

Effect of Work-Life Balance on Work Stress, Sleep Disorders, and Employee Performance

Rifdah Hardaning Tyas¹⁾, Bhisma Murti¹⁾, Sumardiyono³⁾,
Revi Gama Hatta Novika^{1,2)}, Okid Parama Astirin⁴⁾

¹⁾Master's Program in Public Health, Universitas Sebelas Maret, Surakarta, Indonesia

²⁾Midwifery Study Program, Universitas Sebelas Maret, Surakarta, Indonesia

³⁾Study Program of Occupational Safety and Health, Universitas Sebelas Maret, Surakarta, Indonesia

⁴⁾Faculty of Mathematics and Natural Sciences, Universitas Sebelas Maret, Surakarta, Indonesia

Received: November 23, 2025; Accepted: December 19, 2025; Available online: January 16, 2026

ABSTRACT

Background: Work-life balance is a crucial factor influencing employee psychological well-being and performance. An imbalance between work and personal life can increase job stress, trigger sleep disturbances, and decrease productivity. This study aims to analyze the effect of work-life balance on job stress, sleep disturbances, and employee performance.

Subjects and Method: This cross-sectional study was conducted at the Mineral and Coal Testing Center in Bandung from March to April 2025. A total of 207 patients were selected using exhaustive sampling. The dependent variable was work-life balance. The independent variables were work stress, sleep disturbance, and employee performance. Data were analyzed using path analysis.

Results: The results of this study show that Work-life balance negatively affected job stress ($b = -1.04$; 95% CI = -1.18 to -0.91; $p < 0.001$) and sleep disturbance ($b = -1.45$; 95% CI = -1.65 to -1.23; $p < 0.001$), and positively affected performance ($b = 0.42$; 95% CI = 0.31 to 0.53; $p < 0.001$). Job stress positively affected sleep disturbance ($b = 0.57$; 95% CI = 0.49 to 0.65; $p < 0.001$).

Conclusion: Work-life balance has a direct impact on performance and an indirect impact through reduced work-life stress and sleep disturbances. Interventions to improve work-life balance should be a company priority. to support employee productivity and well-being.

Keywords: work-life balance, work stress, sleep disorders, work performance

Correspondence:

Bhisma Murti. Master's Program in Public Health, Universitas Sebelas Maret. Jl. Ir. Sutarmi 36A, Surakarta, Central Java 57126, Indonesia. Email: bhisma.murti@staff.uns.ac.id.

Cite this as:

Tyas RH, Murti B, Sumardiyono, Novika RGH, Astirin OP (2026). Effect of Work-Life Balance on Work Stress, Sleep Disorders, and Work Performance. *Health Policy Manage*, 11(01): 68-75. <https://doi.org/10.26911/-thejhpm.2026.11.01.07>.



©Rifdah Hardaning Tyas. Published by Master's Program of Public Health, Universitas Sebelas Maret, Surakarta. This open-access article is distributed under the terms of the [Creative Commons Attribution 4.0 International \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/). Re-use is permitted for any purpose, provided attribution is given to the author and the source is cited.

BACKGROUND

Human resources play a crucial role in the success and sustainability of organizations, both in the public and private sectors. Employee performance determines the achievement of organizational goals, which

encompass economic, social, and environmental dimensions. Corporate sustainability is impossible without employee participation and commitment (Borgia *et al.*, 2022). International Labour Organization (ILO) data shows that in 2023, Indonesia's labor productivity reached IDR 227,000 per person/hour,

placing it fifth in ASEAN, behind Singapore, Brunei, Malaysia, and Thailand.

Indonesia is currently experiencing the effects of the government's budget efficiency policies. These policies have impacted civil servants, including the Ministry of Energy and Mineral Resources (ESDM), Indonesia's largest non-tax state revenue (PNBP) earner. These efficiency measures impact employee well-being through the elimination of benefits, restrictions on official travel, and planned allowance cuts, while increasing demands and working hours. These conditions have the potential to disrupt work-life balance, trigger stress, and reduce productivity. Employees who are unable to balance work and personal responsibilities are at risk of psychological and behavioral disorders, which impact organizational performance.

Work-life balance is an individual's ability to divide time and responsibilities between work and personal life. Excessive workload can disrupt this balance, trigger stress, and reduce productivity. Employees who are unable to maintain balance are at risk of psychological and behavioral disorders that negatively impact performance (Borgia *et al.*, 2022; Yulinda *et al.*, 2023).

