

## Breastfeeding and Occupational Stress and Fatigue of Female Workers in Garment Manufacturing Companies

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### Abstract

Female workers have not been clearly defined in the legislation that supports breastfeeding. Moreover, a significant number of them experience occupational stress and fatigue, which may disturb productivity. The research aimed to reveal the stress and fatigue level of breastfeeding female workers from garment companies in Sobosukawonosraten area of Central Java. Using cross sectional approach, this analytical survey involved 210 female workers of six garment companies across six districts. Furthermore, cluster snowball sampling technique was used to sample the workers, and chi-square test was used to analyze the data. Research results indicated a significant correlation between breastfeeding and occupational stress ( $X^2= 15.307$ ,  $p< 0.05$ ) with an effect of 26.1% ( $C= 26.1$ ;  $OR= 3.124$ ); and another significant correlation between breastfeeding and occupational fatigue ( $X^2= 15.307$ ,  $p< 0.05$ ) with a 55.5% effect ( $C= 55.5$ ;  $OR= 30.82$ ). On the whole, breastfeeding female workers have special needs and require attention from the companies in order to continue supporting good breastfeeding for the babies, who will become the nation's future generation.

### Abstrak

**Menyusui, Stres dan Kelelahan Kerja pada Pekerja Wanita di Perusahaan Garmen.** Peraturan perundangan yang mendukung "menyusui" belum jelas memaknai para pekerja wanita. Tidak sedikit pekerja wanita mengalami stres kerja dan kelelahan kerja yang dapat berpengaruh terhadap produktivitas kerja. Penelitian ini bertujuan mengungkap tingkat stres dan kelelahan kerja pekerja wanita menyusui di perusahaan garmen Sobosukawonosraten Jawa Tengah. Jenis penelitian survey analitik dengan pendekatan *cross sectional*. Melibatkan 210 pekerja wanita di perusahaan garmen yang tersebar di 6 (enam) Kabupaten. Teknik sampling *cluster snowball sampling*. Analisis data menggunakan *Chi Square*. Hasil penelitian menunjukkan ada hubungan signifikan antara pekerja menyusui dengan stres kerja ( $X^2= 15,307$ ;  $p< 0,05$ ), besar pengaruh 26,1% ( $C= 26,1$ ;  $OR= 3,124$ ). Ada hubungan signifikan antara pekerja menyusui dengan kelelahan kerja ( $X^2= 15,307$ ;  $p< 0,05$ ), besar pengaruh 55,5% ( $C= 55,5$ ;  $OR= 30,82$ ). Pekerja wanita dalam masa menyusui memiliki kebutuhan khusus, perlu mendapat perhatian dari perusahaan selama bekerja agar dapat terus mendukung program ASI yang baik bagi anak sebagai generasi penerus bangsa.

*Keywords: breastfeeding, occupational stress and fatigue*

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### Introduction

The United Nations' ILO Convention established one of its targets to enforce special protective effort for female workers. This is due to the fact that there are still companies that do not provide adequate attention to them such as garment manufacturers. Meanwhile, the potential of these women is greatly significant in Indonesia; hence, the supporting factor that accommodates their need to work comfortably is required. Government

appeals in the provincial, district or municipal levels have encouraged the companies to continue the provision of supporting facility such as lactation or breastfeeding rooms for the mothers. However, in reality, most of the female workers that undergo this cycle are not free to breast-feed their babies during work hours, and there is still a lack of facility to support exclusive breastfeeding.

