T., Mutshatshi, T. E., & Ramavhoya, T. I. (2025). Nurse managers' strategies to reduce absenteeism amongst nurses at selected public hospitals in Limpopo Province, South Africa. The Open Public Health Journal, 18, e18749445378792. https://doi.org/10.2174/0118749445378792250219062822
32. Martins, T., Musy, S. N., & Simon, M. (2025). Nurse shift patterns, staffing and their association with perceived workload: Sequence analysis of multicentre data. International Journal of Nursing Studies Advances, 9, 100420. https://doi.org/10.1016/j.ijnsa.2025.100420
33. O'Connell, M., (et al.). (2024). The impact of electronic and self-rostering systems on healthcare organisations and healthcare workers: A mixed-method systematic review. Journal of Clinical Nursing. https://doi.org/10.1111/jocn.17114
34. Poormoosa, Y., Amerzadeh, M., & Alizadeh, A. (2024). The effect of circadian rhythm on the productivity of nurses with the mediating role of quality of work life. BMC Nursing, 23, 74. https://doi.org/10.1186/s12912-024-01746-x
35. Raziq, A., Borini, F. M., Malik, O. F., Ahmad, M., & Shabaz, M. (2020). Leadership styles, goal clarity, and employee performance. International Journal of Productivity and Performance Management, 69(6), 1083–1103. https://doi.org/10.1108/IJPPM-01-2019-002
36. Renggli, F. J., Gerlach, M., Bieri, J. S., Golz, C., & Sariyar, M. (2025). Integrating nurse preferences into AI-based scheduling systems: Qualitative study. JMIR Formative Research, 9, e67747. https://doi.org/10.2196/67747
37. Schaufeli, W. B., & Taris, T. W. (2021). A critical review of the job demands–resources model: Implications for improving work and health. Journal of Occupational Health Psychology, 26(2), 71–89. https://doi.org/10.1037/ocp0000284
38. Scott-Marshall, H. K., Bolghanabad, A. M., & Smith, P. M. (2024). Safe limits on work hours for the nursing profession: A rapid review. Frontiers in Global Women's Health, 5, 1455422. https://doi.org/10.3389/fgwh.2024.1455422

39. Shdaifat, E. A. (2023). Absenteeism among nurses: Costs, working conditions, and related factors. International Journal of Productivity and Quality Management. doi:10.1504/IJPQM.2023.130186
40. Stimpfel, A. W., & Aiken, L. H. (2021). Hospital staff nurse shift length associated with safety and quality of care. Journal of Nursing Care Quality, 36(1), 19–25. https://doi.org/10.1097/NCQ.0000000000000502
41. Van den Heuvel, M., Demerouti, E., & Peeters, M. C. W. (2020). The Job Demands–Resources Model and sickness absenteeism among healthcare employees: A longitudinal study. Journal of Occupational Health Psychology, 25(6), 451–463. https://doi.org/10.1037/ocp0000190
42. Van Kraaij, J., (et al.). (2024). A qualitative study on nursing work in complex organizations. PLOS ONE. (Details as published). https://doi.org/10.1371/journal.pone.(as assigned)
43. Wynendaele, H., Gemmel, P., Pattyn, E., Myny, D., & Trybou, J. (2021). Systematic review: What is the impact of self-scheduling on the patient, nurse and organization? Journal of Advanced Nursing, 77(1), 47–82. doi:10.1111/jan.14579
44. Yaghoubi, M., Salimi, M., Meskarpour-Amiri, M., & Rad, E. H. (2021). Systematic review of productivity loss among healthcare workers due to COVID-19. The International Journal of Health Planning and Management, 36(6), 2060–2074. doi:10.1002/hpm.3351