

Factors Affecting Job Stress in Construction Workers

Trie Islamy Pangestu Astid Putera¹, Tri Martiana²

¹Regional General Hospital Dr. Soetomo

Jl. Mayjen Prof. Dr. Moestopo No.6-8, Airlangga, Gubeng, Surabaya, East Java 60286, Indonesia

²Department of Occupational Safety and Health, Faculty of Public Health, Universitas Airlangga, Indonesia
Campus C Mulyorejo, Surabaya, East java 60115, Indonesia

ABSTRACT

Introduction: In the SDG Point 3, which is to “Ensure Healthy and Promote Wellbeing for all ages”, it is hoped that the workforce is not only free from illnesses but also free from psychological disorders, one of which is job stress. Job stress gives negative impacts to workers jobs, especially in dealing with situations and demands that exceed the workers’ ability to cope. Job stress arises because workers’ knowledge of problem solving is not in accordance with job demands in the organization or company. Job stress can degrade workers’ ability to solve problems. In fact, workers’ ability to cope with job stress is not same. Job stress may occur in construction workers whose jobs are monotonous. This study aimed to analyze factors that affect job stress in construction workers. Internal factors included exercise habits and social support. External factors included job demands, work period, and non-work activities. **Methods:** This was observational study with a cross-sectional approach, held in a construction company. The number of samples of this study was 55 workers. This study used the National Institute Occupational Safety and Health (NIOSH) Generic Job Stress Questionnaire instrument. The variables in this study were internal factors, including exercise habits and social support. External factors included job demands, work period and non-work activities. The data were analyzed statistically with the Ordinal Regression Test. **Results:** Internal factor that had a significant effect was exercise habits ($p=0.014$). Meanwhile, external factor that had a significant effect was job demands ($p=0.045$). **Conclusion:** Exercise habits can affect the ability of workers to deal with job stress. Moreover, the job demand factor can affect the job stress.

Keywords: construction workers, job stress, SDG Point 3

Corresponding Author:

Tri Martiana

Email: tri.martiana@fkm.unair.ac.id

Telephone: +6282334850640

INTRODUCTION

Occupational health is one aspect that must be considered because it is closely related to work factors and the work environment. In the work sector, it can be in the form of type of work, work demands, job responsibilities, working hours, etc. In the work environment sector, it can be in the form of physical, chemical, biological, physiological and psychological environments. These two sectors directly affect the productivity of workers in carrying out their daily work (Tarwaka, 2014).

In an increasingly developing era, the problem of psychosocial disorders is a special concern that the industrial sector must pay attention to. This relates to workers' complaints about their health, both psychologically and physiologically. Workers who experience job stress can experience fatigue and even depression (Mücke *et al.*, 2018).

Job stress is a health disorder caused by a mismatch between the workload and the ability of workers to cope with stress in doing work. Job stress is a form of feeling where workers feel pressured at work. Job stress can also be interpreted as a condition where workers feel that there is tension at work so that they are not in sync between physical and psychological environments (Vanchapo, 2019).

Job stress is a situation that has a negative influence as a result of a job, especially in dealing with situations and demands that exceed the ability of workers to cope (Troesch and Bauer, 2017) although in another concept stress can produce a positive thing, which is usually called eustress. However, in the industrial world, the stress that is often experienced at work tends to be negative stress or often called distress.

Stress can reduce workers’ ability to solve a problem. The amount of competition, job demands and challenges at work can be stressors for workers. When a person gets a severe stressor that exceeds his ability to deal with a stressor, it can cause health problems such as headaches, irritability,

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and difficulty in sleeping (Andalasari and Berbudi, 2018).

High levels of work stress can cause workers to experience depression. Complaints that are often experienced include loss of energy, decreased confidence and concentration, and even sleep disturbance (Hantrakul, Wangsomboonsiri and Sriphrapradang, 2020). These health problems can occur when workers experience pressure at work, especially feelings of excessive worry that can interfere with the psychology of workers (Mitchell *et al.*, 2011).

