

Why Does Work Stress Occur in Nurses?

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ABSTRACT

Introduction: Work stress can occur in many professions, including nursing, which is inseparable from individual characteristics. Inpatient is one of the units at Ploso Regional Public Hospital, Jombang, which has time-consuming work that requires observation on an ongoing basis. This study aimed to understand the relationship between individual characteristics, such as age, gender, marital status, working period, and personality type, with the level of work stress experienced by the inpatient installation unit nurses at Ploso Regional Public Hospital, Jombang. **Methods:** Observational descriptive study was applied with a cross-sectional design. Age, gender, marital status, working period, and personality type were the independent variables used in this study, while the dependent variable was work stress. The sample used was the total accessible population of nurses in the inpatient unit with 33 respondents. The data collection method used was a general questionnaire for personal variables (age, gender, marital status, working period), Personality Type Questionnaire for personality type, and Health and Safety Executive (HSE) Questionnaire for work stress. Data were analyzed using chi-square correlation and spearman correlation test. **Results:** In the inpatient installation unit, most nurses were male between the ages of 24-37, had a working period of less than five years, were married, and had type A personality. The individual characteristics which had a moderate relationship with work stress were age ($\rho = 0.419$), marital status ($\rho = 0.461$), and working period ($\rho = 0.359$). Gender ($\rho = 0.246$) and personality type ($\rho = 0.179$) had a weak relationship with work stress. **Conclusion:** Age, marital status, and working period had a moderate relationship with work stress, while gender and personality type had a weak relationship.

Keywords: hospital, inpatient nurse, work stress

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INTRODUCTION

In 1992, United Nations (UN) declared that work stress is a disease of the 20th century and beyond. This statement encourages the development of various studies on work stress. The State of the Global Workplace 2021 Report by Gallup (2021) revealed an increase in workers' daily stress from 38% in 2019 to 43% in 2020. This report also mentioned that 36% of workers in Southeast Asia experience daily stress. In Indonesia, work stress sits at 19%, an increase of 4% compared to the average in the previous three years.

Work stress can affect individual performance and organization (Universari and Harsono, 2021).

According to Hadiansyah, Praghlapati, and Aprianto (2019), work stress might affect nurses' professionalism in serving patients. Nurses frequently perform poorly, resulting in subpar patient care. Work stress manifests as burnout, job dissatisfaction, and intention turnover. On an organizational level, work stress can reduce company profits and general income. This loss is caused by an imbalance in productivity and the actual cost incurred to pay salaries, benefits, and other facilities for the employees (Tanjung and Hutagalung, 2018). In Hongkong, the approximated cost loss due to work stress in 2020 was in the range of 8.8 trillion to 13 trillion rupiah (Siu *et al.*, 2020). It is estimated that in 2017-2018 losses due to work stress in Australia reached 359 million rupiah (Safe Work Australia, 2021).

The Labour Force Survey (LFS) conducted by Central Statistics Office (2021) stated that the 2nd

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highest industry with prevalent work stress is human health and social work activities, including health professionals. In line with LFS' research, a study by O*NET (2020) revealed that 10 of 15 jobs with the highest level of work stress are health workers, including nurses. In 2020/2021, around 52.6% of their respondents who suffered from work stress, anxiety, or depression were caused or aggravated by the effects of the COVID-19 pandemic.

Paramedical staff, including nurses, have greater work stress compared to medical doctors (Couarrazze *et al.*, 2021). According to the Indonesian National Nurses Association (2015), 51% of Indonesian nurses experiencing work stress frequently face dizziness, malaise, poor friendship, and restlessness due to inadequate income and high workload.

Nurses are placed in installation units according to their expertise, whether in the Intensive Care Unit (ICU), emergency room, operating room, or inpatient room. In the inpatient installation unit, nurses have a time-consuming job because they need to be prepared whenever a patient requires treatment or help. They engage with patients, families, coworkers, leaders, and doctors, all of whom might put them under stress (Helmiatin and Susanty, 2018). The responsibility to give services that require observation on an ongoing basis can cause work stress. This is in line with research by Siregar, Kurniarti, and Widakdo (2020) that revealed in the inpatient installation unit of a government-owned hospital, nurses are required to serve patients and are not permitted to deny them. These requirements must be met to ensure service quality.

