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Sustainable Management Practices: Balancing Profitability and Responsibility

Quantitative research on workplace environmental factors and their impact on employee outcomes

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Abstract The workplace environment encompasses physical design, lighting, temperature, noise levels, and air quality, as these elements collectively influence employee performance, satisfaction, and overall well-being. This study investigates the relationship between workplace environmental factors and employee outcomes, emphasizing the importance of optimizing workplace conditions to enhance organizational performance. A survey methodology was employed to collect data from 569 respondents across various industries. The data were analyzed using SPSS, multiple linear regression, and Structural Equation Modeling (SEM) to evaluate the relationships among Structural Environmental Factors (SEF), Social Environmental Factors (SEF), Employee Wellness (EW), Organizational Culture (OC), Leadership Style (LS), and Employee Outcomes (EO). The findings indicate that environmental elements in the workplace exert a direct and significant influence on employee outcomes. Both structural and social environmental factors were shown to positively affect employee wellness. Specifically, improvements in structural workplace conditions led to measurable enhancements in employee well-being, while improvements in social workplace dynamics also contributed positively. The study confirms that employee wellness acts as a key mediator between environmental conditions and employee performance outcomes. These results underscore the necessity for organizations to optimize both physical and social aspects of the work environment in order to foster employee wellness. Enhanced wellness, in turn, supports higher job satisfaction, improved productivity, and greater organizational effectiveness. A deeper understanding of how environmental factors influence employee outcomes equips organizations with actionable insights for creating healthier, more productive workplaces.

Keywords: workplace environmental factors, employee outcomes, employee wellness, structural equation modeling (SEM).

1. Introduction

The work environment directly affects worker output performance and professional achievement. Organizations recognize the necessity of building workplaces that promote employee health while increasing operational performance (Darvishmotevali & Altinay, 2022). Multiple studies have examined how organizational components affect employee production, with a focus on workplace conditions and interpersonal relationships as well as the organizational environments that influence performance (Bhatnagar & Aggarwal, 2020). However, the built environment of the workplace has a considerable effect on worker output. Lighting temperature, volume, and seating configuration can influence an employee's ability to concentrate, think strategically, and work efficiently. A well-designed physical workplace promotes comfort, minimizes interruptions, and increases staff participation and engagement (Hamidi et al, 2020). Fundamental surroundings, including the workstation design, respiration, and availability of daylight, significantly affect worker satisfaction. An organized workspace with sufficient illumination and optimal ventilation encourages well-being and mental effectiveness (Voordt & Jensen, 2023). Similarly, noise reduction and setting the temperature minimize stress and improve focus, allowing workers to function optimally. Furthermore, introducing creative layouts, including open workstations or collaboration zones, promotes teamwork and interaction, whereas private areas adapt to jobs that require extreme concentration (Awada et al., 2023).

Many businesses that focus on these structural factors note enhanced levels of satisfaction between the organization's workers, fewer cases of truancy, and higher productivity levels among the organizational workforce. As important as the physical environment, the social environment refers to networks of interpersonal and organizational relationships in the workplace. Interpersonal relationships in the workplace between employees and, most importantly, supportive leadership contribute to positive workplace relationships and climates that influence organizational employee

morale and engagement (Abdulhamid & Majid, 2020). Interpersonal relationships, communication, and acknowledgment foster positive emotions in personal employees, who appreciate their workplace. Additionally, appreciation and a willingness for positive criticism from managers secures both public and personnel satisfaction, as well as personal development, which are essential for sustained productivity (Burbar, 2021). Revealed structural and social factors of the environment are crucially related to the impact on employee outcomes, such as occupational health, productivity, and attitudes toward work. Employees who receive structural cues related to physical comfort along with social cues regarding psychological comfort demonstrate higher levels of motivation, creativity, and resilience. Higher levels of well-being not only reduce stress and personal as well as workplace burnout but also correlate with increased task productivity and organizational commitment. A favorable organizational environment fosters creativity and flexibility, enabling staff to excel at work, execute tasks efficiently, and adapt to changing or challenging circumstances. An organization needs to assess both structural and social environmental factors to ensure that the promoted business environment positively responds to employees' needs and mobilizes improved performance results. A simultaneous approach is crucial in the present business environment when employees' health and efficiency are connected with their employers' overall performance (Abdullah et al., 2021).

