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Work Stress Management Due to Fatigue Among Textile Workers

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Abstract

Work stress in the workplace is an important issue that requires special attention, because if not properly managed, it can lead to various serious symptoms that affect employees' health, productivity, and capability. The aims of research to analyze the relationship between fatigue and work stress. Methods: This research used a quantitative method with a cross-sectional design approach. The study was conducted from April to June 2025. The sampling technique used was random sampling with a sample of 41 respondents. Data were analyzed using the chi-square test. Results: Work stress was experienced by 46.34% of workers, and 48.78% experienced fatigue. Among those who were fatigued, 34.15% experienced work stress and 12.20% of non-fatigued workers experienced work stress. Meanwhile, 39.02% of non-fatigued workers did not experience work stress, and 14.63% of fatigued workers did not experience work stress. The significance test result showed p = 0.004, indicating that fatigue is related with work stress among textile workers.

Keywords: work stress, fatigue, stress management

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INTRODUCTION

Work fatigue is a problem often experienced by every worker when performing their job. Based on data from the International Labor Organization (ILO) in 2016, it is known that approximately 32% of workers worldwide experience fatigue due to work. One factor that can cause work fatigue is work stress (F. Firdani et al., 2023). The demands of professionalism in the world of work, coupled with limited time to complete work optimally, both in government and non-government institutions, create problems and burdens that ultimately cause mental pressure and lead to work stress (L. Dewi, 2024). Work stress is an emotional pressure related to events in the work environment or outside the work environment, which ultimately affects the physical, psychological, and mental state of individuals (S. Mariyam and K. R. Pertiwi, 2015).

Stress is psychological pressure that can cause physical and mental health problems. According to a survey of 240 people conducted by Improvement of Working Condition in 2000, it was found that around 28% of workers reported illnesses and health problems caused by chronic stress (E. Rudyarti, 2020). When under stress, the body activates a fight-or-flight response, causing a person to expend more energy than usual, which can lead to mental and physical fatigue (S. N. Husniyyah and A. G. Azwar, 2022).

A survey was conducted at PT Pancautama. Based on the questionnaire survey, it was found that workers experienced high and moderate levels of stress. Based on a subsequent survey using a Lakasidaya 77 reaction timer, it was found that several workers also experienced severe and moderate fatigue. Based on this background, the purpose of this study was to analyze work-related stress due to work fatigue at PT Pancautama.

RESEARCH METHODS

This study is a quantitative study using a survey research method that is analytical (explanatory study) in nature, using a cross-sectional research design (Sugiyono, 2024). In this study, the sampling technique used was random sampling of 41 respondents. The research variables were measured or collected at the same time, obtained through the measurement of work fatigue using the reaction time method with a Lakasidaya of 77, while work stress was measured using a questionnaire. The data were analyzed using chi-square analysis to find the relationship and test the hypothesis between the two variables.

RESULTS AND DISCUSSION

PT Pancautama is a textile industry that employs hundreds of workers, thus complying with Government Regulation No. 50 of 2012 concerning the Occupational Safety and Health Management System (SMK3). The results of the study on work stress levels and work fatigue among 41 respondents at PT Pancautama, namely respondent characteristics, work stress, work fatigue, and the relationship between the two variables, are shown in the following results:

Respondent Characteristics

Table 1. Characteristics of Respondents at PT Pancautama

Gender	Female	Male
	22	19
Age	Productive	Non-Productive
	41	0
Work Period	< 5 years	> 5 years
	6	35
Education	Junior High School	High School
	11	26

Respondents in the study were primarily female (54%), indicating a gender difference that may also relate to variations in mental resilience. Kurniawati and Widjasena (2022) suggest that women tend to exhibit more emotional responses in their work, with these emotional levels contributing to work-related stress, particularly as many women juggle dual roles.

The overall age of workers falls into the productive age category, although there were respondents over the age of 30, namely 56 years old, which is still considered productive age towards less productive age. This observation aligns with Perwiraningsih (2020), who notes that age can impact physical condition, including strength and overall health of organs, with older age generally associated with decreased stamina. Research by Suwaryo & Yuwono (2017) indicates that individuals aged 18 to 45 typically have strong cognitive abilities, while cognitive functions and comprehension skills may decline after the age of 45.

