Analysis of mental workload and work family conflict with burnout on lecturers who work from home during pandemic

Andikawati Fitriasari[1*], Yurike Septianingrum[1], Nunik Purwanti[1], Nur Ainiyah[1], Erika Martining Wardani[1], Difran Nobel Bistara[1]

ABSTRACT

Introduction: Despite the amount of research on mental workload and work family conflict, there are persist questions about their relation with Emotional Exhaustion, Depersonalization and lack of Personal Accomplishment. This paper attempts to show that the relationship between mental workload and work family conflict on burnout for female lecturers who work from home during the pandemic.

Methods: A cross sectional study was conducted on 50 female lecturers who worked at home. The measurement of mental workload was used by Nasa TLX and work family conflict was developed by the Malaysian version of Kelloway. Maslah Burnout Inventory is used to determine the burnout level. Data analysis used logistic regression to determine the significance between mental workload and work family conflict on the burnout dimension (Emotional Exhaustion, Depersonalization, lack of Personal Accomplishment).

Results: This study found that age, children, length of working, structural position did not significantly affect burnout. There was negative correlation with burnout leveld (p> 0.005). Work family conflict showed a significant in dimension of burnout EE (p=0.028), DP (p=0.011), PA (0.029).

Conclusion: This study has found that generally work family conflict affected burnout in female lecture.

Keywords: mental workload, work family conflict, burnout, pandemic.
Cite This Article: Fitriasari, A., Septianingrum, Y., Purwanti, N., Ainiyah, N., Wardani, E.M., Bistara, D.N. 2022. Analysis of mental workload and work family conflict with burnout on lecturers who work from home during pandemic. *Bali Medical Journal* 11(2): 761-765. DOI: 10.15562/bmj.v11i2.3409

[1]Department of nursing, Faculty of Nursing and Midwifery, Universitas Nahdlatul Ulama Surabaya, Surabaya, 602310, Indonesia;

*Corresponding author:
Andikawati Fitriasari;
Department of nursing, Faculty of Nursing and Midwifery, Universitas Nahdlatul Ulama Surabaya, Surabaya, 602310, Indonesia;
andikawati_f@unusa.ac.id

INTRODUCTION

Work from home is a common condition which has considerable impact on COVID-19. In line with the instructions of the Minister of Education and Culture of the Republic of Indonesia that employees and lecturers are subject to learning and working activities from home.[1] Burnout is difficult to realize while working from home, because the boundaries between family life and work become unclear. Andrew Schwehm, licensed clinical psychologist states that work-from-home burnout occurs when people cannot separate work and family life.[2] Work and family are the most important aspects in women's lives that can lead to demands for psycho-social conflicts in the world of work.[3] Work family conflict occurs when work with family demands imbalanced.[4]

It well known that being an academician needs to show cognitive effort and attention in the work environment. Knowledge and technology must be developed by lecturers with full responsibility. Qualifications of professional education, scientific competence, communication skills, having a work ethic and a high commitment in carrying out the tridharma activities of tertiary institutions must be owned by a lecturer.[5] In addition, to teaching courses in their professional areas, they have the duty of conducting academic researches and making the result of these researches useful publications. They also take on administrative duties in various positions in university.[6] Regarding the workload of lecturers, it can caused job burnout. Job burnout is the fatigue or exhaustion of working in a stressful environment that may result into frustration and anti-social behaviors among employees.[7]

The situation of working from home is very different from the work environment in the office. Online meetings until the evening, receiving assignments from the office or clients when working hours end or on weekends are things that are often experienced while working from home. Lecturers feel that the mental workload is increasing, stress and fatigue have an impact on health.[8] Female lecturers will show more work-family conflict as compared to male lecturers. Women have multiple roles that cause problems in the balance of work and family. While working at home, women are still required to fulfill household and children responsibilities.[9] The combination of mental workload and work family conflict contributes to burnout working from home during the pandemic.