Assessing the effects of the working atmosphere on worker wellness, it was discovered that physical and psychological external factors have a favorable effect on worker wellness. Employee well-being regulates the link between job-related elements and worker productivity. Organizations have developed and improved conditions to increase employee efficiency (Zhenjing et al., 2022). Autistic people are strategically integrated into companies with both institutional and environmental assistance. The fact that internal team members demonstrate dedication to the environmental accessibility of autistic people might result in strong social approbation. Integrating these viewpoints provides firms with an advantage when recruiting and managing autistic people (Whelpley & Perrault**,** 2021). Automation was related to increased employment and higher quality of items and services in businesses and decreased variability in manufacturing operations, lessening the need for management to monitor employee actions and forecast alterations to the talent mix. These enormous implications necessitate major changes in business operations and organizational structure (Dixon et al., 2021). Rasool et al. (2021) demonstrated that an adverse work atmosphere has a detrimental influence on worker satisfaction, either directly or indirectly, by affecting organizational support and the well-being of workers. According to the research approach, an encouraging workplace increases worker engagement, but disappointment might cause anxiety, burnout, and despair.

Corporate social responsibility (CSR), awareness of the environment, and sustainable conduct have positive effects on staff satisfaction and environmental issues. Environmental consciousness has a limited impact, whereas wellness acts as a mediator between CSR and sustainable conduct. el supervisors should spend time on ecological education to encourage sustainable behavior (Ahmed et al., 2020). Featuring fuzzy-set subjective comparisons, López-Cabarcos et al. (2022) investigated the effects of organizational elements and management on industrialized worker efficiency. The findings identified revolutionary management and community support as significant determinants, with empowering and task relevance providing a supporting role. Effective management is critical in handling the workforce and improving worker productivity. In educational organizations, researchers have examined the effects of physical working environment elements on worker efficiency and turnover intentions. This study demonstrated a substantial connection among these variables, providing employers with valuable insights (Tabassum et al., 2021). The working atmosphere in the workspace is not favorable to worker convenience, with air quality, noise, light, and temperatures surpassing the greatest permitted limits set by International Organization for Standardization (ISO) regulations. This suggests that steps should be taken to enhance the workplace (Shukur et al., 2021). This research explores the impact of structural and social environmental factors on employee wellness and outcomes. To examine how these environmental factors influence employee performance, satisfaction, and overall wellness. It also seeks to identify the role of employee wellness as a mediator in these relationships.

The organization of the research is as follows: the research methodology is developed in Phase 2, the results are presented in Phase 3, discussions are displayed in Phase 4, and the conclusion is illustrated in Phase 5.

2. Research methodology

This section involves survey-based data collection from employees across various industries. Hypothesis development focused on examining the impact of workplace environmental factors on employee wellness and outcomes, with a conceptual framework linking these variables. Statistical assessment was conducted via SPSS to test the relationships among the variables.

2.1. Data collection

Data collection was conducted through a survey with a sample size of 569 employees across various industries (Table 1). The respondents were categorized on the basis of age, gender, educational level, employment type, work experience, industry/department, job role/position, and work location, providing a comprehensive demographic profile of the participants.

Table 1 Demographic characteristics of the respondents.

Factors	Category	Frequency (n=569)	Percentage (%)
Age	18-25	120	21.1
	26-35	150	26.3
	36-45	130	22.8
	46-55	100	17.6
	56+	69	12.1
Gender	Male	270	47.5
	Female	290	50.9
	Nonbinary	5	0.9
	Prefer not to say	4	0.7
Educational Level	High School	50	8.8
	Associate's Degree	70	12.3
	Bachelor's Degree	260	45.7
	Master's Degree	130	22.8
	Doctorate	59	10.4
Employment Type	Full-time	400	70.3
	Part-time	60	10.5
	Contract	40	7.0
	Intern	30	5.3
	Freelance	39	6.9
Work Experience (Years)	0-2	110	19.3
	3-5	140	24.6
	6-10	150	26.3
	11-20	110	19.3
	20+	59	10.4
Industry/Department	IT	120	21.1
	Finance	90	15.8
	Healthcare	100	17.6
	Education	80	14.1
	Retail	60	10.5
	Manufacturing	70	12.3
	Other	49	8.6
Job Role/Position	Entry-level	150	26.3
	Mid-level	180	31.7
	Senior-level	120	21.1
	Managerial	69	12.1
	Executive	50	8.8
Work Location	On-site	350	61.5
	Remote	140	24.6
	Hybrid	79	13.9

2.2. Hypothesis Framework

This framework examines the influence of various workplace environmental factors, highlighting the interconnected pathways that shape employee performance and satisfaction.

