

The Correlation of Length of Work and Mental Workload with Work Stress at University Lecturers

Kenia Bella Christy¹, Noeroel Widajati¹

¹Department of Occupational Health and Safety, Public Health Faculty, Airlangga University, Surabaya,

²Department of Occupational Health and Safety, Public Health Faculty, Airlangga University Campus C, Mulyorejo Street, Surabaya, 60115

Abstract

The main role of lecturers at Tri Dharma University, namely education, research, and community service. That makes them have certain responsibilities which if it lasts a long time will cause stress. This study aims to determine the correlation between work time and mental workload with work stress on college lecturers in Surabaya. This descriptive study was conducted on 43 active lecturers who teach at a university in Surabaya. The results of this study were analyzed to determine the lecturer's length of work, the mental workload of lecturers with categories from NASA TLX and their correlation with work stress. The results stated that 22 people had worked for more than 20 years, as many as 25 people had very high mental workloads, and 30 people with mild stress. Most of the lecturers already have a lot of experience and a large number of task demands but are still able to deal with everything well so that work stress does not arise. The correlation value between the length of work and work stress is 0.461, and the correlation value between mental workload and work stress is 0.808. This value states there is no correlation between the length of work and mental workload with work stress. Recommendations are given to universities, lecturers and all those involved in efforts to maintain the atmosphere and work culture to improve comfort for all parties, such as adding green areas in the workspace, providing remuneration for lecturers who excel, and maintaining communication between lecturers.

Keywords : *length of work, mental workload, work stress, lecturer.*

Introduction

Work stress is a physical and emotional response related to the work, resources, and needs of workers¹. All types of work, both related to physical and mental competencies that have the opportunity to cause work stress. The existence of aspirations and dissatisfaction at work can also cause work stress⁹.

Lecturers are professional educators and scientists with the main task of transforming, developing and

disseminating science, technology, and arts through education, research and community service⁸. Lecturers have three main tasks (Tri Dharma University), namely education, research and also community service as their basis and obligation to carry out their daily activities. The lecturers' main tasks and the burden of positions on several lecturers causes high work demands that must be completed in accordance with predetermined targets which in turn can cause work stress. There are research results that state that there is a sufficient and direct correlation between workload and work stress⁴.

The length of work is one of the factors characteristic of individuals describing their abilities and experiences in dealing with work problems and can affect the existence of work stress because it provides a different stress response to workers. It has a negative effect if it causes boredom due to monotonous activities, and is positive when it is able to improve its work experience⁴. Long

Corresponding author:

Noeroel Widajati

Department of Occupational Health and Safety, Public Health Faculty, Airlangga University Campus C, Mulyorejo Street, Surabaya, 60115
Indonesia Tel: +62 85 730 961 962
Email: noeroel.widajati@fkm.unair.ac.id

working periods and limited work environments can cause boredom and in the end can cause work stress¹⁰. There are research results that state that the longer the working period, the lower the perceived stress¹². There is also a conclusion that there is no correlation between the length of work with work stress².

The purpose of this study was to analyze the correlation between the length of work and mental workload with work stress on the lecturers of one of the faculties of a university in Surabaya.

Material and Method

This research is a descriptive study to find out the correlation between the length of work and mental workload with work stress on university lecturers in Surabaya. This study uses a workforce analysis approach based on individual data and mental workload using the NASA TLX method. The sample in this study were 43 lecturers with several criteria including active lecturers, were in a healthy condition and were not in the period of consuming certain drugs.

The research design was to collect preliminary data and the number of lecturers. The next step is primary data collection in the form of individual identity, mental workload, and work stress. secondary data needed is a description of the location of the study. This study uses more primary data obtained through questionnaires as research instruments provided to each lecturer. The data collection process takes 3 months.

Data analysis was performed using the Spearman test to find out the correlation between the length of work and mental workload with work stress on university lecturers in Surabaya.

Findings

Lecturer Length of Work Distribution

Table 1 shows that most of the lecturers are 22 people (51.2% of 43 lecturers) have a service life of >20 years. While other lecturers have varied working periods ranging from <6 years to 20 years. There are 6 people (14%) with a length of work less than 6 years, 3 people (7%) with tenure of 6-10 years, 7 people (16.3%) with tenure of 11-15 years, and 5 people (11.6%) with a service life of 16-20 years. This means that most of the lecturers in one of the universities in Surabaya are senior lecturers who have a lot of relevant experience in their fields.