Job stress occurs when the demands and expectations of a job exceed an individual's coping abilities. While workplace stress is unavoidable, if left unchecked, it can harm employee health and disrupt organizational performance. Stress levels indicate the extent to which an individual perceives this pressure (Alamdarloo *et al.*, 2023).

One significant impact of stress is sleep disturbance, which refers to poor sleep quality or quantity. This disruption not only affects nighttime rest but also impacts physical and emotional health and optimal daytime functioning (Salikunna *et al.*, 2022).

In Indonesia, based on data from the Director General of Health Efforts, it states that of the adult population in Indonesia of

150 million people, around 11.6% or 17.4 million adults experience emotional mental disorders such as anxiety and depression, while research conducted by the Master of Occupational Medicine study program, Faculty of Medicine, University of Indonesia, around the 1990s showed that around 30% of workers have experienced work stress, ranging from mild to severe complaints. This stress can be caused by various internal and external factors of the work, and has the potential to increase in the current era. This condition has a significant impact on performance, so companies need to minimize work stress to maintain the quality and commitment of employees (Huang and Wang, 2019).

One of the most common effects of stress is sleep disturbance. The National Sleep Foundation reports that 43% of people aged 13–64 wake up at night due to stress at least once a month. Poor sleep quality, both in terms of quantity and quality, can impact physical and mental health, triggering anxiety and depression, reducing daytime functioning, and increasing the risk of workplace accidents. This can lead to decreased employee performance (Furuichi *et al.*, 2020).

Declining employee performance impacts work-life balance. One strategy for maintaining performance is through the implementation of a work-life balance system. A Robert Walters survey showed that one of the top three things workers desire is a balance between work and personal life. This is crucial because employees not only have work responsibilities but also family responsibilities and a life outside of work.

Based on the phenomenon of work stress, sleep disorders, and work-life imbalance that affect employee performance as proven by previous research and preliminary studies, researchers are interested in analyzing the effect of work-life balance on stress,

sleep disorders, and performance in employees of the Mineral and Coal Testing Center (Ministry of Energy and Mineral Resources).

SUBJECTS AND METHOD

1. Study Design

This study used an observational analytical design with a cross-sectional approach. The study was conducted at the Mineral and Coal Testing Center in March-April 2025.

2. Population and Sample

The population in this study were employees working at the Mineral and Coal Testing Center. Sampling in this study was conducted using exhaustive sampling based on the following inclusion criteria: Employees with Civil Servant (PNS) or Government Employees with Work Agreements (P3K) status and have worked for more than 1 year.

3. Research Variables

In this study, the dependent variable is work-life balance, while the dependent variables are work stress, sleep disturbance, and performance.

4. Operational Definition

Work Life Balance is a condition where a person can balance between personal life and work, so that work does not interfere with personal life and vice versa.

Job stress is the level of pressure, emotional tension, and negative responses that arise due to work demands that do not match the individual's capacity or abilities.

Sleep disorders are conditions where sleep is disturbed, causing a decrease in the quality and quantity of sleep, thus affecting physical and mental function during the day.

Performance is a state of disturbed sleep that causes a decrease in the quality and quantity of sleep, thus affecting physical and mental function during the day.

Contains operational definitions of each variable in this study (dependent and independent variables).

5. Study Instrument

The instruments used in this study were questionnaires. The questionnaire used to measure work-life balance was the Work-Life Balance Scale, the questionnaire used to measure work stress was the Job Stress Scale, the questionnaire used to measure sleep disorders was the Pittsburgh Sleep Quality Index, and the questionnaire used to measure performance was a questionnaire compiled by researchers based on existing theories. These questionnaires have been tested for validity and reliability. T explains the measurement tools (for example, questionnaires or scales) designed to obtain data on a topic of interest from study subjects.

6. Data Analysis

Univariate analysis aims to explain and describe the characteristics of each research variable. Bivariate analysis in this study uses *simple regression*, and multivariate analysis uses path analysis.

7. Research Ethics

This research has received a certificate of ethical feasibility from RST. dr. Soedjono Magelang, Indonesia, No. 615/EC/I/2025.