The majority of workers have been employed for more than 5 years, with the longest period of employment being 16 years. This is in line with the statements made by Al-Jabar (2020) and Rinawati (2016), that knowledge should be provided more frequently as a person's length of employment increases. This is reinforced by Safiu et.al. (2022), which states that the length of service of workers is related to work stress in the textile industry: a study of mental workload and length of service found that length of service has a p-value = 0.026 on work stress. The same thing was studied in female garment workers in Sukabumi, which found that high work targets and excessive working hours are one of the problems that trigger work stress (Akbar et,al., 2020).

The majority of workers have a high school education (63.41%), so workers with at least a high school education are considered capable of understanding work procedures (SOP) and efforts in stress management for themselves. This is in line with Notoatmodjo's (2018) theory that knowledge is related to education, so it is expected that the higher a person's level of education, the broader their knowledge will be.

2. **Fatigue**

Table 2. Results of work fatigue measurements of PT Pancautama respondents

Fatigue	
Fatigue	21
Not Fatigue	20
N	41

Research data shows that 51.22% of the 41 respondents did not experience work fatigue, while 48.78% experienced moderate fatigue, and only 2 respondents experienced high fatigue. Based on (Styawati, 2010), the longer the worker's working period, the higher the level of fatigue because the longer a person works, the more boredom arises from work, thus affecting the level of fatigue.

3. **Work Stress**

Table 3. Results of work stress measurements of PT Pancautama respondents

Work Stress	
Stress	22
Not Stress	19
N	41

The results of the study show that 53.66% of the 41 respondents did not experience work stress, while 46.34% did experience work stress, with 3 respondents in the high work

stress category and the rest in the moderate stress category.

The data shows that there is not much work stress, which is due to the fact that the work environment has been well controlled, such as through routine monitoring of noise levels, heat pressure, vibration, dust, and other factors in accordance with Permenakertrans No. 05 of 2018 concerning Occupational Safety and Health in the work environment. Those who did not experience work stress were predominantly male, which is consistent with a Tel Aviv study cited by Putra (2021), which found that women can absorb information five times faster than men. This is why women are quicker to draw conclusions than men. In contrast to women, men have much stronger motor skills than women.

Respondents who experienced moderate and high stress were predominantly women in this study were likely due to several factors, such as internal family problems carried over to work, job demands, lack of promotion, and office policies.

4. **Work Stress due to Work Fatigue**

Table 04. Statistical test results for work fatigue and work stress among PT Pancautama respondents

Fatigue and Works Stress				p-value
	Not Stress	Stress		
Fatigue	16	5	21	
Not Fatigue	6	14	20	0.004
	22	19	N = 41	

Respondents who were tired and experienced stress accounted for 34.15%, while those who were not tired but experienced work stress accounted for 12.20%. Meanwhile, respondents who were not tired and did not experience work stress accounted for 39.02%, and respondents who were tired but did not experience work stress accounted for 14.63%.

The test results show that there is a significant correlation between work fatigue and stress. This is because people work too intensely, are highly dedicated and committed, work too much and for too long, and view their own needs and desires as secondary. This causes them to feel pressure to give even more. This pressure can come from within themselves, from clients who need them badly, and from administrators (supervisors or overseers). With this pressure, they may feel guilty, which ultimately pushes them to expend more energy, leading to work fatigue. Similar research by Edwina (2024) found a correlation between work stress and feelings of fatigue experienced by nurses in hospitals with a value of r = 0.454, indicating that work stress is one of the determining factors of work fatigue. The higher the level of work stress felt by workers, the higher the level of work fatigue felt. This study is also in line with the research by Meilisa et al. (2023), which states that stress is correlated with work fatigue (p-value = 0.000), meaning that there is a correlation between work fatigue and work stress among nurses at the Mandau Regional General Hospital in Bengkalis Regency, Riau.

5. **Work Stress Management**

Work stress management is a systematic effort undertaken by organizations and individuals to recognize, reduce, or manage stress in the work environment in order to maintain or improve well-being and performance. According to Tarwaka (2018) and Kartika dkk (2022), stress management is a set of techniques and programs that help people manage stress more effectively by analyzing specific causes of stress and taking positive actions to minimize its impact. Etheses UIN Syekh Wasil Kediri The general stages of work stress management include:

a. Identify stressors (know what the main work pressures are).