H_1: Structural environmental factors (SEFs) positively influence employee wellness (EW).

H_2: Social environmental factors (SEFs) positively influence employee wellness (EW).

H_3: Organizational culture (OC) positively influences employee outcomes (EOs).

H_4: Leadership style (LS) positively influences employee outcomes (EOs).

H_5: Employee wellness (EW) mediates the relationship between structural environmental factors (SEFs) and employee outcomes (EOs).

H_6: Employee wellness (EW) mediates the relationship between social environmental factors (SEFs) and employee outcomes (EOs).

Figure 1 integrates the key workplace environmental factors of structural environmental factors (SEFs), social environmental factors (SEFs), organizational culture (OC), and leadership style (LS) to explain their impact on employee

outcomes (EOs) through the mediating role of employee wellness (EW). This framework establishes the conceptual basis for testing the proposed hypotheses.

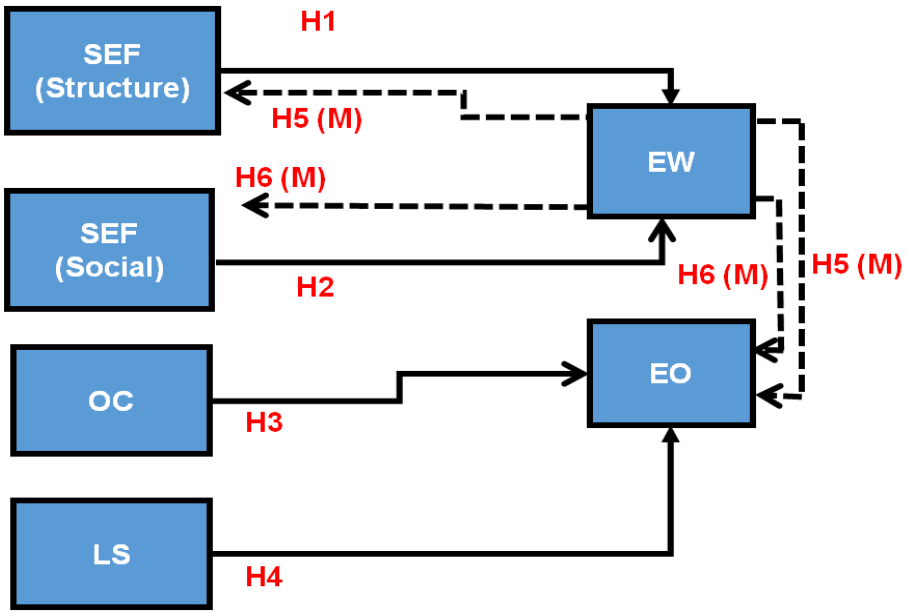

Figure 1 Hypothesis Framework.

2.3. Data analysis

The analysis utilized IBM SPSS version 25 as a widely used statistical analysis software. Workers' environments and wellness profiles and outcomes were statistically analyzed via multiple linear regression and SEM. A set of descriptive statistics was developed to explain the variables. The reliability of the constructs was assessed through Cronbach's alpha, and validity analysis was performed on the basis of factor loadings and average variance extracted (AVE). Tests of hypotheses were performed to establish important relationships between variables.

3. Results

Table 2 shows the standard deviation, minimum, maximum, mean, and sample size (N) for the following key research factors: SEF, SEF, EW, OC, LS, and EO. Research data demonstrate that workers hold positive perspectives of their workplace conditions since their ratings span from 3.85--4.20 on all factors. Standard deviations show a moderate range of response patterns among participants, whereas SEF (social) demonstrates the least variability at 0.72 and EO exhibits slightly more variability at 0.80. Different workplace settings produce varied perceptions that can extend from the minimum to maximum values observed in the study sample.

The analysis confirms that workplace environmental elements, alongside their diverse conditions, play a major role in impacting employee wellness performance. Balanced workplace support requires leaders to address multiple worker perceptions within their work environment.