Exclusive breastfeeding is given to a new born baby until he or she is six months of age, and this complies with the Decision Letter of the Minister of Health No. 450/Menkes/SK/IV/2004. However, the legislation supporting this subject has not established a clear definition on the breastfeeding and working female workers even though bearing a child, giving birth and breastfeeding are undeniable nature of women. Early observations found that many of the workers were under occupational stress and fatigue, which may affect their productivity. Meanwhile, one of the reasons why working women stop breastfeeding is because they return from maternity leave.<sup>1</sup> Only 10.6% of them continue to breast-feed after going back to work, and work place policies can significantly affect breastfeeding behaviors.<sup>2</sup>

It was also found in the interview with 313 breastfeeding female workers that the pressure and conflict to balance work demands and breastfeeding affected their body and emotional health up to the point that some of them delivered negative work performance.<sup>3</sup> Fatigue, lack of personal care and irregular meals are the physical problems that they faced. Psychological pressure due to the conflict between work demands and breastfeeding that they underwent after returning to work was also illustrated.<sup>4</sup> Stress is an incapability of the workers to address work demands, which results in some sort of discomfort.<sup>5</sup> This can affect occupational fatigue with symptoms of exhaustion and decline of alertness.<sup>6</sup>

Subjective and objective description of fatigue are a) sluggishness, sleepiness and dizziness, b) inability or declined ability to concentrate, c) decrease of alertness, d) weakness and slowness of perception, e) lessening of passion at work or lack thereof and f) a drop in physical and spiritual performance.<sup>7</sup> This research was aimed to reveal the level of work related stress and fatigue experienced by breastfeeding female workers in the garment companies at Sobosukawonosraten area of Central Java, which comprised of Surakarta, Boyolali, Sukoharjo, Karanganyar, Wonogiri, Sragen, and Klaten.

## Methods

The research was an analytical survey with cross sectional approach and research population of the entire breastfeeding and non-breastfeeding female workers at garment companies in Sobosukawonosraten area of Central Java. The sample was 210 people, which comprised of 105 breastfeeding female workers working as operators in the garment companies and 105 non-breastfeeding workers. The research used cluster snowball technique for the sampling and chi-square test for the statistical analysis in identifying the correlation between research variables. To achieve this, the data was gathered through questionnaire.

The scale of occupational stress was measured through occupational stress questionnaire, which comprised of 46 questions. However, after the conduct of validity and reliability test, there were only 32 valid and reliable question points ( $\alpha > 0.7$ ) that could be used for the research. Moreover, occupational stress level was defined by tallying valid answer points with the lowest score of 1 and highest of 4. Since there were only 32 valid question points, the lowest total score would be 32 and the highest would be 128. Furthermore, the data was categorized by totaling the lowest and highest scores divided by two, resulting in 80, which was then classified into the category of not stressed (score of 48-95) and stressed (score of 96-153). Meanwhile, the measurement of work fatigue used Reaction Timer L-77 Lakassidaya's with two categories of not fatigued workers (score  $\leq 410.0$ ) and fatigued workers (score  $> 410.0$ ).

## Results and Discussion

Research subjects of 210 people comprised of 105 breastfeeding workers (50 percent) and 105 non-breastfeeding workers for comparison purpose (50 percent). Based on the summary of research subject characteristics presented in Table 1, it was identified that most of the respondents aged 31-42 years old with the longest tenure of five years and above ( $\geq 5$  years). Moreover, they were graduates of SMK (vocational upper secondary school) and SMU (upper secondary school); thus, they were categorized into the group of respondents with more than 10 years of education ( $\geq 10$  years). Moreover, the majority of them had ideal BMI (Body Mass Index).

**Table 1. Summary of Research Subject Characteristics**

Characteristic	Total (Person)	Percentage (%)
Condition of subject		
Breastfeeding	105	50
Non-breastfeeding	105	50
Age (years old)		
31-42	118	56.19
20-30	92	43.81
Tenure undergone (Years)		
$\geq 5$	120	57.14
$< 5$	90	42.86
Length of education (Years)		
$\geq 10$	128	60.95
$< 10$	82	39.05
Body Mass Index (BMI)		
Ideal	128	60.95
Not ideal	82	39.05