RESULTS

1. Sample Characteristics

The sample characteristics in this study were divided into two variables: gender and highest level of education. The sample characteristics are shown in Table 1. Table 1 shows that from 207 gender dominated sample by There were 129 men (62.32%). Most of the respondents, 168 of whom (81.16%), had a bachelor's degree.

Table 1. Categorical data of sample characteristics

Variables	Category	Frequency	Proportion (%)
-----------	----------	-----------	----------------

Gender	Man	129	62.32
	Woman	78	37.68
Education	Diploma	21	10.14
	S1	168	81.16
	S2	18	8.70

2. Univariate Analysis

Univariate analysis is performed to analyze one variable independently. Table 2 shows the results of univariate analysis of continuous data on sample characteristics of work stress, sleep disturbance, work-life balance, and performance. The average work-life balance score was 21.67 (SD = 10.23) on a scale of 0–34. A minimum score of 0 indicates that some respondents have no work-life balance at all, while a maximum score of 34 indicates that some have excellent balance. The high variation (large SD) indicates significant differences between respondents.

The average work stress score was 10.18 (SD = 7.05) on a scale of 0–22. A minimum score of 0 indicates no stress at all, while a maximum score of 22 indicates very high stress. In general, relatively high scores

among some respondents may indicate a negative relationship between work-life balance and work stress: the lower the work-life balance, the higher the work stress.

The average sleep disturbance score was 6.94 (SD = 3.45) on a scale of 1–16. Although sleep disturbance was relatively lower than the maximum score, the variation suggests that some respondents experienced poor sleep quality. This may be linked to poor work-life balance, where high workloads and stress impact sleep quality.

The average employee performance score was 49.21 (SD = 6.48) from a range of 26–62. This relatively high score indicates that most respondents still performed well, despite the possible impact of stress and sleep disturbances resulting from work-life imbalance

Table 2. Univariate analysis of continuous data of sample characteristics

Variables	Mean	SD	Min.	Max.
Age (years)	33.67	6.53	21	57
Work life balance	21.67	10.23	0	34
Work stress	10.18	7.05	0	22
Sleep disorders	6.94	3.45	1	16
Performance	49.21	6.48	26	62

3. Bivariate Analysis

Table 2 shows the results of a bivariate analysis of the structural relationships between job stress, sleep disturbance, work-

life balance, and performance. This analysis was conducted using a simple regression test, as shown in Table 3.

Table 3. Bivariate Analysis Results

Variables	Regression coefficient (b)	95% CI		P
		Lower limit	Upper limit	
Work Stress	- 1.04	-1.17	-0.90	<0.001
Sleep Disorders	-0.26	-0.52	0.01	0.053
Performance	0.28	0.16	0.40	<0.001

Table 3 shows regression coefficient analysis This study examined the effect of work-life balance on job stress, sleep disturbances, and performance. The test was conducted using simple regression, taking into account the regression coefficient, 95% confidence interval, and statistical significance (p-value).

The analysis results show that work-life balance has a negative relationship with job stress (b= -1.04; 95% CI= -1.18 to -0.91; p<0.001). This means that the higher an individual's work-life balance, the lower their job stress levels. This relationship is statistically significant.

Work-life balance also had a negative relationship with sleep disturbances (b= -0.26; 95% CI= -0.53 to 0.01; p= 0.053). These results indicate that the higher a person's work-life balance, the lower their sleep disturbances, but this was not statistically significant (p= 0.053).

Work-life balance was positively and significantly related to performance (b=0.29; 95% CI = 0.16 to 0.41; p<0.001). The better a

person's work-life balance, the higher their performance tends to be.

4. Multivariate Analysis

Multivariate analysis is performed to analyze the relationship between more than two variables. Table 4 shows a path analysis of the effect of work-life balance on job stress, sleep disturbance and performance. Work-life balance is positively related to performance, and this relationship is statistically significant. Every 1-unit increase in work-life balance score is followed by a 0.42-unit increase in performance score (b = 0.42; 95% CI = 0.31 – 0.53; p < 0.001).

Work-life balance was negatively associated with sleep disturbance, and this relationship was statistically significant. Every 1-unit increase in work-life balance score was accompanied by a 1.45-unit decrease in sleep disturbance score (b = -1.45; 95% CI = -1.65 – -1.23; p < 0.001).

Job stress is positively associated with sleep disturbances. Every 1-unit increase in job stress scores is followed by a 0.57 increase in sleep disturbance scores (b = 0.57; 95% CI= 0.49 – 0.65; p < 0.001).