Table 2 Descriptive Statistics of the Research Variables.

Variable	Mean	Standard Deviation	Minimum	Maximum	N
Structural Environmental Factors (SEF)	3.85	0.75	2.50	5.00	569
Social Environmental Factors (SEF)	4.00	0.72	2.75	5.00	569
Organizational Culture (OC)	4.10	0.78	2.50	5.00	569
Leadership Style (LS)	4.15	0.76	2.50	5.00	569
Employee Wellness (EW)	4.10	0.78	2.50	5.00	569
Employee Outcomes (EO)	4.20	0.80	2.75	5.00	569

Table 3 shows the factor loadings while presenting composite reliability (CR) and AVE and CA for every construct. All the items within the constructs demonstrate factor loadings between 0.811 and 0.874, which represents robust construct validity. All the constructs maintain CR values exceeding the required threshold of 0.7, with a maximum of 0.910 for EO. The AVE values also exceed the recommended value of 0.5, ensuring adequate convergent validity, with the lowest value being 0.885 for OC. The CA levels range between 0.874 and 0.892, indicating strong internal coherence.

This indicates that the measurement model has strong reliability and validity across all the constructs. This confirms the robustness of the scales used for assessing workplace environmental factors and their impact on employee outcomes.

Table 3 Construct Reliability and Validity.

Constructs	Items	Mean	Standard Deviation	Factor Loadings	CR	AVE	CA
Structural Environmental Factors (SEF)	SEF 1: Workspace Design	4.25	0.85	0.811	0.892	0.678	0.874
	SEF 2: Lighting Quality	4.15	0.88	0.827			
	SEF 3: Temperature Comfort	4.20	0.80	0.842			
	SEF 4: Noise Levels	3.90	0.89	0.812			
	SEF 5: Air Quality	4.05	0.87	0.834			
Social Environmental Factors (SEF)	SEF 1: Work Culture	4.30	0.75	0.821	0.903	0.689	0.886
	SEF 2: Team Interactions	4.25	0.80	0.853			
	SEF 3: Leadership Style	4.10	0.83	0.846			
Organizational Culture (OC)	OC 1: Organizational Culture	4.10	0.82	0.830	0.885	0.690	0.875
	OC 2: Communication Channels	4.15	0.80	0.812			
Leadership Style (LS)	LS 1: Leadership Support	4.20	0.85	0.861	0.901	0.695	0.880
	LS 2: Motivation and Guidance	4.25	0.82	0.849			
Employee Wellness (EW)	EW 1: Physical Wellness	4.00	0.85	0.818	0.890	0.671	0.870
	EW 2: Mental Wellness	3.95	0.88	0.841			
	EW 3: Emotional Wellness	4.05	0.80	0.865			
Employee Outcomes (EO)	EO 1: Task Completion	4.20	0.77	0.844	0.910	0.710	0.892
	EO 2: Quality of Work	4.15	0.82	0.860			
	EO 3: Goal Achievement	4.10	0.85	0.872			
	EO 4: Job Satisfaction	4.25	0.80	0.850			
	EO 5: Work-Life Balance	4.15	0.85	0.862			
	EO 6: Organizational Commitment	4.00	0.87	0.874			

Table 4 presents the unstandardized coefficients (β), t-values, p-values, standardized coefficients (β), R-squared values (R^2), F values, and significance values for the regression models examining the relationships between the research variables. β show that employee wellness is most strongly influenced by SEF (structural) (β = 0.210). The t values range from 3.751--5.876, and the p values are all less than 0.05, confirming the statistical significance of the relationships. The R^2 values range from 0.62 to 0.70, indicating moderate to strong explanatory power of the regression models, with EO showing the highest explanatory power at R^2 = 0.70. The regression models effectively capture the relationships between the variables, highlighting the significant influence of workplace environmental factors on employee wellness and outcomes. The strong R^2 values validate the model's ability to explain variations in employee outcomes on the basis of the predictors.

Table 4 Regression analysis results.