From the analysis on the correlation between the effect of breastfeeding and work stress (as shown in Table 2), it was identified that most of the breastfeeding workers were under work stress, which were more in number than the compared non-breastfeeding workers. Based on the results of the statistical test, the values of  $p < 0.05$  and  $C = 26.1$  were found. Therefore, it can be concluded that there was a significant correlation between breastfeeding and work stress with an effect value of 26.1. The three factors of workload pressure, link between their household and career and their inability to understand the pressure of role and performance at work have direct and significant impacts on work stress.<sup>8</sup> High total workload and the declined time for resting, recovering and sleeping are risk factors for women's mental health with symptoms showing up 12 months after giving birth.<sup>9</sup>

Psychological pressure that took form as a conflict between work and breastfeeding demands are also described by the breastfeeding female workers that returned to work. The women expressed a need for support from their surrounding and also a sense of guilt, stress and feeling that they are sacrificing themselves.<sup>4</sup> The workers, especially operators in the garment companies, had high workload pressure due to production targets given by the companies. This incurred pressure on them, which then caused them to stress, and due to this, their emotion, thinking and physical condition were affected. The stressors can be found in the person's work environment.

Moreover, the mothers were required to wake up at night to breast-feed. Added with the lack of support from their husbands during that time, another burden fell on the workers, who in the daytime still need to work eight hours in the companies without the freedom to breast-feed or pump their breast milk. Some of them were forced to conduct the pumping in an inappropriate place such as the toilet. Furthermore, they did not know where they should store the breast milk. This caused a waste of spoiled milk and a concern that they would lack the production of breast milk, which then added more burdens to them. One of the ways to overcome work stress is to motivate the self to keep calm, control feelings, face issues and resolve problems correctly.

Based on the analysis on the correlation between age, tenure, IMT and length of education with the stress that the workers were under (as displayed in Table 3), statistical test results found a value of  $p = 0.384$ . Therefore, it can be concluded that there was no significant correlation between age and work stress, and this shows that work stress can be suffered by workers of both age groups (31-42 and 20-30 years old); depending on the point of view that each workers took in facing their problems.

Moreover, the analysis on the correlation between tenure and work stress identified the value of  $p = 0.122$  ( $p > 0.05$ ). This shows that there was no significant correlation between tenure and work stress since the stress can be experienced by workers working for  $\geq 5$  years and  $< 5$  years. The workers who have worked for  $\geq 5$  years were under stress due to several changes that happened such as new patterns and complexity in their work that required them to readjust. This was also felt by workers of  $< 5$  years.

In the statistical test between BMI and work stress, the value of  $p = 0.657$  ( $p > 0.05$ ) was found. The conclusion that there was no correlation between the two can be drawn since the stress can be experienced by workers who had ideal and non-ideal BMI. Meanwhile, for the correlation between length of education and work stress, the value found was  $p = 0.182$  ( $p > 0.05$ ), which can be concluded that there was no significant correlation between them. This is because occupational stress can be suffered by workers that had education of  $< 10$  years and also  $\geq 10$  years.

Operator jobs in garment manufacturing companies demand skills. That is why most of the workers were graduates of SMK (vocational upper secondary school) and SMU (upper secondary school), which were categorized as having education length of  $\geq 10$  years. Meanwhile, the rest of the workers had SD (elementary school) and SMP (lower secondary school) qualifications with sewing skills and were categorized into having  $< 10$  years of education.

**Table 2. Test Results of the Correlation between Breastfeeding Effect and Work Stress**

Workers	Stress Level				Total		$\chi^2$	p
	Stressed		Not Stressed		n	%		
	n	%	n	%				
Breast-feeding	50	47.6	55	52.4	105	100		
Non-breast-feeding	23	21.9	82	78.1	105	100	15.307	0.000
Total	73	34.8	137	65.2	210	100		

The analysis found 78 breastfeeding workers (74.3 percent) and 9 non-breastfeeding workers (8.6 percent) experiencing work fatigue. Furthermore, the statistical test results acquired the values of  $p < 0.05$  and  $C = 55.5$ . Therefore, a significant correlation was identified between the effect of breastfeeding and work fatigue with an effect value of 55.5, which means that the female workers experienced the impact of breastfeeding on work fatigue (Table 4).