Table 1. Lecturer Characteristics by Length of Work at the University in Surabaya in 2019

Length of Work	The Result	
	N	%
< 6 Years	6	14.0
6 – 10 Years	3	7.0
11 – 15 Years	7	16.3
16 – 20 Years	5	11.6
>20 Years	22	51.2
Total	43	100

Lecturer Mental Workload Distribution

Table 2. Lecturer Characteristics Based on Mental Workload at the University in Surabaya in 2019

Mental Workload	The Result	
	N	%
Rather High	1	2.3
High	17	39.5
Very High	25	58.1
Total	43	100

Table 2 shows that most of the lecturers, 25 people (58.1%) were in the very high workload category, as many as 17 people or around 39.5% with high workloads and 1 person who had rather high workloads. It can be concluded that the workload of university lecturers in Surabaya is dominant in the very high workload category.

Lecturer Work Stress Distribution

Based on table 3, it can be concluded that most of the lecturers are 30 people or around 69.8% experience work stress in the mild category, 12 people experience work stress in the moderate category and 1 lecturer experiences severe work stress. It shows that the majority of university lecturers in Surabaya experience mild to moderate work stress.

Table 3. Lecturer Characteristics Based on Work Stress at the University in Surabaya in 2019

Work Stress	The Result	
	N	%
Mild	30	69.8
Moderate	12	27.9
Severe	1	2.3
Total	43	100

Cross-tabulation Length of Work and Mental Workload with Work Stress

The Correlation between Length of Work and Work Stress

Table 4. Cross-Tabulation of Length of Work and Work Stress of Lecturer at the University in Surabaya in 2019

Length of Work	Work Stress						Total
	Mild		Moderate		Severe		
	N	%	N	%	N	%	
<6 Years	2	33.3	4	66.7	0	0	6
6 – 10 Years	3	100	0	0	0	0	3
11 – 15 Years	6	85.7	1	14.3	0	0	7
16 – 20 Years	3	60	1	20	1	20	5
>20 Years	16	72.7	6	27.3	0	0	22

Table 4 show that most of the lecturers with a very long length of work have relatively mild levels of work stress. There are lecturers with a working period of >20 years, 16 of whom experience mild work stress and 6 others experience moderate work stress. In addition, there are lecturers with heavy work stress who have worked for 16-20 years. The variation in the level of work stress on lecturers with different lengths of work shows that one of the causes is the adaptability of the lecturer. The value obtained from the statistical test results is 0.461 which is greater than 0.05 (α) concludes that there is no correlation between lengths of work with work stress on lecturers.

The Correlation between Mental Workload and Work Stress

Table 5. Cross Tabulation of Mental Workload and Work Stress of Lecturer at the University in Surabaya in 2019

Mental Workload	Work Stress						Total
	Mild		Moderate		Severe		
	N	%	N	%	N	%	
Rather High	1	100	0	0	0	0	1
High	12	70.6	4	23.5	1	5.9	17
Very High	17	68	8	32	0	0	25

Table 5 show that most lecturers or as many as 17 people with very high mental workloads are experiencing mild work stress. Also, there are 12 people with high mental workloads who are experience mild work stress and 1 person with a rather high burden also experiences mild stress.

The significant value obtained is 0.808 which means there is no correlation between mental workload with work stress felt by the lecturer. The heavy workload does not always have a high-stress impact on lecturers.

Discussion

Length of Work

The length of work is individual characteristic that illustrates the length of time the workforce is counted from when it was first entered until now it still works⁶. It is related to experience and understanding because if someone has worked for a long time, the worker will be able to adapt to his work³. The length of work will also improve workers' psychological well-being because they tend to have a mutual need for one another³. The positive effect of a long work period if the worker can improve his experience at work, and becomes a negative effect if the length of work can cause boredom to workers⁴. A long work period with a limited work environment will make workers feel bored quickly because of work activities that tend to be monotonous¹⁰.

The length of work is divided into several categories, namely <6 years, 6-10 years, 11-15 years, 16-20 years, and >20 years⁷. Table 1 show that most of the lecturers, namely 22 people (51.2% of 43 lecturers) have a working period of >20 years. While other lecturers have varied working periods ranging from less than 6 years to 20 years. This means that most of the lecturers in one of the universities in Surabaya are senior lecturers who have a lot of relevant experience in their fields and have adapted to their work.