Previous research has established that *burnout* significant occured in women who have more work family conflicts with emotional exhaustion. Burnout is occured in women who have work family conflicts to emotional exhaustion. Burnout begins

with the emergence of prolonged stress.[10] Further research in India, showed that the work environment while working from home is very uncomfortable, stressful, distracting and unable to work productively.[11] Many teaching staff in the hospital experience a lot of stressors related to work family conflicts that have an impact on burnout in college.[12] In several studies, high levels of burnout were found in teaching staff. Stress in the work environment can caused physiological, psychological and behavioral changes.[13]

This paper attempts to determine the relationship between mental workload and work family conflict on burnout for lecturers who work from home during the pandemic.

METHOD

General Background of Research

This randomized control trial was conducted in the Universitas Nahdlatul Ulama Surabaya from April-July 2021. The research subjects were randomly selected according to the sample size formula of 50 respondents. Furthermore, the study subjects were women lecturer who work from home.

Sample of Research

The population in this study were all final year nursing students who met the following criteria: a) Inclusion Criteria : female lectures who working from home, are willing to become respondents and sign an informed consent, b) Criteria Exclusion: lectures who working from home and office.

Instrument and Procedures

Questionnaires were given by respondents in online via google form. Respondents filled out the questionnaire within 20-30 minutes. The questionnaire contains questions regarding demographic information consisting of age, length of work, structural position, children. The mental workload questionnaire based on the National Aeronautics & Space Administration (NASA Task Load Index; NASA TLX) consists of six dimensions, including mental demand, physical demand, time demand, effort, work performance and frustration. The step 1) Rating, calculated from six dimensional

mental workload questionnaire with a range of values (0-100); 2) Weight, given in the form of a comparison consisting of 15 pairs; ; 3) *Mean Weight Workload* (MWW) This is done by multiplying the weight and rating of each dimension and then adding them up, to find out the total workload divided by 15; 4) determine mental workload score categories into 5 categories, 0-9 very low, 10-29 low, 30-49 somewhat high, 50-79 high, 80-100 very high[14], Work family conflict questionnaire was developed by Kelloway et.al to measure work-family conflict used a Likert scale from 1 (strongly disagree) to 5 (strongly agree).[15] The Burnout Inventory (MBI) Questionnaire consists of 22 question items that explain 3 dimensions, including emotional exhaustion (EE consists of 9 items with a range of 0-55, 0-18: Low; 19-26: Moderate; 27-55: High),depersonalization (DP consits 5 items, 0-5: Low; 6-9: Moderate; 10-30: High), personal achievement (PA consist of 8 items 40-50: Low; 34-39:Moderate; 0-33: High).[16]

Data Analysis

This study uses descriptive and inferential analysis methods. The first step is to conduct a descriptive analysis to present demographic data in tabular form. Inferential analysis, using the chi-square test to see the relationship on each respondent's characteristics. The binary logistic regression test was used to see the relationship between the dependent and independent variables where the dependent variable used categories. Analysis of this data using SPSS version 25.0 software.

RESULTS

The results of this study were based on demographic data, the average age of the respondents was 37.42 years (standard deviation 7.357 years) ranging from 28 to 52 years. Most of the respondents who have children by 52%. In the job characteristics data, it shows that most of them have a length of service of more than 5 years by 78%, most of them do not have a position in work by 62%. The mental workload experienced by respondents is mostly in the high category of 70%. In this study, the average work family conflict

experienced by respondents was 49.88 (standard deviation 3.895) ranging from the rather high to very high category.

The results of the binary logistic regression test presented in table 2 show that the somewhat high mental workload level variable has no significant effect on the EE subscale (OR 2.256; 95%CI 0.133-38.255; p=0.573), DP (OR 0.304; 95%CI 0.016-5.921; p=0.432), PA (OR 532473898.1; 95%CI 0.000; p=0.999) while high level on subscale EE (OR 2.680; 95%CI 0.341-21.083; p=0.349), DP (OR 0.941; 95%CI 0.071-12.535; P=0.963), PA (OR 2.917; 95%CI 0.330-25.805; P=0.336). In the work family conflict variable there is a significant difference subscale EE (OR 1.177; 95%CI 1.017-1.362; p=0.028), subscale DP (OR 1.202; 95%CI 1.019-1.417; p=0.011); subscale PA (OR 1.376; 95%CI 1.074-1.763; p=0.029). The results of the univariate linear regression test presented in table 3 show that there are significant differences in the work family conflict variable on the EE subscale (coefficient (SD), 1.849 (0.424); 95%CI 0.994-2.709; p=0.00), ssubscale DP (coefficient (SD), 0.32(0.114); 95%CI 0.091-0.548; p=0.007), subscale PA (coefficient (SD), 0.458 (0.209); 95%CI 0.036-0.888; p=0.034).