According to Cristenzein and Adhi (2021), work stress is influenced by many factors, including individual factors, work factors, and factors outside of work. Individual factors or characteristics such as age, gender, working period, and personality type can affect the level of work stress because everyone's perception, understanding, and tolerance level can be different.

Ploso Regional Public Hospital is a type D hospital owned by Jombang district government. This hospital was formerly a community health center built to fulfill the high demand for health services in the area. In 2013, the community health center turned into a hospital. This hospital has 179 health workers, with 70 of them being nurses. One of the health services provided in this hospital is inpatient care. Inpatient care is the cornerstone of a hospital service that treats patients who require more than 24 hours of care (Dewi and Santoso, 2018).

Based on a preliminary study conducted on February 25, 2021, with two heads of inpatient installations at Ploso Regional Public Hospital, it is known that this hospital has six inpatient installation units consisting of neonate inpatient installation, adult inpatient installation, child inpatient installation, emergency room, operating room, and isolation room.

Based on interviews conducted with four head nurses in the inpatient installation unit on February 3, 2021, the nurses often complained of high work stress. Individual characteristics are considered to take part in the level of work stress because everyone has a different level of tolerance. This supports Anisah and Mulyono's research (2020) that stated that individual characteristics and work stress are related. Hsu (2019) stated that age differences might influence workers' resilience to fit in and adapt to the changing environment, which plays an important role in reducing burnout. From a gender perspective, Solanki and Mandaviya (2021) argued that gender is an important feature that affects the level of work stress, where women are more vulnerable to frustration and eventually burnout. Hatef *et al.* (2020) discovered that a nurse's marital status influences their level of work stress. According to the findings, the emotional support they received at home, whether from their partner or their children, had a substantial impact on their level of work stress. The working period can also influence workers' experience, their ability to complete work tasks and their ability to adapt to the new environment (Lestari and Rizkiyah, 2021). These factors can potentially position them at a higher risk of work stress. According to Philip, Chibuike and Okemefuna (2019), stress reactions reflect a variety of individual characteristics, some of which are linked to personality. This indicates that stress reactions to the same work stressor may differ amongst individuals, with personality types being one of the most important determinants. Therefore, further research regarding the individual characteristics (age, gender, marital status, working period, personality type) that influence nurses' work stress in the inpatient installation unit at Ploso Regional Public Hospital, Jombang, is necessary to conduct.

METHODS

This topic focused on descriptive observational research with a cross-sectional design. In February 2021, the survey was contributed to inpatient

installation unit nurses' at Ploso Regional Public Hospital, Jombang, East Java. Determination of the sample used was total sampling, with a total 67 nurses from 5 units: 9 nurses from neonatal inpatient installation, 14 nurses from adult and child inpatient installation, 12 nurses from emergency installation, 8 nurses from operating room, and 24 nurses from isolation room. The isolation room with 24 nurses was excluded due to safety considerations for both researchers and respondents of the study. During the data collecting process, 10 nurses refused to take part in this study, leaving 33 nurses as the total sample for this study. This research fulfilled ethical clearance with the number 044/HRECC.FODM/II/2021.

Age, gender, marital status, working period, and personality type were the independent variables used in this study. The dependent variable was work stress.

The data was collected through a general questionnaire for age, gender, marital status, working period, personality type, and work stress. Class interval is determined to obtain the four age groupings: 24-30 years old, 31-37 years old, 38-44 years old, and 45-52 years old. Meanwhile, working period is divided into three categories: < 5 years, 5-10 years, and > 5 years (Harlan, 2017). Personality type was measured using the Rosenman and Friedman questionnaire (1974) by adding 13 circled choices on the pairwise comparison questionnaire sheet. The score results in the range 14-92 are qualified to have type B personality, and the range 93-154 are qualified to have type A personality. Work stress was measured using Health and Safety Executive (HSE) questionnaire, with 35 questions covering physical, behavioral, and work-related symptoms on a 5-Likert scale. Score 1 is never, 2 is seldom, 3 is sometimes, 4 is frequent, and 5 is always. A score of 140-175 indicates low-stress level, 105-139 indicates moderate stress level, 70-104 indicates high-stress level, and 35-69 shows very high-stress level.