Types of work that are often reported to trigger job stress on workers include the fields of health, construction industry, education, transportation, and finance. PT. Swadaya Graha JTB Bojonegoro is an industry engaged in the construction service with a project currently collaborating with PT. PLN (Persero). According to data from The American Institute of Stress, 61% of people in most American countries experience stress that comes from work (Karina, Zulkifli and Novrikasari, 2021).

Based on data from the World Health Organization (WHO), 8% of diseases in some countries are caused by workers experiencing depression at work. 35% of stress caused by work is fatal for workers and even causes the loss of working days. There are 14,000 workers who die every year due to work stress experienced in the workplace (Putri and Tualeka, 2014).

The implementation of construction projects consists of complex processes including limited time, large cost, high quality demand and obligation to pay attention to safety and problems in the surrounding environment. All of these conditions are considered the biggest challenges for all construction companies (Enshassi, El-Rayyes and Alkilani, 2015).

Based on data of a report from the International Labor Organization (ILO) in 2000, there were several countries such as Germany, England, Poland and the United States which stated that the occurrence of job stress in the workplace could lead to severe depression and increased cases of mental disorders. In some cases workers may lose their jobs or be hospitalized. Construction workers have a fairly high workload because they have to complete their work projects in a short time. Workers even have to work overtime even on holidays to complete the projects. This can make workers experience job stress (Widyastuti, 2018).

The health issues contained in the SDGs are integrated in Point 3, namely ensuring a healthy life and promoting well-being for all people at all ages. The focus of all health sector development targets in order to achieve the realization of these goals includes all policy makers, both at the central and local governments, and even in the business world, including construction companies.

From the problem above, the purpose of this study is to investigate what factors affect work stress including exercise habits, work demand and social support. The purpose of this study is related to SDG Point 3, namely good health and well-being where overcoming job stress in the workplace can improve the health and welfare of workers.

METHOD

This research was an observational study conducted to determine several factors that influence work stress on construction workers including exercise habits, job demands and social support. The data were presented descriptively based on the survey results. Sample size in this study was 55 construction workers. This study used a total population sampling technique. Percentage of error was 5% based on standard error.

In this research, data and information were obtained from 2 sources, namely primary data and secondary data. These data were used to explain specifically the influence of exercise habits, job demands and social support on job stress. The independent variables in this study included exercise habits, job demands and social support. Meanwhile, the dependent variable included work stress. However, there were several other factors that might affect the incidence of job stress but were not measured in this research. Other factors included age, gender, physical and mental workload, history of workers' illness, and physical work environment.

Primary data were obtained by distributing online questionnaires through a Google Forms to all workers because the sampling technique used the total population. The questionnaires given had been structured and also equipped with a respondent page. Secondary data were obtained from various sources such as scientific articles, books, reports and other scientific sources. A field study research approach was also conducted to determine the factors that influence the occurrence of job stress in construction workers including sports habits, job demands and

social support. Data were collected on November 5-10, 2020.

The measuring instrument of the questionnaire in this study was taken from the National Institute Occupational Safety and Health (NIOSH) Generic Job Stress Questionnaire. The scale on the questionnaire used the Linkert scale. On the variables of job demands, social support and job stress, the scales given were never, rarely, sometimes, often and very often. As for the exercise habit variable, the scales given were yes and no. The data obtained were then processed statistically using a computer application with the Ordinal Regression test to determine the effects between variables.

This research has conducted an ethical clearance test at the Faculty of Dental Medicine, Health Research Ethical Clearance Commission, Universitas Airlangga. The certificate of ethics was issued on October 7, 2020 with Number: 448/HRECC.FODM/X/2020.

RESULTS

Overview and Characteristics of Workers

The company engaged in the construction sector is located in East Java Province, and this company covers several sectors such as property, EPC, operation maintenance and steel fabrication. The characteristics of workers in this study included age

Table 1. Distribution of the Frequency of Workers at Construction Company in 2020

Respondent characteristics	Category	Frequency	Percentage (%)
Age	12-25 year	6	10
	26-45 year	35	64
	46-65 year	14	26
Total		55	100
Sex	Male	50	91
	Female	5	9
Total		55	100

and gender. The data on the frequency distribution of the characteristics of workers are as follows.