The results of the multivariate linear regression presented in table 4 show that there are significant differences in the work family conflict variable on the subscale EE (coefficient (SD), 1.790 (0.371); 95%CI 1.043-2.537; p=0.000), subscale DP (coefficient (SD), 0.27 (0.101); 95%CI 0.068-0.473; p=0.01), subscale PA (coefficient (SD), 0.404 (0.19); 95%CI 0.023-0.786; p=0.038).

DISCUSSION

Respondents in this study were female. This study aims to determine the mental workload and work family conflict variables associated with the three burnout subscales. Demographic characteristics which include age, presence of children, length of work, position show no significant relationship with burnout (p ≥ 0,05). In line with stated that burnout was not significant on age, tenure and marital status, but burnout had a significant effect on gender.[7] Kirilmaz et.al in Mukudan 2019 conducted a study on 43 elementary school teachers stating that age, tenure,

number of children, gender had no impact on burnout levels.[13] In contrast to what Jamaludin (2019) stated, length of work is taken into account in assessing the burnout dimension.[17]

Table 2 show that the somewhat high mental workload level variable has no significant effect on the EE, DP,and PA subscale (p> 0.05). This means that the mental workload variable has no significant effect on burnout. This result contrast with Khandan (2015) states that there is a positive correlation between mental workload and burnout, namely a negative correlation between work performance and emotional exhaustion and a positive correlation between the level of frustration and emotional exhaustion.[7] Ashfort in Pertiwi (2017) argues that a mental workload that is too high can lead to low work productivity and lead to work-related stress. This can lead to burnout symptoms.[5] Based on existing research shows that mental workload has a strong relationship to burnout. This study shows that female lecturers, most of whom have a working period of > 5 years, use their skills, knowledge and abilities in managing time while working from home so that they do not experience burnout. This study does not explain the dimensions of mental workload in detail on burnout.

Table 3 shows the results that work family conflicts are positively related to burnout. This result is in accordance with Greenhaus and Beutells (1985) which states that work family conflict is a dual role conflict between work and family responsibilities. Several literature studies show that there are 3 main forms of work family conflict: time based conflict, strain based conflict, and behavior based conflict.[4] In line with previous research which stated that there was a significant difference between work family conflict and burnout.[12] Research conducted by Zulkarnain (2015) states that there is a positive relationship between work family conflict and burnout. The three dimensions of work family conflict that have a significant relationship with burnout are time based conflict and behavior based conflict. Women workers in Indonesia have work family conflicts in two forms, namely "work affects home" and "home affects work".[18]

There are several differences between working at home and in the office during a pandemic. New habits such as online meetings that are carried out beyond

Table 1. Description of the demographic characteristics of respondents.

Subjects Characteristic	Profile	n (%)	p
Demographics			
Age (years) (Mean±SD)		37.42±7.357	
Children	Have	24(48)	0.887
	No	26 (52)	
Work characteristics			
Length of work	≤ 5 years	11 (22)	0.609
	≥ 5 years	39 (78)	
Structural positions	Yes	19 (38)	0.287
	No	31 (62)	
Mental Workload (Mean±SD)			
	Somewhat high	6 (12)	
	High	35 (70)	
	Very high	9 (18)	
Work Family Conflict (Mean±SD)		49.88±3.895	

Sub-titles (Subchapters) 12-point, Italic, Centered

Table 2. Results of Binary Logistic Regression of MBI (Binary Logistic Regression of MBI).

