The Differences of Individual Characteristics and Working Environment That Influence Job Stress on Female and Male Workers at Pt. X Sidoarjo (Using Gender Prespective)

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Abstract

Job stress can be defined as a dangerous physical and emotional response that occurs when work requirements are not matched with our own ability, resources, or needs of the workers. Job stress needs special attention by the company because it relates a worker individual's health and affects operational continuity of the company's production. The risk factors as the cause of job stress on female and male workers in PT. X are related to the characteristics and the perceptions of a work environment. The purpose of this research is to examine the individual characteristics and perceptions of the working environment that affects the incidence of job stress on female and male workers.

This type of research is observational by designing cross-sectional research with the number of respondents as many as 50 people. The independent variables in this study included age, education, employment, marital status, noise, lighting as well as temperature. Dependent variable was job stress on female and male workers in PT. X.

Female workers at PT. X experienced 32% of job stress and 20% of male workers. The results of logistic regression analysis obtains a significant influence of working time with job stress (P=0.027) as well as noise with job stress (P=0.017) on female workers. Male workers are significant to the job stress namely age (P=0.011), working period (P=0.030) as well as lighting (P=0.005). Advice for job-stress workers to take a leave, using personal protective equipment to reduce the risk of working environment. The company provides leave permits for workers and periodically performs work rotation.

Keywords: *job stress, female worker and male, individual characteristics, work environment.*

Introduction

The use of technology in the industry demand workers to continue to evolve following the progress. Workers will face 3C (complexity, competition, changes), therefore workers must follow them in order not to be left behind. The condition resulted in workers who are unable to keep up with the development will result in anxiety with increasing stress as one of psychosocial risks. Job stress is a dangerous physical and emotional response that occurs when there is a discrepancy between capacity and the workload experienced by the worker.[1] Job stress can cause complaints on health and may even result in injuries or accidents. One is able to work optimally with the compatibility between task and working capacity, lowering the risk of psychosocial.[2]

The main cause of job stress is the interaction between the characteristics of the worker and working Conditions.[1] Based on the analysis of the main components of the ergonomic workplace revealed that human factors and significant environmental factors related to the job stress.[3] Occupational stress is

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influenced by individual factors and physical workloads, impactful individual factors including age, employment and the education level.[4] Physical work of labor, affecting employee work stress, the better the condition of physical work environment based on lighting, air temperature, color, sound noise, hygiene, motion room, and occupational safety, the work stress felt by the The officers will decline.[5]

Factors that affect job stress to the aluminum industry workers are the physical factors of the working environment including temperature, humidity, lighting and noise, as well as individual worker factors that include the age and working period.[6] The stressful physical environment is characterized by noise, air pollution, temperature, vibration, heavy loads and works in an inappropriate or exhaustive position that is potentially a potential source of stress as well as an influence on employee health.[7]

Data of BPS shows that in the last decade, the women's employment indicator in Indonesia showed improvement. During the period 2014 – 2017, female labor force grew 2.09% per year over the male workforce which was only 1.43% per year. This suggests that more and more women are involved in the industrial world.[8]

A national Survey of working conditions in Spain in 2012 that women had higher stress levels than in males when exposed to the demands of certain tasks.[9] Women workers in the Australian construction industry have experienced more anxiety and symptoms of acute stress than the male workers.[10]

PT. X is one of the companies in Sidoarjo Regency, Indonesia. The company is engaged in manufacturing industry which manufactures export grade plastic sacks and has long stood almost approximately 30 years. Preliminary studies conducted at PT. X known that the company employs female employees and men in the production section which are fairly balanced. The company gives the same treatment to women and men (gender equality) workers in work. Workers get the same treatment in working in hot, noisy, workload and uptime.

Method

This research aims to analyse differences in individual characteristics and perception of work environment influencing job stress on female and male workers in PT. X, Sidoarjo. The design of this research is cross-sectional by going through an observation approach or data collection at a time. The subject of this study amounted to 50 people, independent variable of the research were age, education, employment, marital status, noise, lighting and temperature. Dependent Variable binding was the job stress on women and men workers at PT. X. Data collection techniques was done using Questionnaire instrument to know the individual characteristics and environmental factors influencing workers job stress.