This is in line with the research conducted on 313 breastfeeding female workers regarding pressure and conflict of mothers in balancing work demands and breastfeeding, which has physical and emotional health impacts. The respondents even showed poor work performance due to physical problems including fatigue, lack of personal care and irregular meals.<sup>3</sup> Furthermore, the women were burdened by double roles and 24 hour work than compared with men. The roles were to conduct household chores, manage the household, and provide care for their children.<sup>10</sup>

One of the factors of work fatigue is workload.<sup>6</sup> Breastfeeding female workers that work in garment manufacturers had double roles of working in the companies and tending the household as mentioned in the previous paragraph. These roles, added with workload from the companies, affect the setting in of fatigue.

From the analysis on the correlation between age, tenure, BMI and length of education with work fatigue (as exhibited in Table 5), the statistical test result on age and work fatigue acquired the value of  $p = 0.245$  ( $p > 0.05$ ). It can be concluded that a significant correlation between the two was non-existent, and work fatigue can be suffered by workers aged 31-42 and 20-30 years old. Although, the peak of female muscle strength is when women are 25-35 years old, the workers can cope with this given condition by balancing it with work experience and mental maturity.<sup>6</sup> Moreover, age also does not affect the symptoms of work fatigue.<sup>6</sup>

From the statistical test results of tenure and work fatigue (as presented in Table 5), the value of  $p = 0.019$  ( $p \leq 0.05$ ) was found, which leads to the conclusion that there is a significant correlation between the two. In this research, workers with tenures of  $\geq 5$  had more work fatigue than the ones with tenures of  $< 5$  years. This is due to their sense of responsibility and some psychological factors. Furthermore, the analysis on BMI and work fatigue with the value of  $p = 0.780$  ( $p > 0.05$ ) concluded that the two did not have any significant correlation. This showed that the fatigue can happen to workers with ideal or non-ideal BMI.

**Table 3. Test Results of the Correlation between Age, Tenure, BMI and Length of Education with Work Stress**

Workers Characteristic	Stress Level				Total		$\chi^2$	p
	Stressed		Not Stressed		n	%		
	n	%	n	%				
Age (years old)								
31-42	44	37.3	74	62.7	118	100	0.758	0.384
20-30	29	31.5	63	68.5	92	100		
Tenure undergone (years)								
$\geq 5$	47	39.2	73	60.8	120	100	2.396	0.122
$< 5$	26	28.9	64	71.1	90	100		
BMI								
Not ideal	30	36.6	52	63.4	82	100	0.197	0.657
Ideal	43	33.6	85	66.4	128	100		
Length of education (years)								
$< 10$	33	40.2	49	59.8	82	100	1.783	0.182
$\geq 10$	40	31.2	88	68.8	128	100		

\*BMI= Body Mass Index

**Table 4. Test Results of the Correlation between Breastfeeding Effect and Work Fatigue**

Workers	Work Fatigue				Total		$\chi^2$	p
	Fatigued		Not Fatigued		n	%		
	n	%	n	%				
Breast-feeding	78	74.3	27	25.7	105	100	15.307	0.000
Non-breast-feeding	9	8.6	96	91.4	105	100		
Total	87	41.4	123	58.6	210	100		

**Table 5. Test Results of the Correlation between Age, Tenure, BMI and Length of Education with Work Fatigue**

Workers Charac-teristic	Work Fatigue				Total		$\chi^2$	p
	Fatigued		Not Fatigued		n	%		
	n	%	n	%				
Age (years old)								
31-42	53	44.9	65	55.1	118	100	1.349	0.245
20-30	34	37.0	58	63.0	92	100		
Tenure undergone (years)								
≥5	58	48.3	62	51.7	120	100	5.501	0.019
<5	29	32.2	61	67.8	90	100		
BMI								
Not ideal	33	40.2	49	59.8	82	100	0.078	0.780
Ideal	54	42.2	74	57.8	128	100		
Length of education (Years)								
<10	35	42.7	47	57.3	82	100	0.087	0.768
≥10	52	40.6	76	59.4	128	100		