Data were analyzed using bivariable analysis in data processing software through correlation tests. Reading the contingency coefficient through the chi-square correlation test was done for nominal data and spearman correlation test was done to examine the relationship of variables for ordinal data. The interpretation used is authored by Hastono (2020).

RESULT

The results were obtained through questionnaires on individual characteristics (age, gender, marital status, working period, personality type) and work stress. The independent and dependent variables distribution is shown in the following table and explanation.

Table 1 shows the distribution of nurses' characteristics in the inpatient installation unit at Ploso Regional Public Hospital, Jombang. Based on the results from 33 respondents, most of them were in the adult age range (24-30 years old), and most were male. Most nurses here were married with working periods of less than 5 years and 5-10 years. The personality type distribution showed that most nurses have type A personality.

Based on table 2, most nurses experienced moderate stress (60.6%). Common symptoms of stress perceived by most nurses were psychological changes such as anger, irritation, or anxiety. This condition was rare, but in some situations, such as spikes in the number of patients resulting in a more significant workload than usual, nurses were more likely to be stressed.

Table 1. Distribution of Respondents Characteristics in Inpatient Installation Unit at Ploso Regional Public Hospital 2021

Respondents Characteristics	Frequency (n)	Percentage (%)
Age		
24-30	13	39.4
31-37	12	36.3
38-44	3	9.1
45-52	5	15.2
Gender		
Male	19	57.6
Female	14	42.4
Marital Status		
Never Married	7	21.2
Married	24	72.7
Divorced	2	6.1
Work Period		
< 5 years	12	36.3
5-10 years	12	36.3
> 10 years	9	27.4
Personality Type		
Type A	11	33.3
Type B	12	66.7

Crosstabulation between Age and Work Stress

Table 3 reveals that most nurses were 24-30 years old, and most (61.5%) had moderate work stress. The following test showed that age and work stress correlation coefficient is 0.419. The interpretation is that age and work stress on nurses were moderately related with a positive direction. It can be understood that the older the nurses, the higher the work stress they experienced.

Crosstabulation between Gender and Work Stress

Table 4 reveals that the majority of nurses were female who experienced moderate work stress (71.4%). The following test results showed that the gender and work stress correlation coefficient is 0.246. The interpretation based on those results is the variable gender was weakly related to work stress. This means gender differences do not have any relationship with nurses' work in this unit.

Table 2. Distribution of Respondents Work Stress in Inpatient Installation Unit at Ploso Regional Public Hospital 2021

Work Stress	Frequency (n)	Percentage (%)
Low	8	24.2
Moderate	20	60.6
High	2	6.1
Very High	3	9.1
Total	33	100.0

Table 3. Crosstabulation between Age and Work Stress of Nurses in Inpatient Installation Unit at Ploso Regional Public Hospital 2021

Age (years)	Work Stress								Total	Spearman Correlation	
	Low		Moderate		High		Very High				
	n	%	n	%	n	%	n	%			
24-30	4	30.8	8	61.5	1	7.7	0	0	13	100.0	0.419
31-37	4	33.3	8	66.7	0	0	0	0	12	100.0	
38-44	0	0	3	100.0	0	0	0	0	3	100.0	
45-52	0	0	1	20.0	1	20.0	3.0	60.0	5	100.0	

Table 4. Crosstabulation between Gender and Work Stress of Nurses in Inpatient Installation Unit at Ploso Regional Public Hospital 2021

Gender	Work Stress								Total	Contingency Coefficient	
	Low		Moderate		High		Very High				
	n	%	n	%	n	%	n	%			
Male	5	26.3	10	52.6	2	10.5	2	10.5	19	100.0	0.246
Female	3	21.4	10	71.4	0	0	1	7.1	14	100.0	

Crosstabulation between Marital Status and Work Stress

Table 5 reveals that most nurses whose marital status is married experienced moderate work stress (66.7%). The correlation test result showed that marital status and work stress had a correlation coefficient of 0.461. The interpretation based on those results is that marital status and work stress was strongly related. It can be deduced that differences in marital status tend to relate to work stress in nurses in this unit.