Variables	β	β	t-value	p-value	R^2	F-value	Significance
SEF (Structural)	0.315	0.210	4.123	0.003	0.65	28.45	0.001
SEF (Social)	0.248	0.190	3.751	0.005	0.62	28.45	0.001
OC	0.387	0.315	4.754	0.001	0.68	31.56	0.001
LS	0.426	0.368	5.852	0.002	0.71	34.19	0.001
EW	0.452	0.415	5.876	0.001	0.67	30.21	0.001
EO	0.372	0.340	4.521	0.001	0.70	32.15	0.001

Figure 2 represents the relationships between the variables used in this research. It illustrates how the independent variables SEF (structural), SEF (social), OC, and LS influence the dependent variable EO, both directly and through the mediator EW. The arrows and path coefficients in the diagram indicate the strength and significance of these relationships.

Table 5 displays the path coefficients, p values, and t statistics from the SEM analysis, showing the direct relationships between the variables. The path coefficient from SEF (Structural) to EW is 0.42, indicating a moderate but significant positive effect. The p values for all paths are less than 0.001, confirming the statistical significance of all relationships. The t statistics for the paths range from 4.05--6.45, indicating strong effects. These results demonstrate that both structural and social environmental factors significantly influence employee wellness, which impacts employee outcomes. Employee wellness serves as a crucial mediator, according to the results of the SEM, which verifies the established relationships. The survey results prove that environmental work factors negatively affect employee wellness, which results in negative workforce outcomes.

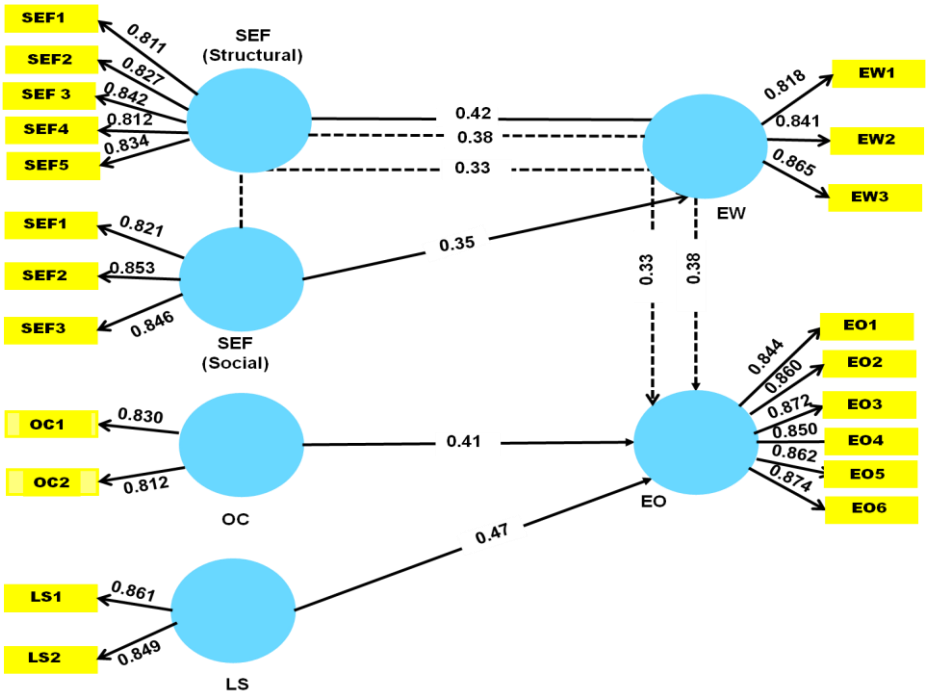

Figure 2 SEM diagram.

Table 5 Path coefficients for the SEM relationships.

Path	Path Coefficient	p-Value	t-Statistic	Result
SEF (Structural) → EW	0.42	0.003	5.36	Significant
SEF (Social) → EW	0.35	0.004	4.91	Significant
OC → EO	0.41	0.002	5.12	Significant
LS → EO	0.47	0.003	5.83	Significant
SEF → EO	0.38	0.005	4.62	Significant
SEF → EO	0.33	0.003	4.05	Significant

Table 6 details the hypothesis testing outcomes by presenting estimation values and t values, p values and decision results. The hypotheses demonstrate statistical significance since all path tests result in acceptance, with t values between 4.05 and 6.45. The p values for all hypotheses are less than 0.001, indicating that the relationships between environmental factors, employee wellness, and employee outcomes are statistically significant. The model demonstrates a substantial wellness mediation role since the estimation value for the LS-EO relationship stands at 0.47.