Results

Age: Based on the results of the study, we found that most female and male respondents were in a group of age 25 – 49 years, of which as many as 21 respondents (84%) and 14 respondents (56%).

Education level: Based on the results of the study, we found that most female respondents were educated in Middle School amounting to 16 respondents (64%) and 23 respondents (92%) High school-educated men.

Working Period: Based on the results of the study, we found that most female and male respondents have been working for 5-19 years many as 13 respondents (52%) and 14 respondents (56%).

Marital Status: Based on the results of the study, we found that most female and male respondents were married as many as 25 respondents (100%) and 16 respondents (64%).

Noise: Based on the results of the study, we found that most female and male respondents felt their working environment was noisy as many as 20 respondents (80%) and 22 respondents (88%).

Lighting: Based on the results of the study, we found that most female and male respondents felt their working environment was well lit, as many as 16 respondents (64%) and 19 respondents (76%).

Temperature: Based on the results of the study, we found that most female and male respondents felt their working environment was hot as many as 18 respondents (72%) and 16 respondents (64%).

The result of analysis on Gender difference to job stress in PT. X

Table 1 The test results job stress

Gender	Job stress		p-value (0.05)
	Yes N (%)	No N (%)	
Female	8 (32%)	17 (68%)	0.040
Male	5 (20%)	20 (80%)	

The Mann-Whitney and cross tabulation test results in table 1 indicate that there is a difference in gender to job stress (p-value = 0.04). We found that female respondents and men with job stress were 8 respondents (32%) and 5 respondents (20%).

Results of analysis on factors that influence job stress on female workers with male workers in PT. X

Table 2 The test results of influence on female and male workers

Independent			Dependent		
Gender	Variable	Category	Job stress		p-value (0.05)
			Yes N (%)	No N (%)	
Female	Age	< 25 years	0 (0%)	0 (0%)	0.533
		25 - 49 years	7 (33.3)	14 (66.7%)	
		> 49 years	1 (25%)	3 (75%)	
	Education level	Elementary	0 (0%)	1 (100%)	0.625
		Junior High	5 (31.3%)	11 (68.7%)	
		Senior High	3 (37.5%)	5 (62.5%)	
	Working period	< 5 years	1 (50%)	1 (50%)	0.027
		5 - 19 years	5 (38.5%)	8 (61.5%)	
		> 19 years	2 (20%)	8 (80%)	
	Marital status	Yes	8 (32%)	17 (68%)	1.000
		No	0 (0%)	0 (0%)	
	Noise	Yes	4 (20%)	16 (80%)	0.017
		No	4 (80%)	1 (20%)	
	Lighting	Yes	5 (31.3%)	11 (68.7%)	0.871
		No	3 (33.3%)	6 (66.7%)	
	Temperature	Yes	5 (27.8%)	13 (72.2%)	0.218
		No	3 (42,9%)	4 (57,1%)	

Cont... **Table 2 The test results of influence on female and male workers**

Laki - laki	Age	< 25 years	1 (10%)	9 (90%)	0.011
		25 - 49 years	4 (28.6%)	10 (71.4%)	
		> 49 years	0 (0%)	1 (100%)	
	Education level	Elementary	0 (0%)	0 (0%)	0.668
		Junior High	0 (0%)	2 (100%)	
		Senior High	5 (21.7%)	18 78.3%	
	Working period	< 5 years	1 (11.1%)	8 (88.9%)	0.030
		5 - 19 years	4 (28.6%)	10 (71.4%)	
		> 19 years	0 (0%)	2 (100%)	
	Marital status	Yes	4 (25%)	12 (75%)	0.797
		No	1 (11.1%)	8 (88.9%)	
	Noise	Yes	5 (22.7%)	17 (77.3%)	0.925
		No	0 (0%)	3 (100%)	
	Lighting	Yes	5 (26.3%)	14 (73.7%)	0.005
		No	0 (0%)	6 (100%)	
	Temperature	Yes	3 (18.8%)	13 (81.3%)	0.99
		No	2 (22.2%)	7 (77.8%)	

The results of logistic and cross tabulation regression in table 2 indicate that an independent variable that influences the dependent variable (job stress) based on a logistic regression test (P-value of < 0.05) on a female respondent was working time variable (P-value= 0.027) and noise (P-value= 0.017). On male respondent, the influential factor was the age variable (P-value= 0.011), the working period (p-value= 0.030) and the lighting (p-value= 0.005).