From Table 1, it can be seen that the characteristics of workers based on the age of workers varied with workers in the age group of 12-25 years old accounted for 10%; those in the age group of 26-45 years old accounted for 64%, which was the biggest percentage; while those in the age group of 46-65 years old accounted for 26%. Moreover, the characteristics of workers by sex indicated that the majority of workers were men at 91%, while women only stood at 9%.

Based on Table 2, it can be seen that workers who had exercise habits mostly experienced moderate job stress, which was 27.28%. Meanwhile, for workers who did not have exercise habits, most of them experienced moderate job stress, which was 30.91%. From the results of the statistical analysis test, a significance value of 0.014 was obtained, which means that there was an influence between exercise habits and job stress.

Based on Table 3, it can be seen that workers who had low job demands only experienced low job stress, which was 1.81%. Workers who had moderate job demands mostly experienced moderate job stress, which was 23.64%. Meanwhile, workers who had high job demands mostly experienced moderate job stress, which was 34.54%. From the results of the statistical analysis test, a significance value of 0.045 was obtained, which means that there was an influence between job demand and job stress.

Based on Table 4, it can be seen that workers who had low social support mostly experienced moderate to high job stress, which was 3.64%. Workers who had moderate social support mostly experienced moderate job stress, which was 21.82%. Meanwhile, workers who had high social support mostly experienced moderate job stress, which was 32.73%. From the statistical test results, a significance value of 0.123 was obtained, which mean that there was no influence between social support and job stress.

Table 2. Effect Between Exercise Habit of Job Stress at Construction Company in 2020

Exercise Habit	Job stress						Sig.	Description
	Low		Moderate		High			
	n	%	n	%	n	%		
Yes	2	3.64	15	27.28	5	9.01	0.014	Take effect
No	13	23.64	17	30.91	3	5.45		
Total	15		32		8			

Table 3. The Effect Between Job Demand of Job Stress at Construction Company in 2020

J o b Demand	J o b s t r e s s						Sig.	Description
	L o w		M o d e r a t e		H i g h			
	n	%	n	%	n	%		
Low	1	1.81	0	0	0	0	0.045	Take effect
Moderate	7	12.73	13	23.64	0	0		
High	7	12.73	19	34.54	8	14.54		
Total	15		32		8			

Table 4. The Effect Between Social Support of Job Stress at Construction Company in 2020

S o c i a l support	J o b s t r e s s						Sig.	Description
	L o w		M o d e r a t e		H i g h			
	n	%	n	%	n	%		
Low	1	1.81	2	3.64	2	3.64	0.123	No effect
Moderate	2	3.64	12	21.82	2	3.64		
High	12	21.82	18	32.73	4	7.27		
Total	15		32		8			

Table 5. The Effect Between Work Period of Job Stress at Construction Company in 2020

W o r k Period	J o b s t r e s s						Sig.	Description
	L o w		M o d e r a t e		H i g h			
	n	%	n	%	n	%		
< 5 year	6	10.91	14	25.45	7	12.73	0.073	No effect
≥ 5 year	9	16.36	18	32.73	1	1.81		
Total	15		32		8			

Table 6. The Effect Between Non-Work Activities of Job Stress at Construction Company in 2020

N o n - w o r k Activities	J o b s t r e s s						Sig.	Description
	L o w		M o d e r a t e		H i g h			
	n	%	n	%	n	%		
Low	6	10.91	8	14.54	5	9.01	0.715	No effect
Moderate	9	16.36	22	40	3	5.45		
High	0	0	2	3.64	0	0		
Total	15		32		8			

Based on Table 5, it can be seen that most of the workers who had a work period of < 5 years experienced moderate job stress, which was equal to 25.45%. Meanwhile, workers who had a work period of 5 years mostly experienced moderate job stress, which was 32.73%. From the results of statistical tests, a significance value of 0.073 was obtained, which means that there was no influence between the work period and job stress.

Based on Table 6, it can be seen that the majority of workers who had low non-work activities experienced moderate job stress, which was 14.54%.

Workers who had non-work activities of moderate work mostly had moderate job stress, which was 40%. Meanwhile, workers who had high non-work activities of work mostly had moderate job stress, which was 3.64%. From the statistical test results, a significance value of 0.715 was obtained, which means that there was no influence between non-work activities and job stress.