Variable	EE			Lack of PA			DP		
	OR	95%CI	*p*	OR	95%CI	p	OR	95%CI	p
Demographics									
Age	1.028	0.924-1.144	0.607	1.097	0.955-1.259	0.191	1.064	0.944-1.200	0.309
Children									
Have	1.226	0.172 – 8.729	0.839	1.538	0.115-20.546	0.745	1.550	0.190-12.650	0.682
No	reff	reff		reff	reff		reff	reff	
Work characteristics									
Length of working									
≤ 5 years	1.035	0.000	0.999	1.151E+10	0.000	0.999	836493185.4	0.000	0.999
≥ 5 years	reff	reff		reff	reff		reff	reff	
Structural positions									
yes	0.675	0.143 – 3.188	0.620	0.474	0.80-2.807	0.676	0.885	0.155-5.041	0.890
no	reff	reff		reff	reff		reff	reff	
Mental Workload									
Somewhat high	2.256	0.133 – 38.255	0.573	0.304	0.016-5.921	0.432	532473898.1	0.000	0.999
High	2.680	0.341 – 21.083	0.349	0.941	0.071-12.535	0.963	2.917	0.330-25.805	0.336
Very high	reff	reff		reff	reff		reff	reff	
Work Family Conflict	1.177	1.017 – 1.362	**0.028***	1.376	1.074-1.763	**0.011***	1.202	1.019-1.417	**0.029***

working hours, communication about work after working hours or on weekends make women unable to maintain a balance between office work and family because both are done at the same time.[3] The involvement of women in family responsibilities affects office work assignments. That's the reason women show more signs of fatigue than men.

CONCLUSIONS

The limited review on burnout of female lecturers who work from home provoked us to conduct this research and determine the impact of women's mental workload and work family conflict on the three dimensions of emotional exhaustion (EE), depersonalization (DP), and personal deprivation achievement (PA). The results reveal that female lecturers' work and family conflicts are more prone to fatigue syndrome in the Indonesian situation. As in literature lecturer fatigue, this study shows consistent and inconsistent results in several studies variables with previous research. This shows the complexity of the burnout phenomenon and its potential causes, particularly among female lecturers, require further investigation. Therefore, further studies are needed with different designs and a larger number of samples in order to find out more about the factors that influence mental workload and work family conflict with burnout on lecturers who work from home during the pandemic.

ACKNOWLEDGEMENTS

AUTHOR CONTRIBUTION

All authors contributed to this study's conception and design, data analysis and interpretation, article drafting, critical revision of the article, final approval of the article, and data collection.

Table 3. Results of univariate linear regression MBI.

Demographic		EE			DP			PA		
		Coeff	95%CI	p	Coeff	95%CI	p	Coeff	95%CI	p
Age (years)		-0.037(0.239)	-0.519-0.446	0.879	-0.08(0.064)	-0.209-0.049	0.22	-0.105(0.118)	-0.343-0.133	0.378
Children	Have	0.665(3.25)	-5.889-7.219	0.839	-0.211(0.87)	-1.964-1.543	0.81	1.209(1.603)	-2.024-4.442	0.455
	No									
Work Characteristics	Length of working <5 years >5 years	0.831(4.127)	-7.493-9.155	0.841	0.973(1.104)	-1.254-3.2	0.383	-1.01(2.036)	-5.116-3.095	0.622
	Structural position Yes No	1.981(3.346)	-4.767-8.728	0.557	0.143(0.895)	-1.662-1.949	0.874	-1.258(1.65)	-4.587-2.070	0.450
Mental Workload	Somewhat High, High, Very high	-1.158(2.793)	-6.791-4.475	0.680	-0.18(0.747)	-1.687-1.328	0.811	2.858(1.378)	0.080-5.637	0.044
Work Family Conflict		1.849(0.424)	0.994-2.709	0.00	0.32(0.114)	0.091-0.548	0.007	0.458(0.209)	0.036-0.888	0.034

Table 4. MBI multivariate linear regression results.