Discussion

Based on the statistical results, the factors that influence job stress on female workers are working days and noise. The work period that influences the job stress on women is worth a negative value, meaning that the length of the respondent's work will reduce the incidence of job stress. A person working with a long working period will have lighter job stress because the person is experienced and fast response in facing various problems of the work.[11] The female respondent at PT. X with a little working experience is a new employee, so they are still learning about the problem of work. Female respondents with a new experience are still adjusting to the job and the working environment, resulting in greater risk of job stress. Other research suggests that fewer working days tend to suffer from the job stress.[12]

Another factor that influenced female respondents was the noise, the effect of noise on job stress was positive value. This means more and more female respondents are feeling noisy, the bigger the female respondents will experience working stress. Workers who are in a working environment with high noise intensity and long periods are more prone to stress and boredom in routine work that tends to be monotonous.[13] The threshold value of physical factors and chemical factors at work mentions that the work in the area with a noise exposure of 85 dB maximum 8 hours per day.[14] The noise existed in the working environment of PT. X is 88.2 dB for 8 hours per day, this has exceeded the specified threshold value. Women in work are more sensitive about the company's environmental concerns compared to the men.[15]

Women's sensitivity to environmental noise encourages negative effects of a noisy workspace condition. Most female respondents assumed that while carrying out production activities at a high noise level, the employees were quick to feel tired, giddy and less comfortable in work, thereby triggering the onset of job stress.

The factors that influence job stress on male workers are age, employment and lighting. The influence of age of male respondents to job stress was a negative value which means workers aged older men tend to have lower working stress. Another study expressed the level of occupational stress experienced by older workers usually tends to be low.[16] This is because in elderly workers, they are more mature thus they have the ability to process stress better compared to young workers. Most of the male respondents in PT. X are under 25 years of age, this is one of the factors of significant relationship between age and job stress. Male respondents with younger age have no experience and a lot of understanding in working, thus in certain types of occupations, age becomes a trigger for stress.[17]

The work period that influences the job stress on male respondents is positive, which means that workers with longer working days have a greater chance of experiencing work stress.[4] Work life-related stress is related in the cause of boredom in work. Workers who have worked more than five years usually have a higher working boredom rate compared to new workers. This boredom can then affect workplace stress.[18] The capacity of male respondents is considered to be active, strong, intelligent, and independent when compared to women.[19] Male respondents who do easy job when it is compared to their capacity and repetitive work routines, there will be a risk of boredom that can trigger the onset of stress. Respondents who stated that they are tired have a greater chance of experiencing heavy job stress compared to respondents who do not get bored.[20]

The next factors that influence the job stress of male respondent was the lighting. An influential explanation had a negative value, which means that more and more male respondents declared that the lighting was less likely to experience job stress. The data on the explanation of the information of lighting by PT. X is an average of 757 lux. The influence of lighting on job stress on male respondents who considered too strong lighting could have a psychological impact on workers as most male respondents complained of tired and giddy. This condition can even lead to a working accident due to lighting in the workspace.[18] High glare levels and minimum lighting can cause eye strain and cause stress in the workplace.[21]

Conclusion

Female workers at PT. X experienced 32% of job stress and 20% of male workers. The results of logistic regression analysis obtains a significant influence of working time with job stress (P=0.027) as well as noise with job stress (P=0.017) on female workers. Male workers are significant to the job stress namely age (P=0.011), working period (P=0.030) as well as lighting (P=0.005).

Conflict of Interest: None

Ethical Clearance: The data was collected after the study proposal passed the ethical clearance and passed by Health Research Ethics Commission of Faculty of Public Health Airlangga University.

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