Crosstabulation between Working Period and Work Stress

Table 6 reveals a significant number of nurses with moderate work stress. Most of them have 5 to 10 years of work (75%). The test results showed that working period and stress work had a correlation coefficient of 0.350. Based on those results, working period and work stress were positively related at a moderate level. The deduction is that a longer working period means a higher tendency of work stress.

Crosstabulation between Personality Type and Work Stress

Table 7 reveals that nurses in this unit mainly have type B personality and experience moderate work stress (63.6%). The correlation test revealed that personality type and work stress had a

Table 5. Crosstabulation between Marital Status and Work Stress of Nurses in Inpatient Installation Unit at Ploso Regional Public Hospital 2021

M a r r i a l Status	W o r k S t r e s s								Total N	Contingency Coefficient	
	Low		Moderate		High		Very High				
	n	%	n	%	n	%	n	%			
Never Married	2	28.6	4	57.1	1	14.3	0	0	7	100.0	0.461
Married	4	16.7	16	66.7	1	4.2	3	12.5	24	100.0	
Divorced	2	100.0	0	0	0	0	0	0	2	100.0	

Table 6. Crosstabulation between Working Period and Work Stress of Nurses in Inpatient Installation Unit at Ploso Regional Public Hospital 2021

W o r k i n g Period	W o r k S t r e s s								Total N	Spearman Correlation	
	Low		Moderate		High		Very High				
	n	%	n	%	n	%	n	%			
< 5 years	4	33.3	7	58.3	1	8.3	0	0	12	100.0	0.350
5 - 10 years	3	25.0	9	75.0	0	0	0	0	12	100.0	
> 10 years	1	11.1	4	44.4	1	11.1	3	33.3	9	100.0	

Table 7. Crosstabulation between Personality Type and Work Stress of Nurses in Inpatient Installation Unit at Ploso Regional Public Hospital 2021

W o r k i n g Period	W o r k S t r e s s								Total N	Contingency Coefficient	
	Low		Moderate		High		Very High				
	n	%	n	%	n	%	n	%			
Type A	3	27.3	7	63.6	0	0	1	9.1	11	100.0	0.179
Type B	5	22.7	13	59.1	2	9.1	2	9.1	22	100.0	

correlation coefficient of 0.179. The interpretation is that personality type and work stress were weak but positively related. It can be understood that the differences between type A and type B personality do not relate to nurses' work stress in this unit.

DISCUSSION

Age and Work Stress

The results above showed variable age was moderately and positively related to work stress. That means the older the nurses, the higher the work stress they tend to experience. Research conducted by Togatorop *et al.* (2021) showed that age and work stress is related in inpatient nurses.

The fact that nurses' age in this unit was moderately related to work stress could be due to a variety of factors. One of them is psychological health. Research by Hatch *et al.* (2018) revealed that as nurses get older, their psychological work abilities can deteriorate as well. This shows that older nurses may be unable to devote sufficient psychological

resources to their job duties, resulting in increased work stress.

Workloads on senior nurses tend to be heavier than younger nurses due to the perception of managerial leadership, which considers older nurses to be more reliable in carrying out their duties, primarily managerial tasks. At Ploso Regional Public Hospital, 3 of the 4 head nurses in the inpatient installation unit were more than 45 years old, who not only obliged to carry out their professional duties toward patients but also have the responsibility to lead the unit, work on additional tasks, as well as to take part in hospital managerial planning and strategy. Research by Winiar *et al.* (2020) also revealed that conflicts that occur out of multiple roles the nurses have at Dharma Nugraha Hospital can lead to work stress, this happens when the implementation of one role complicates the execution of another role.

Habibi and Jefri's (2018) revealed that age and work stress are not related and that respondents aged less than 35 years have a 0.5 times greater chance of experiencing work stress. Research by Yuliani and

Widajati (2021) also suggests that age is not related to stress due to their maturity. The study showed that the older the respondents, the more they understand coping with the possibility of work stress. Ansori and Martiana (2017) argued that the older one gets, the more one's knowledge of oneself increases, knowing how to deal with various conditions, and controlling stress and existing problems so that the stress experienced does not increase. Backing up that argument, Fachruddin, Santoso, and Zakiyah (2019) agreed that young nurses' ages could indicate a limited work experience. With only a little work experience, the nurse is unlikely to be confronted with severe situations that require a quick judgment. As a result, if a severe problem arises, nurses are more likely to panic, generating work stress. These results differences may occur due to several factors, such as the data collection methods and statistics used and the total participants.

