

Gender and Exercise Habits as Factors Causing Work Stress in Surabaya City Health Office Employees

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ABSTRACT

Introduction: Organizational success is influenced by the performance of each employee in it. Work stress experienced by the employees is one of the obstacles in improving the quality of the organization. Another research showed that employees of Manado City Health Office experienced 27.7% low stress and 72.3% moderate stress, which affected the work productivity of the employees. This research aims to see the relationship between gender and exercise habits on the stress experienced by the employees of Surabaya City Health Office. **Method:** This research is an observational type of research where the primary data were obtained from the responses of 32 employees of the Surabaya City Health Office. The data were collected by using a questionnaire based on the Regulation of the Minister of Manpower No. 5 of 2018 concerning Occupational Health and Safety in the Work Environment. The primary data obtained were then analyzed using cross-tabulation in a data processing software. **Result:** This research shows that, with an alpha of 5% (0.005), the relationship between gender and work stress events has a significance value of 0.013, while the relationship between exercise habits and work stress events has a significance value of 0.006. **Conclusion:** This research shows that there is a significant relationship between gender and exercise habits on stress events in Surabaya City Health Office employees. Women employees experience a higher incidence of work stress than male employees. Furthermore, the habit of exercising can reduce stress events because exercising can stimulate endorphins which play a role in creating a sense of calm, reducing pain, and releasing tension.

Keywords: exercise habits, gender, work stress

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INTRODUCTION

The success of an agency or organization is affected not only by the single factor of the organization's management integration. Another factor in improving the quality of the organization is the performance of each employee involved in it. The performance includes the performance from the top-level to the bottom-level employees (Yasa, 2017).

Employee performance is certainly influenced by several factors including work environment, organizational culture, salary, leadership and motivation, job discipline, job satisfaction, communication, and other factors (Farisi and Utari, 2020). Employee performance factors are the foundation of the quality of the company or agency. A company or agency with accomplished employees can stimulate the improvement of the company's performance. The agency needs to create an organizational culture and a conducive working environment for the convenience of its employees. A worker in an organization or agency with difficulty in adjusting to the work environment tends to

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experience work stress (Pongantung, Kapantouw and Kawatu, 2018).

Stress can be interpreted as the result or accumulation of a load stimulus or excessive action given by the environment to a person's psychological condition. While work stress can be interpreted as the tension created by the imbalance between physical condition and psychic condition in employee that can affect the employee's thinking, emotion, and condition (Aldi and Susanti, 2019). Based on a survey conducted in France, 74% of health workers, especially nurses, experienced work stress. The work stress complaint resulted from excessive demands on the physical and skills of the nurses (Ansori and Martiana, 2017). Moreover, employees of the Manado City Health Office experienced work stress with an accumulation of 27.7% low stress and 72.3% moderate stress. This condition directly affected employee productivity (Sorongan, Suoth and Boky, 2019).

Work stress has a wide range of effects including on cognitive and behavioral aspects. On cognitive aspects, work stress results in increased distraction, reduced short-term memory capacity, and decreased concentration. Whereas in the behavioral aspect, work stress results in reduced work quality, disrupted sleep patterns, and increased work disharmony (Ansori and Martiana, 2017). Other symptoms of work stress include physiological symptoms such as increased blood pressure, headaches, metabolic changes, and so on (Amsar, 2018).

Work stress influenced by the level of employment given to male and female employees has a considerable impact on the psychological condition of the employees. According to the principle of gender equality and justice in Indonesia, similar conditions have been established for men and women to be equal in their participation in the development and employment sectors. A research conducted on 124 employees (respondents) at PT Telekomunikasi Indonesia Tbk found that there was a difference between male and female work stress in which the female employees experienced more work stress than the male employees (Amsar, 2018). In addition, other research found that female employees are more vulnerable to stress due to the effects of oxytocin, estrogen, and sexual hormones (Rohmatillah and Kholifah, 2021).