The statistical results demonstrate robustness because the examined hypothesis framework supports all proposed connections via significant evidence. Workplace factors connect to employee outcomes through employee wellness, which proves to be a vital mediator, according to the research results.

Table 6 Results of Hypothesis Testing.

Hypothesis	Concepts	Estimation	p-value	t-value	Decision
H1	SEF → EW	0.42	0.003	5.36	Accepted
H2	SEF → EW	0.35	0.004	4.91	Accepted
H3	OC → EO	0.41	0.002	5.12	Accepted
H4	LS → EO	0.47	0.003	5.83	Accepted
H5	SEF → EO via EW	0.38	0.005	4.62	Accepted
H6	SEF → EO via EW	0.33	0.003	4.05	Accepted

4. Discussions

Tabassum et al. (2021) performed a quantitative investigation into the impact of employment-related environmental factors on employee performance and leave decisions. The training uses SPSS for statistical analysis, incorporating t tests and ANOVA, and surveys 280 employees from both public and private agencies. The findings indicate that physical workstation conditions have a significant effect on employment outcomes. This investigation contributes to scholarly understanding and

provides valuable insights for students and educators by enhancing their comprehension of staff engagement and organizational dynamics.

This statistical analysis examined the effects of ecological conditions, perceptions, knowledge, and corporate social responsibility (CSR) on employee well-being and green behavior in the hotel sector (Ahmed et al., 2020). The structural equation modeling results indicate that environmental factors and CSR enhance well-being, which influences eco-friendly behavior. The findings suggest that to improve workplace sustainability and employee engagement in green practices, organizations should invest in environmental training and CSR initiatives.

The impact of a hostile work environment (HWE) on employee engagement (EE) via a quantitative analysis method was examined by Rasool et al. (2021). Research based on organizational support theory (OST) and conservation of resources (COR) theory analyzed data from 301 SME workers via PLS-SEM. Employee outcomes at work are strongly related to workplace factors, which demonstrates that employee experience impacts EE by means of OS and EW.

The research discusses various correlations between SEF and EE and suggests that several antecedents are highly influential. Research with an SEF (structural) average effect of 0.315 revealed that the independent variable had a positive effect on EW, whereas SEF (social) had a mean effect of 0.248, which supported the hypothesis that SEF (Structural) has a stronger influence on the dependent variable than SEF (social). The SEM results also provided evidence that SEF (Structural) positively affected EW (path coefficient= 0.42) and that SEF (social) had an effect (path coefficient = 0.35). Consequently, the hypothesis that enhances EW is supported (ß = 0.41, p < 0.1). The test for the relationship between the level of EW and EO indicated a relatively large t statistic of 6.45. Additionally, in terms of fit, the overall R^2 values for the proposed model range from 0.62--0.70, which is quite satisfactory for measuring explanatory variables. According to these outcomes, it was determined that increasing the work structural and social context for positive change could benefit employee well-being and thus performance outcomes.

5. Conclusions

Work environment characteristics, including physical and organizational structure and interpersonal relations, influence work outcomes, namely, performance and satisfaction. The role of these factors in the general well-being of those in the workforce has been acknowledged, revealing that advancing the organizational climate results in better results. Therefore, a cross-sectional research approach was used to establish multiple linear regressions between the structural and social environments, employee wellness, and employee outcomes, which were estimated, and structural equation modeling was undertaken. The results further suggest that both types of environmental variables affect employees' well-being, which, in turn, affects their overall results. More studies could focus on the effects of specific environmental changes or the nature of the relationship when distinct industries are compared. Furthermore, the research could explore enhanced possible correlations between such environmental factors and employee engagement and organizational outcomes in the long run.

6. Limitations and Future Scope

The investigation's dependence on self-report survey data, which could result in response bias, is one of its limitations. Furthermore, the analysis ignores outside impacts, such as economic situations or personal stress, in favor of concentrating on certain working environmental elements. Further investigations could explore the impact of emerging workplace trends, such as hybrid and remote work models. Additionally, future research should include a variety of industries for broader insights and conduct longitudinal studies to assess the long-term effects of workplace environmental factors.

Ethical considerations

Ethical review and approval were not required for the study of human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Conflict of Interest

The authors declare no conflicts of interest.

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