DISCUSSION

Respondent Characteristic

Based on Table 1 most of the construction workers are aged 26-45 years. The age of 26-45 years is a productive age for workers. However, along with increasing age, there is a decrease in physical productivity. Worker stress conditions can affect worker productivity. At productive age, workers tend to experience boredom at work due to monotonous work every day. This can reduce work productivity. Workers who experience work stress are not able to work optimally in completing their work (Zuhroh, Aini and Aini, 2019).

Job stress can occur in both male and female workers. The level of work stress in women has a higher level of opportunity. This is because female workers, especially those with married status, have other responsibilities outside of work, such as taking care of children and so on (Habibi and Jefri, 2018).

Job stress can arise if there is a stressor. The impact of work stress can be influenced by gender, type of work and position being borne. In this construction company, the majority of workers are workers who are classified as productive age so that the level of problems faced in their daily lives is complex. Leaders need to cope with and manage stress on workers to have a positive effect on workers (Rahmawati, Prihatini and Krishnabudi, 2016).

Monotonous work routines and high work demands can be a cause of job stress or stressor for senior workers. Workers who already have old age and long working periods tend to quickly experience fatigue and stress (Rudyarti, 2020).

Older workers also tend to have less health conditions than younger workers, increasing their potential to experience job stress. The sensitivity of the company in managing work activities based on age can be one of the efforts to deal with stress at work (Zulkifli, Rahayu, and Akbar, 2019).

Exercise Habits

Based on Table 2 the result obtained a significance value of 0.014 which means that there is an influence between exercise habit and job stress. Research that states that workers who are physically fitter experience less stress than respondents who have less fit physical condition. Repetitive sport activities contribute to the normalization of a healthy state that allows a person to increase his homeostasis (Mücke *et al.*, 2018). Physical activity can benefit several health factors such as increased fitness

and feelings of pleasure. These factors can help the body to avoid diseases such as depression. In the older adults, physical activity can be done by paying attention to the duration and type of exercise (Gallagher, Clarke and Loveland-Cherry, 2018).

Most of the workers activities in this construction company are out door with quite high mobility, so that indirectly most of the workers are already doing routine physical activities every day. In some country, regular exercise is recommended to prevent depression. This is evidenced by the significant difference between clinically depressed patient who were given the intervention of routine exercise activities and those who were not given the intervention (Gerber *et al.*, 2016).

Physical activity has an impact on functional health status and depressive symptoms. Several factors that can increase the risk of work stress include poor health conditions, a history of chronic illness, and history of depression (Deng and Paul, 2018). Physical activity has many variations, especially if you live in an urban area. The use of public spaces makes it easier for someone to exercise. This can help workers improve their performance and stamina. Increasing the ability of workers can reduce stress on workers (Day, 2018).

Human resources who are not experienced in their field can experience fatigue more quickly because they have not adapted to their environment. Increased psychological stress of workers due to physical fatigue can affect the decline in decision-making abilities, poor work quality or performance and communication between workers can also be disrupted (Scanlan and Still, 2020).

Job Demand

Based on Table 3 The result obtained a significance of 0.045 where there is an influence between job demand on job stress. Similar research states that the occurrence of fatigue in workers has a relationship with the incidence of work accidents. Job demand require some physical and mental effort to produce an activity or job, if the job demand are too large it can cause a decrease in job capacity or fatigue (Smith and Smith, 2017). Psychology identify and assess that task demand have the potential to significantly contribute to job stress and occupational health and safety in general. The incidence of work stress is associated with a decrease in the quality of sleep of workers. Lack of sleep quality can result in emotional exhaustion in workers (Gillet *et al.*, 2020).

Workers who experience high work stress tend to have fatigue more easily than those who experience low job stress because psychologically and physically stress can affect worker performance. Thing that can contribute to the occurrence of work stress in workers are work demands where workers are required to achieve the goal of the organization so that the performance of workers must be as much as possible (García-Herrero *et al.*, 2016). The project owned by this construction company is quite large with a fairly short time so that most workers, especially those in the field, have to work overtime.