Gender and Work Stress

Research by Akbar (2017) revealed that women with dual roles feel pressure from work that interferes with the performance of their family roles. Thus, the greater the dual role conflict in female employees, the greater their tendency to experience work stress. The different results in this study could be because some of the research respondents were unmarried women, so they did not have a dual role. There are differences in the number and the circumstances of respondents that can also affect the results.

Men showed higher expression of glucocorticoid (GR), mineralocorticoid (MR), glucocorticoid:mineralocorticoid (GR:MR), forkhead binding protein prolyl isomerase 5 (FKBP5), and oxytocin receptor in the hypothalamus, while women had higher expression of oxytocin receptor in the prefrontal cortex and arginine vasopressin receptor 1a (AVPR1a) and oxytocin in the hypothalamus (Brydges, Best and Thomas, 2020). These findings by Brydges, Best and Thomas (2020) showed that the women hypothalamic-pituitary-adrenal axis (HPA axis) is more responsive to stress, which could explain why women are more susceptible to stress-related psychopathologies.

Furthermore, the coping differences between men and women can influence their level of stress. Research by Graves *et al.* (2021) showed that women have a higher stress level tend to use emotion-focused approaches. This approach frequently relieves stress for a short period of time,

but rarely leads to resolution. In the long term, this approach can lead to women developing higher and prolonged stress compared to men.

Marital Status and Work Stress

This study showed that marital status was moderately related to work stress. This supports Syafitri, Periantalo and Sari's research (2019) which suggests that the marital status of nurses affects the high work stress they experience. Work and family roles conflict affects nurses' work stress (Ranihusna, Wulansari and Asiari, 2019). This moderate relationship can be caused by family problems that affect their psychology at work. Hendy *et al.* (2021) stated that marital status affects work stress. Married nurses have different family and work roles. When those roles are at odds, a psychological load will be present, therefore the higher stress level.

In nurses with married marital status, 66.7% have moderate work stress while the other 12.5% have very high work stress. In addition, because of the work system implemented, there were shifts, and the time to meet their family was also reduced. The presence of several nurses whose families did not support them because their workplace was too far can also be one of the causes of stress at work for nurses in the inpatient installation unit at Ploso Regional Public Hospital, Jombang. Hossen, Sultana and Begum (2018) revealed that family support is the key to achieving happiness in individuals' family life and working life. Family support increases overall mood, which indirectly helps them to overcome work stress.

Working Period and Work Stress

This study revealed that the working period was positively related to a moderate level of work stress. This means a longer working period is in line with higher work stress in nurses. Nurini, Rahmawati and Nuraeni (2017) research is relevant to this study. It was found that working period and work stress are related. Nurses with longer working periods can feel boredom due to work that is done repeatedly and monotonously.

Inpatient installation unit nurses at Ploso Regional Public Hospital, Jombang, rarely exchange rooms due to the specific competencies required for each room. They work long hours and do not have the opportunity to rotate, causing boredom to emerge as one of the causing factors of work stress. Zulkifli, Rahayu and Akbar (2020) revealed that

work routines that are less varied and monotonous could lead to boredom and burnout. Workers with a longer working period also have greater burdens and responsibilities. This condition can be a stressor if the company does not provide any new stimulus. Ulum, Wahyuni and Ekawati (2018) revealed that the negative influence obtained by workers with a long working period is that they get bored and tired because their work feels monotonous. Jati (2018) explained that workers with a long working period tend to encounter moderate work stress, which is indicated by negative work experiences that appear as discord between colleagues, poor communication, irresponsibility, and boredom.

Manabung, Suoth and Warouw (2019) mentioned that the working period triggers work stress because workers with longer periods tend to be more resistant to the pressures they face at work and better understand their work. This experience will help them overcome problems (stressors) in prevention efforts compared to workers with a shorter working period, who tend to require adjustments to the work environment.

