

THE RELATIONSHIP BETWEEN WORK SHIFT SYSTEM AND WORK STRESS ON EMPLOYEE PERFORMANCE IN INDONESIA: A LITERATURE REVIEW

Hubungan Sistem Shift Kerja Dan Stres Kerja Terhadap Kinerja Karyawan di Indonesia: Tinjauan Literatur

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ABSTRACT

Background: The implementation of shift work systems across various industrial sectors in Indonesia has increased to support 24-hour operations. However, shift work may increase work-related stress and negatively affect employee performance. Previous studies have reported varied findings depending on sector and job characteristics. **Purpose:** This study aims to analyze the relationship between shift work systems and work stress on employee performance in Indonesia. **Methods:** This study employed a systematic literature review method, with data sources obtained from Google Scholar, Garuda, ResearchGate, and Semantic Scholar. A total of six articles were selected based on predetermined inclusion and exclusion criteria. **Results:** Shift work systems and work stress are associated with employee performance, both partially and simultaneously. Work stress has a direct relationship with performance, while shift work is indirectly related through increased stress. In the manufacturing sector, work stress is more dominant, whereas in the healthcare sector, the relationship of shift work is stronger. In the modern retail sector, the relationship of both variables varies depending on work management practices. **Conclusion:** In general, shift work systems are associated with employee performance through increased work stress. Therefore, effective shift system management and the implementation of stress management are important factors in maintaining employee performance.

Keywords: shift work, work stress, employee performance

ABSTRAK

Latar Belakang: Penerapan sistem shift kerja di berbagai sektor industri Indonesia semakin meningkat untuk mendukung operasional 24 jam. Namun, berpotensi meningkatkan stres kerja yang berdampak pada kinerja karyawan. Hasil penelitian sebelumnya menunjukkan bahwa hubungan tersebut bervariasi antar sektor industri dan karakteristik pekerjaan. **Tujuan:** untuk menganalisis hubungan sistem shift kerja dan stres kerja terhadap kinerja karyawan di Indonesia. **Metode:** Menggunakan metode tinjauan literatur sistematis, dengan sumber data dari Google Scholar, Garuda, ResearchGate, dan Semantic Scholar. Sebanyak 6 artikel dipilih berdasarkan kriteria inklusi dan eksklusi yang telah ditentukan. **Hasil:** Sistem shift kerja dan stres kerja berhubungan dengan kinerja karyawan, baik secara parsial maupun simultan. Stres kerja terbukti berhubungan langsung terhadap kinerja. Sementara itu, hubungan shift kerja terjadi secara tidak langsung melalui peningkatan stres. Pada sektor manufaktur, stres kerja lebih dominan, sedangkan pada sektor kesehatan hubungan shift kerja lebih kuat. Pada sektor ritel modern, hubungan keduanya bervariasi tergantung pengelolaan kerja. **Kesimpulan:** Secara umum, sistem shift kerja berhubungan dengan kinerja karyawan melalui peningkatan stres kerja. Oleh karena itu, pengelolaan sistem shift dan penerapan manajemen stres menjadi faktor penting dalam menjaga kinerja karyawan.

Kata Kunci: shift kerja, stres kerja, kinerja karyawan

INTRODUCTION

Industrial development in Indonesia has shown significant growth over the past few decades (Rohmah *et al.*, 2024). This is marked by the emergence of numerous national and multinational companies operating in various sectors such as manufacturing, healthcare, banking, transportation, services, and energy. As demands for productivity and continuous, 24-hour service increase, traditional work patterns with regular hours are being modified. Companies have adopted shift work systems to maintain uninterrupted production and customer service (Mei Yulianti *et al.*, 2024). This means that working hours are no longer tied to a fixed morning to evening schedule but are instead divided into several work periods according to the company's operational needs.

According to Reinganum *et al.* (2024), a shift work system is a work schedule that divides work hours into two or more groups thus employees work at different hours. Three commonly recognized shift patterns are morning, afternoon, and night shifts. While the shift system is considered effective in maintaining productivity, this work pattern can also have consequences for workers' health and well-being (Silva & Costa, 2023). Boivin *et al.* (2022) explained that shift work that is inconsistent with the body's circadian rhythm can cause sleep disturbances, fatigue, decreased alertness, and even long-term physiological disorders. Night shifts, which conflict with a person's natural biological rhythm, are a major factor in the emergence of fatigue and decreased physical condition (Mul Fedele *et al.*, 2024). According to research conducted by Panghestu *et al.* (2024), shift work systems have been shown to significantly impact worker conditions, particularly in increasing work fatigue. Fatigue experienced by workers due to certain shift patterns has the potential to

reduce concentration and work ability, thus impacting employee performance.