Mental Workload

Work is a burden for workers that can be a physical, psychological and social burden to meet and satisfy the needs for survival⁵. The workload is the burden experienced by workers due to the work done and has a quite dominant influence on the performance of human resources and can cause negative effects on the safety

and health of workers¹¹. The weight of the workload can be assessed from the amount of burden with the willingness of time, monotonous activities, fluctuations in workload and demands that overlapping work¹⁰. Workload analysis uses the NASA TLX to measure mental workload measured in 6 dimensions, including mental demands, physical demands, time demands, performance, business levels, and frustration levels.

Table 2 shows that most of the lecturers (58.1%) are in the very high workload. These results indicate that the mental workload on university lecturers in Surabaya is predominantly in the very high workload. The results of the recapitulation of all scores, the workload of lecturers with high scores are in the dimensions of effort, temporal demand, and own performance. The lowest score is in the physical demand dimension. So, the mental workload on lecturers is more focused on the existence of their business factors in carrying out their main activities within the allotted time and still providing the best performance to make their students become superior human resources and able to compete in the world of work.

Work Stress

Work stress occurs because the workload is too much or too little and will disrupt the health of workers both physically and psychologically¹². Physical health disorders such as headaches, gastrointestinal, etc. While psychological health is mad easily, decreased performance and productivity to cause work accidents. Work stress is measured using a questionnaire that has been submitted for validity and reliability with approval based on effects on individuals including physiological, psychological conditions, changing habits, and changes in conditions in the organization¹³.

Table 3 shows that most of the lecturers, as many as 30 people experienced work stress in the mild category. The overall recapitulation results state that the lowest average score on stress reactions in psychological reactions and the highest average values in organizational relations. This means that the problem of stress in the faculty lot of influence on the psychological reactions such as a decrease in the ability to remember, hard to concentrate, irritability, and less impact on organizational correlations in the workplace.

Correlation between Length of Work and Mental Workload with Work Stress

Older/seniors workers will have the ability and better understanding of their work compared to new/juniors workers because they usually do not have much experience and are still adapting to work so often feel stressed at work and cause stress. As stated earlier, the long work period and the limited working environment lead to worker boredom which can ultimately lead to work stress¹⁰. Table 5 shows that the majority of lecturers with very long tenure have relatively mild levels of work stress. There are lecturers with a working period of more than 20 years, 16 of whom experience mild work stress.

The significance value of the statistical test that is 0.461 means that there is no correlation between work period with work stress on the lecturer. These results state that both new lecturers and old lecturers have the same opportunity to experience work stress. Other results show that only a small proportion of lecturers with more than 5 years of work experience severe stress because they can adapt to their work. The results of his analysis stated that workers who have not worked long ago are likely to experience work stress because they have to work and learn/adapt many things¹⁰.

Workload that is too little/too much will cause problems such as boredom, irritability, decreased morale, bad relations between workers, increased mistakes, doubtful at work, decreased ability to remember and so on¹⁰. Table 6 presents the results of the study which stated that the majority of lecturers as many as 17 people with very high mental workload experienced mild work stress. A small proportion of other lecturers with high to high workloads experience moderate to severe work stress.

The significant value is 0.808, meaning that there is no correlation between mental workload with work stress. So, the weight of the workload does not always have a high-stress impact on lecturers. In contrast to the results of the previous study, some state that there is a strong and unidirectional correlation between mental workloads with work stress which means that the higher the workload the more work stress¹². The work demands of lecturers in the form of material preparation, conducting research, assisting students in community service activities, and some job assignments. Mismatching physical capacity with so many work demands that can lead to work stress.

Conclusion

The measurement results show that the majority of university lecturers in Surabaya have worked and carried out their profession for more than 20 years, with mental workloads in the very high category and experiencing mild stress. Statistical test results prove that there is no correlation between the length of work and mental workload with work stress experienced by lecturers. So, lecturers with long work periods and high mental workloads do not necessarily experience high work stress. Add green areas in the workspace, provide remuneration for outstanding lecturers, and maintain communication between lecturers to improve work comfort.

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Ethical Clearance: This research was discussed by the Ethics Committee of the Faculty of Dentistry, Airlangga University.

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