Table 4. Path Analysis of the Effect of Work–Life Balance on Performance through Sleep Disorders and Job Stress

Dependent Variable	Independent Variables	(b)	95% CI		P
			Lower limit	Upper limit	
Direct effect					
Work life balance	← Perfomance	0.42	0.31	0.53	<0.001
Indirect effect					
Work life balance	← Sleep Disorders	-1.45	-1.65	-1.23	<0.001
Sleep Disorders	← Job Stress	0.57	0.49	0.65	<0.001
Chi-Square (p) = 1.29					
RMSEA < 0.001; CFI= 1.00; TLI= 1.01; SRMR= 0.015					

DISCUSSION

1. The Influence of Work-Life Balance on Performance

The study results show that work-life balance is positively related to performance. This study indicates that work-life balance has a positive effect on performance. Employees

with a high work-life balance can improve their work performance. Conversely, employees with a low work-life balance are affected by low performance.

According to Badrudin & Darmastuti (2024), work-life balance positively impacts performance by increasing job satisfaction.

Employees who effectively balance work and personal life experience higher satisfaction, which leads to improved performance. This relationship is significant, indicating that maintaining work-life balance is crucial for employee productivity.

According to Osazevbaru et al. (2024), work-life balance significantly affects employee performance at Delta State Bank, Nigeria. Specifically, flexi-time schedules, family leave programs, childcare facilities, and job sharing positively influence employee performance.

According to Sylvia et al. (2024), who stated that work-life balance has a significant positive effect on employee performance in humanitarian organizations in Juba, South Sudan, indicating that better leave policies and a well-organized work environment increase employee comfort and productivity.

2. The Effect of Work-Life Balance on Sleep Disorders

The study results show that work-life balance is negatively associated with sleep disturbances. This study indicates that work-life balance negatively impacts sleep disturbances. Employees with a high work-life balance can experience fewer sleep disturbances. Conversely, employees with a low work-life balance can experience increased sleep disturbances.

According to Badri et al. (2023), work-life balance significantly influences sleep disturbances, with this study demonstrating a direct relationship. Improved work-life balance correlated with decreased sleep disturbances, highlighting the importance of this factor among the various well-being aspects that influence sleep patterns among working adults in Abu Dhabi.

According to Ito-Masui et al. (2021), who stated that work-life balance significantly affects sleep disturbances, this study demonstrated a direct relationship between well-being interventions and improved sleep

patterns. Through the application of internet-based cognitive behavioral therapy (iCBTS) integrated with daily well-being prediction, this study demonstrated that increased awareness of well-being and support for healthy sleep habits correlated with increased sleep duration and a reduced risk of sleep disturbances in shift-working healthcare workers. These findings highlight the importance of work-life balance as a key factor in maintaining sleep quality, particularly in high-risk populations such as healthcare workers in intensive care units.

According to Lucchini & Riva (2020), work-life balance significantly influences sleep disturbances. This study demonstrated a direct relationship through a longitudinal analysis of male and female employees in Switzerland. This study found that the inability to psychologically detach from work significantly impacts insomnia. In other words, a good work-life balance, reflected in an individual's ability to rest after work, correlates with a decrease in sleep disturbances.

3. The Effect of Work Stress on Sleep Disorders

The study results show that job stress is positively associated with sleep disturbances. This study indicates a positive effect of job stress on sleep disturbances. Employees with high job stress experience increased sleep disturbances. Conversely, employees with low job stress experience reduced sleep disturbances.

According to Jiang et al. (2021), increased work stress is significantly positively correlated with sleep disturbances. Increased work stress and decreased resources are correlated with sleep disturbances in both male and female workers. According to the researchers, reducing work stressors is a protective factor against sleep disturbances.

According to Khatoon et al. (2023), who stated that work-related perceived stress (WRPS) was significantly correlated with

sleep disturbance ($r= 0.397$, $p <0.01$), indicating that higher stress levels negatively impact sleep disturbance among working students and emphasizing the need for stress management to improve sleep health.

According to Saedpanah et al. (2022), who studied stress levels among nurses, these researchers stated that higher work stress among nurses correlated with increased sleep disturbances, highlighting the importance of managing work-related stress

AUTHOR CONTRIBUTION

All authors have made significant contributions to the data analysis and preparation of the final manuscript.