On the other hand, psychological factors such as work stress are also a concern in employment studies. Kasaga & Athoillah (2025) defined work stress as a state of tension that affects a person's emotions, thought processes, and condition, which arises when job demands are out of balance with individual abilities. Factors causing work stress can stem from high workloads, target pressure, lack of control over work, inter-worker relationships, and an unsupportive work environment (Rahma & Yudia, 2025). Hidayat *et al.* (2025) added that unmanaged work stress can lead to decreased motivation, increased internal conflict, changes in work behavior, and even burnout. In line with research conducted by Sundry *et al.* (2024), work stress has been shown to have a negative correlation with employee performance, where the higher the stress level, the lower the employee's ability to work effectively and productively.

Based on this description, managing shift work systems and work stress is crucial, considering their impact not only on employee health but also on the sustainability of a company's productivity. Lumingkewas *et al.* (2025) stated that work-related health disorders, including fatigue and stress, contribute significantly to decreased productivity and an increased risk of workplace accidents. With the rapid development of industry in Indonesia, many of which operate continuously 24/7, the implementation of shift work systems has become increasingly widespread. However, managing occupational health aspects within these systems has not yet been fully prioritized (Permatasari *et al.*, 2022). This situation has the potential to cause long-term impacts, such as decreased employee performance, increased absenteeism and turnover, and even losses for companies (Hidayat *et al.*, 2025).

Although the issue of shift work systems and work stress has been widely researched, previous research has generally focused on discussions of shift work systems and work stress in Indonesia, generally isolated and limited to specific sectors or locations. The novelty of this study lies in its broader sample size, encompassing several employment sectors in Indonesia. Hence, this study aims to map various research findings regarding the relationship between shift work systems and work stress on employee performance and describe the most frequently encountered relationship patterns in the literature. The results of the review are expected to provide academic insight and serve as a reference for companies in designing healthier, more productive, and sustainable human resource management strategies.

METHOD

Literature Search Strategy

This research was designed using a literature review method. Articles were collected from four major databases: Google Scholar, Garuda, ResearchGate, and Semantic Scholar. The article selection process was conducted using inclusion and exclusion criteria to ensure the articles' suitability for the research objectives. Inclusion criteria included: (1) research conducted in Indonesia with workers/employees as research subjects; (2) using a quantitative approach; (3) analyzing the relationship between shift work systems and job stress and employee performance using a cross-sectional research design; (4)

not limited by the number of respondents; (5) published between 2020 and 2025; and (6) available in full-text and open access. Exclusion criteria included studies in the form of literature reviews, experimental studies, and research that did not use multiple linear regression analysis techniques.

Article searches were conducted using Indonesian keywords (shift work, job stress, employee performance) and English keywords (shift work, work stress, employee performance) in Google Scholar, Garuda, ResearchGate, and Semantic Scholar databases. The obtained articles were then selected based on their compliance with the PECO(S) criteria, namely: (1) Population: employees in Indonesia; (2) Exposure: shift work systems and/or job stress levels; (3) Comparison: no comparison group; (4) Outcome: employee performance; and (5) Study design: a quantitative approach with a cross-sectional research design.

The article screening and selection process was conducted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 method, which includes identification, title and abstract screening, full-text eligibility assessment, and article selection based on inclusion and exclusion criteria. Article selection was carried out consistently by researchers to minimize bias. Data extraction was carried out systematically and presented in a table containing the article title, author and year of publication, industry sector, research method, and research results. The following is a PRISMA 2020 flowchart.