Personality Type and Work Stress

According to the notion of personality types, everyone has a unique personality that distinguishes how they cope with changes and interact with their surrounding environment (Ali, 2019). Primasari *et al.* (2020) discovered that a person's personality could influence the amount of work stress they experience. Based on the results of this study, personality type and work stress in inpatient installation unit nurses were weakly related. Another study by Nuzulawati (2016) also revealed that type A personality and type B personality were not associated with work stress in employees. Type A personality is defined by James and Sidin (2017) as an individual who has more tendency to aggressive behaviors such as impatience and competitiveness, while type B, on the other hand, is known to be more laid-back and uncompetitive. Overall, inpatient installation unit nurses at Ploso Regional Public Hospital mostly have moderate work stress, reaching 63.6% for type A personality and 59.1% for type B personality. This can also be caused by nurses being aware of the shortcomings of each personality in completing a task this way. They can prepare themselves to face various kinds of tasks and responsibilities.

Most of the individual characteristics variables in this study have different results from previous studies. The causes can be varied, including aspects

of research methods such as total participants, data collecting methods, and participants' seriousness and supervision that lead to differences in data reliability and validity. COVID-19 pandemic that exists at the time of study can cause differences in work stress because of the increasing number of patients. Hospital aspects are also differentiating factors because the less effective, efficient, comfortable, and safe the hospital, the great it affects work stress. Other individual characteristics such as type of work and self-esteem that were not examined in this study can indirectly affect nurses' work stress in the inpatient installation unit at Ploso Regional Public Hospital, Jombang.

CONCLUSION

This study concluded that individual characteristics, specifically age, marital status, and working period, had a moderate relationship with work stress in a positive direction. Other aspects of individual characteristics, such as gender and personality type, had a weak relationship with work stress in a positive direction.

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REFERENCES

- Akbar, D. A. (2017) 'Konflik Peran Ganda Karyawan Wanita dan Stres Kerja', *An Nisa'a*, 12(1), pp. 33–48.
- Ali, I. (2019) 'Personality Traits, Individual Innovativeness and Satisfaction with Life', *Journal of Innovation and Knowledge*, 4(1), pp. 38–46.
- Anisah, S. and Mulyono, M. (2020) 'Correlation between Individual Characteristics and Workload toward Occupational Stress of Social Undesirables Facilitators', *The Indonesian Journal of Occupational Safety and Health*, 9(1), pp. 12–20.
- Ansori, R. R. and Martiana, T. (2017) 'Hubungan Faktor Karakteristik Individu Dan Kondisi