Employee need to have confidence in carrying out their duty. Because self-confidence can lead to feelings of satisfaction with their work so that workers feel happy (Troesch and Bauer, 2017). Workers who can condition themselves and are able to deal with stress well and good social networks at work can also prevent stress. This is in accordance with other studies which state that good social conditions can improve the health conditions of workers (de Oliveira *et al.*, 2019).

The large variety types of work that must be done by workers is also included in the demands of the job. The worker has to sort out some of his thoughts to get the job done. Moreover, the discipline applied by the company can also affect the performance of workers. Some of these things must be well organized so that workers do not easily experience fatigue and stress (Skaalvik and Skaalvik, 2018).

Social Support

Support is an emotional contribution including a comfortable feel. Feeling value or help from other. Workers who have good social support are expected to minimize the incidence of work stress (Janice and Wijaya, 2017). In this study, social support has no effect on work stress. This may occur as a result of social support that workers can't be able to reduce the stress they experience. Other factors that can cause high job stress are interpersonal conflict, lack of opportunity to express opinion (Karina, 2014). The social support received by workers is not enough to be able to reduce the work stress they experience. This can happen because every worker has responsibility for his work and workers in this construction company are divided into 2 parts, namely the administrative section and the technical section.

Social support is a process of interaction that occur in the organization. Social support can occur when people in the organization relate to each other. High social support can occur in stable interaction compare to momentary interaction. The social bond that occur require mutual trust to be able to solve existing problem (Ray and Miller, 2016).

In this study, the social support variable studied was social support from the leadership to the workers. While job stress which is influence by social support from the leadership to workers is not the only factor that workers experience job stress. Social support can be in the form of appreciation, empathy and information (Caesaria, 2010).

Work Period

In this study, the period of work has no effect to job stress. Workers who have worked for more than 5 years have the potential to experience burnout at work compare to new workers (Karina, 2014). However, the work period cannot be used as a determinant of workers being able to avoid job stress because workers who have long tenures will feel accustomed to doing work. The experience of workers who have long work period can also help workers in carrying out their work so they tend not to feel stress (Samura and Sitompul, 2020).

At the age of 41-50 years is a mature age in thinking or addressing a problem. Workers who are already working will have more mature thinking and are more logical in dealing with situations. Conditions like this can help workers to be able to control their emotions in themselves (Farrastama, Asmony and Hermanto, 2019).

Workers who have a long and new work period, both of this condition can be a trigger for work stress. The existence of an excessive workload on workers affects workers in overcoming it. The more workers have a long work period, the more heavy the responsibilities given by the leadership. Meanwhile, new workers need time to adapt to their work environment. Monotonous work routines can lead to burnout (Ibrahim, Amansyah and Yahya, 2016).

Non-Work Activities

One of the causes of job stress in workers is non-work activities. Types of activities outside of work very much include marital status, social life, and even financial problem. Non-work activities that are not managed properly can exacerbate job stress

experienced by workers (Karina, 2014). In this study, non-work activities have no effect on the occurrence of job stress. This can occur due to the low level of activity outside of work owned by workers (Lady, Susihono and Muslihati, 2017).

The factors of non-work activities experienced by construction workers are low, so it is less likely for workers to experience job stress that comes from outside the organization. This is in line with research by Ariyanto *et al.*, (2015) which states that small non-work activities do not affect the occurrence of job stress.

Occupational factors such as the amount of workload are more likely to cause work stress than factors outside of work such as activities outside of work. Company leader also need to pay attention to factor outside of this work so as not to hamper the work cycle due to no-work activities (Karina, 2014).

Doing activities outside of work such as hobbies is an effective tool to get a sense of pleasure after being bored at work. However, workers must also be skilled in managing time to divide work activities and do hobbies so that they do not become an additional burden (Garrick *et al.*, 2018).

Emotional intelligence of workers is useful for monitoring their own feelings and emotions. So that workers are able to distinguish emotional conditions at work and outside the workplace. Good interpersonal relations and problem solving must be possessed by every worker to improve emotional intelligence skills (Wan, Downey and Stough, 2014).

CONCLUSION

Exercise habits can affect the ability of workers to deal with work stress. Job demands factors can affect work stress. The existence of efforts to increase the capacity of workers with a healthy lifestyle and exercise habits can help workers meet the demands of the company.

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