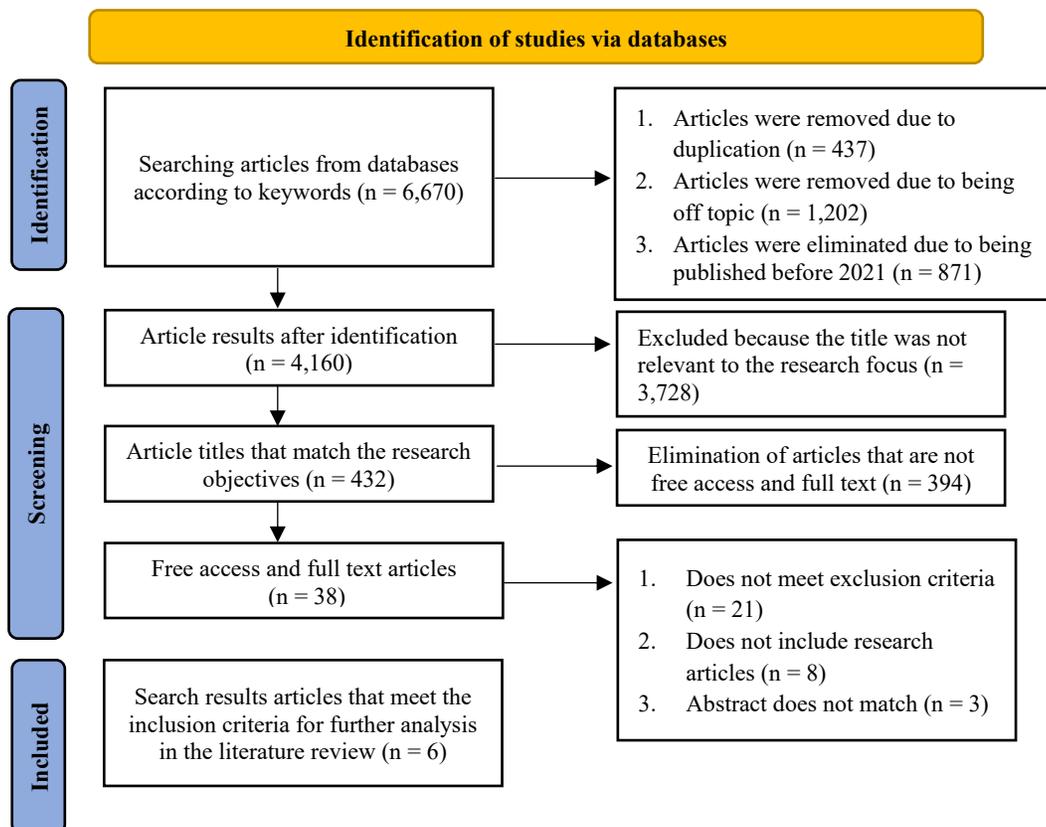


Figure 1. PRISMA Flow Diagram

Following the elimination of articles that were duplicated, irrelevant to the subject, or published prior to 2020, a total of 4,160 articles were retained for further analysis. Following a thorough examination of the titles, it was determined that 432 articles were relevant to the subject matter. However, it was noted that 394 of these articles were not available for full text retrieval without charge. Following the application of the exclusion criteria, which were designed to identify articles that were incompatible with

PECO(S), a total of six articles were deemed suitable for inclusion in the literature review matrix. This matrix examined the relationship between shift work systems and work stress on employee performance in Indonesia.

RESULT

Based on the search results, six articles were obtained, as shown in Table 1 below.

Table 1. Selected Article Results

No	Title, Author, and Year of Publication	Industrial Sector	Research Method	Research Results
1	The Effect of Shift Work Systems and Work Stress on Employee Performance (A Study at PT. Albasi Priangan Lestari	Manufacturing sector (Wood processing)	Research design: Cross-sectional Sample: 96 respondents Measurement method: Variables in the study were measured using a Likert scale questionnaire. However, the article does not explicitly mention the theoretical basis or the name	Research at PT Albasi Priangan Lestari shows that work shifts and work stress have a positive relationship with employee performance, meaning that an increase in both is followed by an increase in performance.