- Pekerjaan Terhadap Stres Kerja Pada Perawat Gigi', *The Indonesian Journal of Public Health*, 12(1), pp. 75–84.
- Brydges, N. M., Best, C. and Thomas, K. L. (2020) 'Female HPA axis displays heightened sensitivity to pre-pubertal stress', *Stress*, 23(2), pp. 190–200.
- Central Statistics Office. (2021) Labour Force Survey. Cork: CSO Statistical Publication.
- Couarraze, S. *et al.* (2021) 'The Major Worldwide Stress of Healthcare Professionals during the First Wave of the COVID-19 Pandemic – the International COVISTRESS Survey', *PLoS ONE*, 16(10), p. e0257840.
- Cristenzein, L. R. and Adhi, K. T. (2021) 'Factors Related to Work Stress among Health Office Employees during Covid-19 Pandemic', *The Indonesian Journal Of Occupational Safety and Health*, 10(3), pp. 389-401.
- Dewi, N. F. and Santoso, R. K. (2018) 'The Performance Analysis of Inpatient Installation at Tria Dipa Hospital with Balanced Scorecard, 2013–2015', in *The 2nd International Conference on Vocational Higher Education (ICVHE) 2017*, p. 1566.
- Fachrudin, N., Santoso, W. and Zakiyah, A. (2019) 'the Relationship Between Workload With Work Stress on Nurses in Intensive Installation of Bangil General Hospital Pasuruan District', *International Journal of Nursing and Midwifery Science (IJNMS)*, 2(03), pp. 311–321.
- Gallup (2021) *State of the global workplace: 2021 Report*. Washington D.C: Gallup Inc.
- Graves, B. S. *et al.* (2021) 'Gender Differences in Perceived Stress and Coping among College Students', *PLoS ONE*, 16(8), p. e0255634.
- Habibi, J. and Jefri, J. (2018) 'Analisis Faktor Risiko Stres Kerja Pada Pekerja Di Unit Produksi PT. Borneo Melintang Buana Export', *Journal of Nursing and Public Health*, 6(2), pp. 50–59.
- Hadiansyah, T., Praghlopapati, A. and Aprianto, D. P. (2019) 'Gambaran Stres Kerja Perawat Yang Bekerja di Unit Gawat Darurat', *Jurnal Keperawatan BSI*, 7(2), pp. 50–58.
- Harlan, A. N. (2017) 'Factors Related To Behavior of Using Personal Protector Equipment on Household Laboratory in Phc Hospital Surabaya', *The Indonesian Journal of Occupational Safety and Health*, 6(3), pp. 278–287.
- Hastono, S. P. (2020) *Analisis Data pada Bidang Kesehatan*. Depok: PT. RajaGrafindo.
- Hatch, D. J. *et al.* (2018) 'Age, Burnout and Physical and Psychological Work Ability among Nurses', *Occupational Medicine*, 68(4), pp. 246–254.
- Hatef, F. *et al.* (2020) 'Investigating of Psychological Distress Level and its Association with Demographic Characteristics in Nurses', *Journal of Psychiatric Nursing*, 11(3), pp. 195–200.
- Helmiatin and Susanty, E. (2018) 'Influence of Individual and Organizational Characteristics on Work Stress among Nurses', *Review of Integrative Business and Economics Research*, 7(2), pp. 338–347.
- Hendy, A. *et al.* (2021) 'Predictive Factors Affecting Stress among Nurses Providing Care at COVID-19 Isolation Hospitals at Egypt', *Nursing Open*, 8(1), pp. 498–505.
- Hossen, D. M. M., Fatema Sultana and Begum, M. (2018) 'Work-Family Conflict , Family Support , and Job Stress : Investigating a Three-Way Effects', *Journal of Jessore University of Science and Technology*, 3(2), pp. 111–123.
- Hsu, H. C. (2019) 'Age Differences in Work Stress, Exhaustion, Well-being, and Related Factors from an Ecological Perspective', *International Journal of Environmental Research and Public Health*, 16(1), pp. 1-15.
- James, K. E. and Sidin, J. P. (2017) 'Revisit the Effect of Type a and B Personality, and Its Effect on Job-Related Stress in the Organization', in *Proceedings of International Conference on Economics 2017 (ICE 2017)*, pp. 334–344.
- Jati, L. O. W. S. (2018) *Hubungan Beban Kerja dan Masa Kerja dengan Stres Kerja pada Tenaga Kerja Bagian Weaving PT Kosoema Nanda Putra*. Undergraduate Thesis. Surakarta: Faculty of Health Sciences, Universitas Muhammadiyah Surakarta.
- Lestari, N. D. and Rizkiyah, N. (2021) 'The workplace stress and its related factors among indonesian academic staff', *Open Access Macedonian Journal of Medical Sciences*, 9(T4), pp. 70–76.
- Manabung, A. R., Suoth, L. F. and Warouw, F. (2019) 'Hubungan Antara Masa Kerja Dan Beban Kerja Dengan Stres Kerja Pada Tenaga Kerja Di Pt. Pertamina Tbbm Bitung', *Jurnal Kesmas*, 7(5).
- Nurini, N., Rahmawati, A. and Nuraeni, T. (2017) 'Faktor yang Berhubungan dengan Stres Kerja pada Karyawan di PT. PLN (Persero) JTBT APP Cirebon', *AFIASI (Jurnal Kesehatan Masyarakat)*, 2(2), pp. 60–67.
- Nuzulawati, M. T. (2016) 'Hubungan Antara Kepribadian Tipe A Dengan Stres Kerja Pada