The industry has implemented occupational safety and health management

through annual programs, including routine monitoring of the work environment to ensure that environmental factors are below threshold values or in accordance with applicable regulatory standards. Therefore, one of the workplace stressors is considered to be under control because it complies with Government Regulation No. 50 of 2012 and Minister of Manpower Regulation No. 5 of 2018.

b. Assessment or understanding of the impact of stress on individuals and organizations.

The industry has not yet conducted an assessment and evaluation of psychosocial stressors and work relationships, so this may be the main cause. This is in accordance with Andarini and Prasetya (2017), although not always specific to textiles, the literature states that conditions such as role conflict, task ambiguity, low supervisor support, or poor inter-worker relationships can be stressors.

The industry has not conducted regular surveys on the health and well-being profiles of workers to identify stress levels, physical/psychological conditions, and their relationship with work performance. According to WHO (2016) the impact on physical and psychological health includes work-related stress being associated with sleep disorders, emotional exhaustion, cardiovascular disease risk, and even musculoskeletal disorders.

c. Designing control interventions, both at the organizational and individual levels.

The industry has not fully implemented interventions that target the impact: for example, health programs (prevention of occupational diseases), stress coping training for workers, task redesign to reduce production load on night shifts, and improvement of the physical work environment (noise, ventilation). At the organizational level, for example, job redesign, supervisor support, and improvement of the work environment; and at the individual level, for example, coping training, relaxation, and time management.

d. Evaluate the effectiveness of interventions and revise them if necessary.

Monitor the effects of these interventions: take measurements again after a certain period to see if organizational performance indicators have improved, if absenteeism/turnover has decreased, and if workers report improved well-being. Clear evaluation and measurement: There must be indicators of success (e.g., reduced absenteeism, increased job satisfaction, reduced stress reports) to assess effectiveness. This aligns with Saleh and Shahidan (2023), which states that employees experiencing high stress levels report decreased work performance, including aspects such as concentration, work speed, and quality of work output. For example, studies show that high levels of work stress significantly reduce employee performance.

This study found that workers experienced work stress but did not experience work fatigue, possibly because they were able to manage their stress well. According to Zona (2014), good work stress management skills can overcome or minimize work stress, which can reduce worker motivation and productivity.

There are many strategies that can be implemented to reduce work stress and fatigue, such as implementing appropriate working hours and rest periods, paying attention to physical health and mental-psychological harmony, and being able to manage stress well (A.D.Widyastuti, 2017).

Based on the identified stressors, stress management in the textile industry should include the following strategies:

a. Reducing workloads or adjusting production targets to be realistic.
b. Regulating working hours and shifts, taking into account adequate rest and recovery opportunities.
c. Improving the physical environment: reducing noise, maintaining comfortable temperatures, improving ventilation and lighting.

d. Task rotation or career development programs to reduce monotony.
e. Stress coping training for workers and psychosocial support such as good supervision, open communication, and team building.
f. Continuous monitoring to detect new stressors or changes in working conditions.

Management must realize that investing in stress impact control is not only "good for workers" but also "good for business" because it helps maintain productivity and quality while reducing long-term costs. Evaluations in the context of the textile industry may face obstacles such as tight production schedules, night shifts, and resistance to change from workers or management. However, systematic evaluation (including processes and outcomes) is essential for organizations to see what is working and what needs improvement.

CONCLUSIONS

The results of the study based on the data concluded that respondents at PT Pancautama who were tired experienced stress = 34.15% and those who were not tired experienced work stress = 12.20%, while those who were not tired and did not experience work stress = 39.02% and those who were tired but did not experience work stress = 14.63%. The significance test result was p= 0.004, indicating that work fatigue is related to work stress among textile workers. Work stress is triggered by several major stressors such as workload (physical and mental), physical work environment, long working hours, shift systems/long working hours, and (although less researched) psychosocial stressors. For effective stress management, textile companies must adopt a holistic approach that covers physical, workload, environmental, and socio-organizational aspects.

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