CONFLICT OF INTEREST

There are no conflicts of interest in this research.

FUNDING AND SPONSORSHIP

This research was privately funded.

ACKNOWLEDGEMENT

The author would like to thank all parties involved in all the preparation and data collection in this study.

REFERENCE

Alamdarloo GH, Moradi S, Moradi S (2023). Job stress among general and special school teachers in Jahrom City, Iran. *Int J Public Health Res.* 13(1):1–8. <https://doi.org/10.17576/ijphr.1301.2023.01>.

Badri M, Alkhaili M, Aldhaheri H, Yang G, Albahar M, Alrashdi A (2023). From good sleep to health and to quality of life: A path analysis of determinants of sleep quality of working adults in Abu Dhabi. *Sleep Sci Pract.* 7(1):1–13. <https://doi.org/10.1186/s41606-023-00083-3>.

Badrudin KRAZ, Darmastuti I (2024). The

role of work-life balance and work environment on employee performance. *Proc FMI Natl Semin.* 2:211–223.

Borgia MS, Virgilio FD, Torre ML, Khan MA (2022). Relationship between work-life balance and job performance moderated by knowledge risks: Are bank employees ready? *Sustainability.* 14(9):5416. <https://doi.org/10.3390/su14095416>.

Furuichi W, Shimura A, Miyama H, Seki T, Ono K, Masuya J, Inoue T (2020). Effects of job stressors, stress response, and sleep disturbance on presenteeism in office workers. *Neuropsychiatr Dis Treat.* 16:1827–1833. <https://doi.org/10.2147/NDT.S258508>.

Huang KP, Wang KY (2019). A study on the correlation between working pressure and job satisfaction from the viewpoint of work exhaustion. *Rev Cercet Interv Soc.* 64:235–245. <https://doi.org/10.33788/rcis.64.19>.

Ito-Masui A, Kawamoto E, Sakamoto R, Yu H, Sano A, Motomura E, Tanii H, et al. (2021). Internet-based individualized cognitive behavioral therapy for shift work sleep disorder empowered by well-being prediction: Protocol for a pilot study. *JMIR Res Protoc.* 10(3):1–9. <https://doi.org/10.2196/24799>.

Jiang Y, Li P, Zhong L, Gao X, Ning L, Lian Y, et al. (2021). The influence of changes in work stressors and coping resources on sleep disturbances: Evidence from the OHSPIW cohort study. *Sleep.* 44(8):zsab039. <https://doi.org/10.1093/sleep/zsab039>.

Khatoon H, Arshad A, Khan ML, Noor A, Mustafa FM, Tahir AT (2023). Work stress, sleep disturbances, and quality of life in employed university students. *Acad J Psychol Couns.* 5(1):1–10.

- <https://doi.org/10.22515/ajpc.v5i1.7691>.
- Lucchini M, Riva E (2020). The effect of the work-life interface on insomnia: A longitudinal analysis of male and female employees in Switzerland. *Swiss J Sociol.* 46(3):425–443. <https://doi.org/10.2478/sjs-2020-0021>.
- Osazevbaru OH, Oghenedoro A (2024). Occupational stress and employee performance of deposit money banks in Delta State, Nigeria. *Int J Soc Sci Manag Rev.* 7(2):128–142. <https://doi.org/10.37602/IJSSMR.2024.7210>
- Saedpanah K, Ghasemi M, Akbari H, Adibzadeh A, Akbari H (2022). Effects of workload and job stress on shift work disorders among nurses: PLS-SEM modeling. *Eur J Transl Myol.* 33(1):10909. <https://doi.org/10.4081/ejtm.2022.10909>.
- Salikunna NA, Astiawan WD, Handayani F, Ramadhan MZ (2022). The relationship between sleep quality and concentration levels in college students. *Healthy Tadulako J.* 8(3):157–163.
- Sylvia DN, Bakata, Justine W, Mabonga E (2024). Effect of work-life balance on employee performance in selected humanitarian organizations in South Sudan. *Int J Res Publ Rev.* 5(3):627–630. <https://doi.org/10.55248/geng-pi.5.0324.0624>.
- Yuslinda Y, Astaginy N, Hendrik H (2023). The effect of workload and work-life balance on job stress in leadership elements within the Faculty of USN Kolaka. *J Financ Account Bus.* 1(2):213–221. <https://doi.org/10.47233/jakbs.v1i2.137>.