Continuation of Table 1. Selected Article Results

No	Title, Author, and Year of Publication	Industrial Sector	Research Method	Research Results
	Banjar) (Nafira <i>et al.</i> , 2022)		of the standard instrument used. Work stress was assessed based on perceptions of work pressure, work shifts based on work hours and rotating work patterns, while employee performance was assessed based on perceptions of work quality and results.	However, the strength of the relationship is very low, with a correlation coefficient of 0.020.
2	The Effect of Stress and Work Shifts on Nurse Performance at Masohi Regional General Hospital, Central Maluku Regency (Sabani <i>et al.</i> , 2024)	Healthcare sector	Research design: Cross-sectional Sample: 32 respondents Measurement method using a Likert scale questionnaire with indicators: 1. Work Stress: assessing work pressure, workload, and physical and mental fatigue of nurses. 2. Work Shifts: shift work patterns (morning, afternoon, night), work duration, and their impact on nurses' conditions. 3. Employee Performance: assessing task performance, procedure compliance, punctuality, and the quality of nurses' services.	Work shifts and work stress have a positive correlation with employee performance, at 0.572 and 0.050, respectively. This means that an increase in work shifts and work stress is followed by an increase in employee performance. Work shifts have a more dominant relationship with employee performance.
3	The Effect of Shift Work Systems and Work Stress on Employee Performance at PT. Petrokimia Gresik Unit SA IIIB (Resdiana & Pratiwi, 2022)	Manufacturing sector	Research design: Cross sectional Sample: 80 respondents Measurement method using a Likert scale questionnaire with indicators: 1. Work stress: the level of pressure and workload of employees based on the theory by (Anoraga, 2014) 2. Work shifts: work schedule and rotation (Kroll, 2010). 3. Employee performance: the quality and results of employees' work.	Work shifts and work stress have a positive correlation with employee performance, at 0.255 and 0.117 respectively, which means that an increase in work shifts and work stress is followed by an increase in employee performance. Work shifts have a stronger correlation with employee performance.
4	The Effect of Work Shifts and Work Stress on the Performance of Alfamidi Employees in Palopo City (Hadija <i>et al.</i> , 2023)	Modern retail trade sector (minimarkets)	Research design: Cross sectional Sample: 33 respondents Measurement method using a Likert scale questionnaire with indicators: 1. Work stress: assessing the pressure, workload, and tension felt by employees. 2. Work shifts: assessing work hour arrangements and shift rotation patterns. 3. Employee performance: quality, quantity, and timeliness of work.	Work shifts and work stress have a positive correlation with employee performance. The magnitude of the correlation shows that work stress (0.259) has a stronger correlation than work shifts (0.183). However, both have a low correlation with employee performance.
5	The Influence of Work Shifts and Work Stress on Employee Performance at The Alfamart Kotabumi Branch, North Lampung (Santika <i>et al.</i> , 2021)	Modern retail trade sector (minimarkets)	Research design: Cross sectional Sample: 15 respondents Measurement method: Work stress, work shifts, and employee performance were measured using a Likert scale questionnaire, in which work shifts were assessed based on work schedule and rotation, work stress was assessed based on	The relationship between shift work and work stress with employee performance is negative, with coefficients of -0.274 and -0.565, respectively. This indicates that an increase in shift work and work stress is followed by a decline in

Continuation of Table 1. Selected Article Results

No	Title, Author, and Year of Publication	Industrial Sector	Research Method	Research Results
			perceived pressure and workload, and employee performance was assessed based on perceptions of work quality and results.	employee performance, with work stress having a more dominant negative effect than shift work.
6	The Effect of Work Shifts and Work Stress on Employee Performance Improvement at CV. Media One Mart Group in Makassar (Ernawati <i>et al.</i> , 2023)	Trade/retail industry sector	<p>Research design: Cross-sectional Sample: 80 respondents Measurement method using a Likert scale questionnaire with indicators:</p> <ol style="list-style-type: none"> 1. Work Shift: division of working hours and shift rotation 2. Work Stress: workload and work pressure compiled based on the theory proposed by (Vanchapo, 2020) 3. Employee Performance: quality, quantity, and timeliness. 	<ol style="list-style-type: none"> a. Work shifts have a positive correlation with employee performance of 0.286, which means that the more effective the management of work shifts, the more employee performance tends to increase. b. Work stress has a positive correlation with employee performance of 0.438, which means that an increase in work stress is followed by an increase in employee performance. <p>These findings indicate that the respondents' stress levels were in the functional stress (eustress) category, which is motivating and thus encourages improved performance.</p>

DISCUSSION

The results of the Systematic Literature Review (SLR) table covering six journals demonstrate that all studies employed a cross-sectional research design, utilising multiple linear regression analysis techniques and Likert scale questionnaires to measure the variables of work shifts, work stress, and employee performance. The present series of studies was conducted in a number of different industrial sectors, namely manufacturing, health services and modern retail trade. The sample sizes for these studies varied between 15 and 96 respondents.