Work stress experienced by employees can be easily controlled. One of the methods is regular exercise. According to a research entitled "Relationship Between Physical Activity,

Psychological Well-being, and Stress in a College Population," physical and exercise activities have a good effect on student stress control (Bayköse and Erdogan, 2021). Regular exercise helps people neutralize their stress. This is because exercising can stimulate the happiness hormone, namely endorphins, that create a feeling of calm, reduce pain, and release tension. Endorphins produced from exercise can replace stress hormones so that emotions can be controlled stably by a person. In addition, endorphins also plays a role in reducing excessive anxiety, stress, and depression (Poluakan and Manampiring, 2020). Based on the observations, employees of the Surabaya City Health Office experienced light work stress (68.75%) and moderate stress (31.25%) that came from the physical and mental workload experienced by the employees. Based on the preliminary description above, this research aims to look at the relationship of gender and exercise habits on the stress experienced by employees of the Surabaya City Health Office.

METHOD

This research is an observational research where the primary data were collected from Surabaya City Health Office employees. Data collection was carried out through questionnaire to measure work stress based on the Regulation of the Minister of Manpower No. 5 of 2018 concerning Occupational Health and Safety in the Work Environment. In this research, the researcher(s) did not give any treatment to the research object. This research used a cross-sectional design. There were 32 employees of the Surabaya City Health Office involved as the research sample. The data were then analyzed using Chi-Square data analysis in one of the data processing software. This research has been ethically qualified with letter number 451/HRECC.FODM/VII/2021 by the Faculty of Dentistry, Airlangga University.

RESULT

This research measures the stress in employees of the Surabaya City Health Office. The measurement was conducted by using questionnaire sourced from the Minister of Manpower Regulation (Indonesian: Permenaker) No. 5 of 2018 on Occupational Health and Safety. The questionnaire was distributed to 32 research respondents, namely the employees of the Surabaya City Health Office.

Gender

Gender is a description of the socially constructed characteristics of the research respondents. In this research, the 32 respondents have various gender classifications and exercise habits. The respondents consisted of 10 men (31.25%) and 22 women (68.75%). The result of the statistical testing in Table 2, with a p-value of 5%

Table 1. Age Distribution of Research Respondents 2021

Age	The Number of Respondents	Percentage (%)
<35 years	24	75%
>35 years	8	25%
Total	32	100%

Source: Primary Data, 2021

Table 2. Result of Statistical Testing Between Research Variables

Independent Variable	Alpha	Description
Work Stress	0.013	$\alpha > 0.005$ There is a relationship
Exercise Habits	0.006	$\alpha > 0.005$ There is a relationship

Source: Primary Data, 2021

Table 3. Relationship between Gender and Work Stress in Employees of the Surabaya City Health Office 2021

Gender	Work Stress Category				Total	
	Low		Medium		N	%
	n	%	n	%		
Male	10	100	0	0.0	10	100
Female	12	54.5	10	45.5	22	100
Total					32	100

Source: Primary Data, 2021

Table 4. Relationship between Exercise Habits and Work Stress in Employees of the Surabaya City Health Office 2021

Exercise Habits	Work Stress Category				Total	
	Low		Medium		N	%
	n	%	n	%		
Enough (150 minutes/week)	11	100	0	0.0	11	100
Not Enough (<150 minutes/week)	11	52.38	10	47.62	21	100
Total					32	100

Source: Primary Data, 2021

(0.005), shows that the significance value between the gender and work stress variable is 0.013. It means that there is a relationship between the gender variable of the employees and the incidence of work stress in the employees of the Surabaya City Health Office.

Exercise Habits

Exercise is defined as a structured activity with the involvement of repeated body movements to improve physical fitness. Exercise habits are classified as aerobic and anaerobic exercises. During the data collection, respondents' exercise habits were also collected. It was found that 10 men (100%) experienced mild stress, while 0 men (0%) experienced moderate stress (0%), and 0 men (0%) experienced severe stress. On the other hand, 12 women experienced mild stress (54.5%), 10 women (45.5%) experienced moderate stress, and 0 women (0%) experienced severe stress (Table 3). Thus, according to Table 3, the total number of women experiencing work stress is 22 (68.75%) and the total number of men experiencing stress is 10 (31.25%). It means that the women experience more stress than the men.