- Guru SMK Muhammadiyah Tegal', *Jurnal Proyeksi*, 11(1), pp. 15–23.
- O*NET (2020) *Work Styles: Stress Tolerance*, National Center for O*NET Development. Washington D.C: National Center for O*NET Development.
- Persatuan Perawat Nasional Indonesia. (2015) 'Survei Stres Kerja Perawat'.
- Philip, O. C., Chibuike, O. P. and Okemefuna, O. M. (2019) 'The Role of Gender and Personality (Type "A" and "B"); on Emotional Stressful Experience', *Annals of Alzheimer's and Dementia Care*, 3(1), pp. 011–019.
- Primasari, D. N. *et al.* (2020) 'Relationships between Personality and Work Environment Type and Work Stress Symptoms in Students of Dental Profession Education (Running Title: Personality, Work Environment Type and Work Stress Symptoms)', *Systematic Reviews in Pharmacy*, 11(3), pp. 912–917.
- Ranihusna, D., Wulansari, N. A. and Karuma Asiari, D. (2019) 'Role Conflict Relationships That Can Increase the Satisfaction of Hospital Nurses', in *International Conference on Economics, Business and Economic Education 2019*, pp. 1231–1241.
- Safe Work Australia. (2021) *Psychosocial health and safety and bullying in Australian workplaces*. Canberra: Australian Safety and Compensation Council.
- Siregar, T.-, Kurniarti, T.- and Widakdo, G.- (2020) 'Nurse Work Stress in Inpatient Room of Pasar Minggu Regional General Hospital, South Jakarta', *Jurnal Keperawatan Soedirman*, 15(3), pp. 192–204.
- Siu, O. L. *et al.* (2020) 'Occupational Stress and Its Economic Cost in Hong Kong: The Role of Positive Emotions', *International Journal of Environmental Research and Public Health*, 17(22), pp. 1–22.
- Solanki, S. and Mandaviya, M. (2021) 'Does Gender Matter? Job Stress, Work-Life Balance, Health and Job Satisfaction among University Teachers in India', *Journal of International Women's Studies*, 22(7), pp. 121–134.
- Syafitri, A., Periantalo, J. and Sari, R. E. (2019) 'Hubungan Persepsi Kondisi Lingkungan Kerja dan Beban Kerja dengan Stres Kerja Perawat (Studi Pada Perawat Rumah Sakit Jiwa Daerah Provinsi Jambi)', *Jurnal Psikologi Jambi*, 5(2), pp. 1–12.
- Tanjung, M. and Hutagalung, H. (2018) 'Pengaruh Faktor Stres Kerja Terhadap Produktivitas Kerja Karyawan Pada PT. Aido Mini Plaza Sibolga', *Jesya (Jurnal Ekonomi & Ekonomi Syariah)*, 1(1), pp. 77–86.
- Togatorop, A. *et al.* (2021) 'Faktor-Faktor yang Berhubungan dengan Tingkat Stres pada Perawat Rawat Inap di Rumah Sakit Santa Elisabeth Medan', *Journal of Healthcare Technology and Medicine*, 7(2), pp. 1409–1423.
- Ulum, M. B., Wahyuni, I. and Ekawati, E. (2018) 'Faktor-Faktor Yang Berhubungan Dengan Stres Kerja Pada Pengemudi Bus Rapid Transit (Brt) Koridor Ii Kota Semarang', *Jurnal Kesehatan Masyarakat (e-Journal)*, 6(5), pp. 594–602.
- Universari, N. and Harsono, M. (2021) 'Antecedents and Consequences of Work Stress Behavior', *Economics and Business Solutions Journal*, 5(1), pp. 46–63.
- Winiar, W. *et al.* (2020) 'How Job Stress Can Improve Job Satisfaction Nurse', in *Proceedings of the 1st International Conference on Recent Innovations (ICRI 2018)*, pp. 2802–2807.
- Yuliani, S. D. and Widajati, N. (2021) 'Correlation of Individual Factors and Subjective Workload with Work Stress on Spinning Workers', *The Indonesian Journal Of Occupational Safety and Health*, 10(1), pp. 117–127.
- Zulkifli, Z., Rahayu, S. T. and Akbar, S. A. (2020) 'Hubungan Usia, Masa Kerja dan Beban Kerja Dengan Stres Kerja Pada Karyawan Service Well Company PT. ELNUSA TBK Wilayah Muara Badak', *KESMAS UWIGAMA: Jurnal Kesehatan Masyarakat*, 5(1), pp. 46–61.