The results of the study demonstrate a correlation between work shifts and work stress on employee performance. The majority of studies have identified a positive correlation, indicating that an escalation in the implementation of work shifts and work stress at a certain level is often accompanied by an enhancement in employee

performance. This phenomenon can be attributed to the positive correlation between a well-organised shift system and a reasonable level of work stress (eustress), which has been demonstrated to enhance motivation and work productivity. Nevertheless, the correlation observed in certain studies is comparatively negligible, suggesting that employee performance is not solely determined by shift work and occupational stress, but also by extraneous factors not encompassed within the parameters of the study.

Conversely, numerous studies have demonstrated a negative correlation between work shifts and work stress with employee performance. The findings indicate that in circumstances where work stress is high (distress) and work shift arrangements are not optimal, employee performance tends to decline. A comprehensive review of the extant literature indicates a correlation

between work shifts and work stress on the one hand, and employee performance on the other. This correlation is evidenced in a range of studies, with results showing either a partial or simultaneous relationship. Nevertheless, the direction and magnitude of the relationship may be subject to variation depending on the characteristics of the industry sector and the working conditions of each employee.

The distinction in the direction and magnitude of these relationships becomes more evident when viewed through the lens of the characteristics inherent to each industrial sector. In the context of large-scale manufacturing sectors, such as PT. As asserted by Resdiana and Pratiwi (2022), there is a significant and simultaneous relationship between work shifts and work stress on employee performance at Petrokimia Gresik. However, the findings of this study suggest that work stress is more closely associated with work shifts than with work hours. This condition suggests that elevated work demands, uninterrupted production processes, and considerable work risks engender elevated levels of physical and psychological pressure, which in turn has a detrimental effect on employee performance. Conversely, in certain industrial companies such as PT. Albasi Priangan Lestari found no significant correlation between work shifts and employee performance (Nafira *et al.*, 2022). The present findings indicate that, in certain industrial sectors, the employment of a shift work system is not directly associated with enhanced performance. Rather, it has been observed that the implementation of such systems can serve as a catalyst for the escalation of work-related stress. This, in turn, has been demonstrated to engender a decline in the performance of employees.

In addition to the manufacturing sector, variations in findings were also observed in the healthcare sector, which is characterised by different job characteristics.

Research by Sabani *et al.* (2024) indicates that the most significant correlation exists between work shifts and nurse performance, while work stress demonstrates an absence of a direct relationship. This is attributable to the inherent characteristics of the nursing profession, which is characterised by a high degree of physical exertion and constant vigilance. Night shifts and long work hours led to physical exhaustion, affecting work accuracy and speed. Therefore, the effect of those two directly affect health condition. (Moreira & de Lucca, 2024).

Meanwhile, in the modern retail sector, there are Alfamidi, Alfamart, and CV. Media One Mart Group. These three companies are minimarket or convenience store chains that operate with a self-service system, serving the public's daily needs such as food, beverages, and household products. This modern retail business model generally implements long operating hours, even up to 24 hours, thus utilizing a shift work system to ensure continuous service. Research results show mixed findings. Research at Alfamart Kotabumi found that work shifts and job stress have a negative and significant relationship to performance, with a contribution of 63.5%. This means that the higher the stress and the less effective the shift management, the more likely employee performance is to decline (Santika *et al.*, 2021). Conversely, research at Alfamidi Palopo showed that work shifts and job stress have a positive relationship with employee performance. Work stress has a greater relationship (0.259) than work shifts (0.183) (Hadija *et al.*, 2023). Meanwhile, research at CV. Media One Mart Group demonstrated that effective shift management and work stress improve employee performance (Ernawati *et al.*, 2023). These findings confirm that the correlation between work shift and work stress in the retail sector is contextual, depending on how both are managed within the organization.

Overall, these findings aligned with previous studies show that the relationship among work shift, job stress, and employee performance is complex and inconsistent. Differences in work contexts, human resource management systems, and company operational conditions lead to varying directions and magnitudes of relationships across studies. One study supporting these findings is the study by Wirawan & Samsudin (2025), which showed that work shift systems significantly correlate with employee performance, both partially and simultaneously. These results indicate that appropriate and structured work schedules can contribute to increased employee productivity. This finding is reinforced by research by Gu *et al.* (2023) which states that workers with shift systems, especially irregular ones, tend to experience higher levels of burnout and stress, which can ultimately impact performance.