According to Table 4, in the sufficient category (150 minutes/week), there are 11 people (100%) in the mild category, 0 people (0%) in the moderate category, and 0 people in the severe category. On the other hand, in the insufficient category (<150 minutes/week), there are 11 people (52.38%) in the mild category, 10 people in the moderate category (47.62%), and 0 people (0%) in the severe category.

Thus, overall, the distribution of exercise habits is as follows: 11 people (34.40%) in the sufficient exercise category (150 minutes/week) and 21 people (65.60%) in the insufficient exercise category (<150 minutes/week). In addition, the statistical result in Table 2 with the p-value of 5% (0.005) carried out on the variables of exercise habits and work

stress, shows a significance value of 0.006. It means that there is a relationship between the variables of employee exercise habits and work stress of employees of the Surabaya City Health Office.

DISCUSSION

Relationship Between Gender and Work Stress

Statistical test results conducted on gender and work stress variables show that there is a fairly strong correlation between the two. The results are relevant to previous research stating that men have different physical abilities than women. The phenomenon of work stress is more common in women. The menstrual cycle of women also adds to their work stress by promoting unstable emotions. These improperly controlled emotions will increase the workload they feel (Mulfiyanti, Muis and Rivai, 2019).

This research result shows that female employees at the Surabaya City Health Office have higher work stress due to the relatively weaker physical abilities of women than men. Female employees are also required to prepare the needs of their husband, family, child care, and other household needs before going to the office. Thus, the workload trend is increasing, leading to work stress (Ansori and Martiana, 2017). In addition, everyone has their own personality that will also affect their response to receiving the work stress stimulus. The personality has a profound effect on the ability of people to manage stressors so that their perceived impact can be reduced optimally (Muhmmad, 2018).

In addition to physical and emotional abilities of women, there is also the dual role conflict tendency of women. They tend to demand equality in the world of work rather than men. They will make full efforts to take a role in the economic sector despite their initial role as a mother and wife in their family. Female workers tend to have a strong desire to work due to the needs to support family finance, insight, personal actualization, and so on. Even in the health sector, the majority of nurses are women, amounting to 60–70%. In general, the dual role of women affects their work stress compared to men. Women tend to have a greater risk of stress than men because of the burden of thinking about their children, husbands, and their work (Saputra *et al.*, 2020).

This research is in line with another research stating that the chances of female workers

experiencing work stress are 0.039 times higher than male workers. This is because women are responsible before and after work as housewives (Habibi, 2018). According to the American Psychological Association report (APA), married women have more work stress than unmarried women (Nakamura *et al.*, 2022). Another research on prison guard officers of class IIA Semarang showed that female workers experience greater stress than male workers. This is characterized by the stress of female workers, including severe stress (44%) and mild stress (13%) while male workers are severe stress (13%) and mild stress (30%) (Lestari, Wahyuni and Ekawati, 2017).

The respondents in this research were employees of the Surabaya City Health Office. The difference in gender has the tendency of difference in work stress where the double workload is felt by female workers. Female workers have the obligation as the mothers and wives that prepare the needs of their families before going to work. Moreover, workload in the workplace increases the tendency to experience work stress.

Relationship Between Exercise Habits and Work Stress

Statistical tests obtained from this research show that variables of exercise habits and work stress have a fairly strong correlation. The results of this research indicate that employees of the Surabaya City Health Office with less exercise habits (less than 150 minutes/week) appear to have a higher stress level than employees with moderate exercise habits.

These findings are in line with previous research stating that exercise helps reduce the risk of disease and maintain body fitness against anxiety, depression, and stress (Bernstein, 2018). Not only in adults, exercise is also needed to be optimized in children and adolescents. The involvement of Surabaya City Health Office employees in increasing adequate exercise habits can be a stimulus in promoting optimal mental health for children and adolescents in their respective families (Raiola, 2021). Stress can be neutralized by exercise habits because the brain gives a specific chemical response when exercising. Neuron receptors in the brain are bound by the endorphins hormone, thus relieving stress (Putri, 2022).

These exercise habits have a strong relationship to increased confidence, decreased anxiety, decreased stress, and increased self-conception

(Brown, 2021). Other research results showed that there is an inverse relationship between exercise habits and anxiety or depression. The exercise habits will lower the stress hormones, namely cortisol and epinephrine hormones. The body immediately produces beta endorphins and lowers cortisol in the body to improve the mood when exercising (Asri and Octaviana, 2021).