\*BMI= Body Mass Index

The problem of work fatigue cannot be separated with how the companies organize the work, in which biographical characteristics comprising of workers' age, number of dependent family members and tenure have clear impact on the organization. Meanwhile, analysis on the length of education and work fatigue acquired the value of  $p = 0.768$  ( $p > 0.05$ ), which can be concluded that there is no significant correlation between them. Generally, education is aimed to develop and broaden a person's knowledge, experience and understanding so that the higher a person's education is, the broader they think, the stronger their initiative power is, and the more ease they gain in appropriately finishing their tasks.<sup>6</sup> However, if the work does not suit the workers' preference, it will be harder for them to feel satisfied and it will be easier for them to feel bored, be arrogant and pose higher demands on the companies.<sup>6</sup>

## Conclusions

Breastfeeding exerted impact on occupational stress and fatigue in the female workers of garment manufacturing companies at the Sobosukawonosraten area of Central Java. Several points to be considered are: (1) The Government has to be consistent in its implementation of Article 2 of the Joint Regulation of the Minister of Women Empowerment, Minister of Labor and Transmigration and Minister of Health Number 48/MEN.PP/XII/2008 on the Intensification of Breastfeeding during Work Hours in Work Places. It is expected that this regulation should no longer be considered by companies as a suggestion, and provision of facilities are fully deliberated in order to support the workers' breastfeeding; (2) Companies should facilitate the breastfeeding that the workers are going through by providing them the right to breastfeed with the

opportunity and facility to pump their breast milk or breastfeed during work hours, as well as setting up storage for the breast milk; (3) The workers should actively implement healthy lifestyle in order to reduce occupational stress and fatigue; hence, they can continue to produce breast milk and support their breastfeeding for the babies, who are the nation's future generation; (5) Further research in the form of in-depth interview should be conducted to identify more causes of the breastfeeding workers' occupational stress and fatigue.

## References

1. Weber D, Janson A, Nolan M, Wen LM, Rissel C. Female employee's perceptions of organisational support for breastfeeding at work: Findings from an Australian health service workplace. *Int Breastfeed J*. 2011;6:19.
2. Chen YC, Wu YC, Chie WC. Effects of work-related factors on the breastfeeding behavior of working mothers in a taiwanese semiconductor manufacturer: A cross-sectional survey. *BMC Public Health*. 2006;6:160.
3. Yimyam S. Breastfeeding, work and women's health among Thai women in Chiang Mai. *Breastfeed Rev* 1998;6(1):17-22.
4. Rojjanasrirat W. Working women's breastfeeding experiences. *MCN Am J Matern Child Nurs*. 2004;29(4):222-227.
5. Tarwaka, Bakri S, Sudiajeng L. *Ergonomi untuk keselamatan, kesehatan kerja dan produktifitas*. Surakarta: Uniba Press; 2004.
6. Setyawati L. *Selintas tentang kelelahan kerja*. Yogyakarta: Amara Books; 2011.
7. Budiono AMS, Jusuf RMS, Pusparini A. *Bunga rampai hiperkes dan keselamatan kerja*, edisi 2. Semarang: Badan Penerbit Universitas Diponegoro; 2003.
8. Ahsan N, Abdullah Z, Fie DY, Alam SS. A study of job stress on job satisfaction among university staff in

- Malaysia: Empirical study. *Eur J Soc Sci.* 2009;8(1):121-131.
9. McGovern P, Dagher RK, Rice HR, Gjerdingen D, Dowd B, Ukestad LK, Lundberg U. Longitudinal analysis of total workload and women's health after childbirth. *J Occup Environ Med.* 2011;53(5):497-505.
  10. Burke RJ. Work stress and women's health: Occupational status effects. *J Bus Ethics* 2002;37:91-102.