Demographic		EE			DP			PA		
		Coeff	95%CI	p	Coeff	95%CI	p	Coeff	95%CI	p
Age (years)										
Have Children										
Work Characteristics	Length of working : <5 years >5 years									
	Structural position Yes No									
Mental Workload	Somewhat High, High, Very high							2.891(1.343)	0.19-5.592	0.036
Work Family Conflict		1.790(0.371)	1.043-2.537	0.000	0.27(0.101)	0.068-0.473	0.01	0.404(0.19)	0.023-0.786	0.038

FUNDING

CONFLICT OF INTEREST

There is no conflict of interest in this manuscript.

ETHICAL CONSIDERATION

This study has been declared ethical by the Ethical Commission for Health Research of the Universitas Nahdlatul Ulama Surabaya.

REFERENCES

1. Afrianty TW, Artatanaya IG, Burgess J. Working from home effectiveness during Covid-19: Evidence from university staff in Indonesia. Asia Pacific Manag Rev. 2021;(xxxx).
2. Yurcaba J. Work-From-Home Burnout Is Real—Here's How to Recover. the Muse.
3. Bakker, B. & Demerouti E. Work-Family Conflict, Coping Strategies and Burnout: A Gender and Couple Analysis Laura. J Work Organ Psychol. 2013;29(3):107–15.
4. Greenhaus JH, Beutell NJ. Sources of Conflict Between Work and Family Roles. Acad Manag Rev. 1985;10(1):76–88.
5. Ella Marliani Pertiwi, Hanifa Maher Denny BW. Hubungan Antara Beban Kerja Mental Dengan Stres Kerja Dosen di Suatu Fakultas. J Kesehat Masy. 2017;5(3):260–8.
6. Akca M, Küçükoğlu MT. Relationships Between Mental Workload, Burnout, and Job Performance. 2019;(January):49–68.
7. Khandan M. Level of Workload and Its Relationship with Job Burnout among Administrative Staff. Int J Occup Hyg. 2015;7(2):53–60.
8. Didin FS, Maharani BP, Mardiono I. Work from home study: mental workload, gender, and calorie needs. J Sist dan Manaj Ind. 2021;5(1):1–7.
9. Handayani A, Afiatin T, Adiyanti M., Himam F. Psychosocial Factors Influencing Work – Family Balance of Working Mothers. Anima, Indones Psychol J. 2015;30(4(1)):178–90.
10. Darmawan AAYP, Silviandari IA, Susilawati IR. Hubungan Burnout dengan Work-Life Balance pada Dosen Wanita. Mediapsi. 2015;01(01):28–39.
11. Umesh U, Harshini C, Kaushik S, Moosa S, Dhinakaran P, Vijai C. Work from home during Corona pandemic. Work From Home Dur Covid-19 Pandemic Employees Percept Exp. 2021;58(4):3397–407.
12. Ejaz Ahmed Khan, Asghar Ali Shah, Muhammad Akbar JMS. Work-Family Conflict And Burnout Among Lecturers Of Public Sector Colleges. Pak J Psychol. 2012;43(2):93–107.
13. Mukundan J, Ahour T. Burnout Among Female Teachers In Malaysia. J Int Educ Res. 2011;7(3):25–38.
14. Widiasih W, Nuha H. Workload Analysis Using Work Sampling and NASA-TLX for Employee of Private University in Surabaya. J Ilm Tek Ind. 2019;18(2):134–41.
15. Sanaz A, Syaqirah A, Khadijah S. Validation study of the malay version of the work-family conflict questionnaire. Malaysian J Med Sci. 2014;21(1):50–7.
16. Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Schwab RL. Maslach Burnout Inventory: instruments and scoring keys. In: Maslach Burnout Inventory. Mind Garden, Inc. info@ mindgarden.com; 2021.
17. Jamaludin II, You HW. Burnout in relation to Gender, Teaching Experience, and Educational Level among Educators. Educ Res Int. 2019;2019.
18. Zulkarnain Z, Yusuf EA, Pulungan AV. The Impacts of Work-Family Conflict on Burnout among Female Lecturers. Makara Hum Behav Stud Asia. 2015;19(2):87.