People who exercise will experience increased neurotransmitters such as dopamine and serotonin and endorphin secretion. This will make a person more cheerful and relaxed and bring a sense of happiness and comfort to his/her body. In addition, exercise will overcome the cortisol hormone so that individuals will become more resistant to emotional and physical stress. Exercise habits also have good benefits in transitioning to a more positive mind, healthy heart rate, and healthy respiratory system (Marhamah and Triastuti, 2020).

Excessive stress will also affect night sleep or difficulty in sleeping (insomnia). This is because the cortisol stress hormone can decrease the synthesis of melatonin hormone, which are sleep-control hormones in humans. So it is necessary to have good exercise habits so that the endorphin hormone produced can lower the body's cortisol level and prevent insomnia optimally (Widiantini, Sugiharto and Andiana, 2019).

In addition to sleep difficulties, increased stress also affects dysmenorrhea, which is menstrual pain due to the contraction of uterine muscles during menstrual blood loss. High stress will cause work disorders of endocrine hormone, causing menstruation to be painful and irregular. Work stress can increase corticotrophin releasing hormone (CRH) and adrenocorticotrophic hormone secretion (ACTH). They affect follicle development disorders which eventually lead to progesterone release disorders. These disorders are at risk of increased constructions that cause dysmenorrhea (Nuraini, Sa'diah and Fitriany, 2021). Thus, a good exercise habit can increase endorphin hormones, which prevent stress and indirectly reduce dysmenorrhea (Qomarasari, 2021).

Another research in the Journal of Abnormal Psychology supported the claim that exercise habits play an active role in relieving work stress and suggested that higher intensity physical activity and exercise will reduce depression and stress (Howe, Kozel and Palmer, 2017). Teenagers who exercise a lot tend to have a positive self-image and good stress

management skills and social interaction (Andalajari and Berbudi BL, 2018).

Other research showed that, physiologically, exercise habits can affect the human central nervous system. Individuals who exercise will have an increased Brain-Derived-Neurotrophic Factor (BDNF) and long-term potential (LTP). The increase in LTP turned out to be affected by the increased BDNF. This will have a good effect on improving memory function and learning on stress tolerance. BDNF also lowers cortisol levels to normal again (Luo *et al.*, 2017).

Psychologically, exercise habits also affect the quality of social interaction between people. Regular exercise can improve good interpersonal relationships between individuals who exercise. The goal of starting this habit is the improvement of daily mood during the exercise or exercise process itself (Tangmunkongvorakul *et al.*, 2019).

Swimming will improve the mood and make the mind more relaxed. The movements performed while swimming slowly tend to make the body feel free, the mind feel calmer, and the endorphin hormone is increased (Sukiyah, Bahagia and Sutisna, 2021). In addition to swimming, a 20-minute treadmill exercise can reduce stress (Accattato *et al.*, 2017). Outdoor exercise such as cycling, weight lifting, and yoga can also reduce stress in humans (Nopembri, Sugiyama and Rithaudin, 2019).

The respondents in this research, namely the employees of the Surabaya City Health Office, have a fairly high workload so that the tendency to experience work stress will be quite high. Regular exercise habits will make it easier for the employees to manage stress and create a feeling of happiness in carrying out their activities and work, especially at the Surabaya City Health Office.

CONCLUSION

Based on the overall results of the analysis, the two independent variables (gender and exercise habits) have a significant relationship with work stress. The female employees of Surabaya City Health Office tend to have a higher level of work stress than male employees. In addition, the employees still lack regular exercise with a duration of 150 minutes/week.

Thus, there is a need for a more even distribution of workload between male and female employees so that the level of work stress is not higher for women.

In addition, female employees must also be able to perform stress management optimally by, for example, increasing the exercise habits of more than 150 minutes/week. The exercising can increase the stimulation of endorphins which reduce the stress reaction of the cortisol and epinephrine hormones in employees. So that it can increase the health level of employees of the Surabaya City Health Office.

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