On the other hand, research related to work stress shows varying findings. Pangabean *et al.* (2024) found that work stress was not significantly related to employee performance, while workload actually had a more dominant negative impact. This supports several studies in this SLR that show that work stress is not always the main factor related to performance. However, research by Ardista & Novialumi (2023) shows that work stress can have a positive and significant correlation with performance when it is at an optimal level, indicating that stress within certain limits can actually improve employee performance. Conversely, a study by Sisviangga (2025) found that work stress has a negative but insignificant relationship with performance. Thus, it can be concluded that the relationship between work stress and employee performance is largely determined by stress levels, job characteristics, and the organizational context in which the research is conducted.

These findings are also in line with work psychology theory, particularly the Job Demands–Resources (JD-R) Model (Bakker & Demerouti, 2007), which explains that work demands such as shift work and high workloads can increase stress and decrease performance if not balanced with adequate work support. In this case, job stress acts as an intermediary linking working conditions with employee performance. The results of this study indicate that companies need to develop a more ergonomic and fair work shift system, as well as pay attention to employee rest periods. Furthermore, implementing stress management programs and increasing organizational support are also important to reduce the negative impacts of stress and maintain optimal employee performance.

The strength of this study is the use of the Systematic Literature Review (SLR) method, which allows researchers to systematically summarize, compare, and analyze various research findings regarding the relationship between shift work systems and job stress on employee performance in Indonesia. This approach allows the study to provide a more comprehensive picture because it covers various job sectors, such as manufacturing, healthcare, and modern retail trade. Thus, the SLR helps identify patterns of relationships, consistencies, and differences in findings between studies, thus generating broader conclusions.

However, the limitation of this study lies in the methodological information in the reviewed articles. Although several articles presented the results of instrument validity and reliability tests, most did not detail the theoretical basis used in developing the indicators for the variables of work shifts, job stress, and employee performance. Furthermore, it was not clearly stated whether the instruments used were adapted from previously validated standard scales or were developed by the researchers themselves based on a specific conceptual

framework. This limited information makes it difficult for researchers to determine conceptual congruence between studies, potentially affecting the accuracy of comparing study results. This condition is one of the limitations in the Systematic Literature Review (SLR) analysis process.

CONCLUSION AND SUGGESTION

Based on the results of the Systematic Literature Review (SLR), it was concluded that several studies have linked work shift systems to employee performance, both directly and through work stress as an intermediary variable. Unergonomic shifts, long working hours, and irregular rotations tend to increase stress, ultimately leading to decreased performance. However, under certain conditions, stress at optimal levels can drive improved performance. Differences in industrial sectors, such as manufacturing, healthcare, and modern retail (e.g., Alfamart and Alfamidi), indicate that the direction and magnitude of the relationship are significantly influenced by job characteristics and the quality of human resource management. However, this conclusion remains limited since most of the reviewed articles did not detail the theoretical basis and sources of the measurement instruments used, thus the equivalence of constructs across studies cannot be fully confirmed.

Because the findings indicate that inappropriate shift systems increase stress and impact performance, organizations need to design more ergonomic shift scheduling, such as forward rotation (morning-afternoon-evening), limiting consecutive night shifts, and providing adequate minimum rest periods. Additionally, strengthening workplace support through stress coping training, counseling services, regular survey-based workload evaluations, and supportive supervision should be implemented to reduce excessive stress. With this evidence-based psychological approach, organizations can

mitigate the negative impacts of stress while maintaining and sustainably improving employee performance.

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AUTHOR CONTRIBUTION

Author Indah Purwitasari was responsible for the literature search and selection, analysis of the review results, manuscript preparation, and reference management. Author Endang Dwiyanti determined the research design, provided guidance during the preparation of the article, provided proofreading, and provided direction during the writing of the article.

CONFLICT OF INTEREST

The authors declare there are no conflicts of interest.

DECLARATION OF ARTIFICIAL INTELLIGENCE (AI)

The authors acknowledge the use of PerplexityAI for language refinement and summarization in the preparation of this manuscript. All AI-generated content has been rigorously reviewed, edited, and

validated to ensure accuracy and originality. Full responsibility for the final content of the manuscript rests with the authors.

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