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Assesment of Occupational Stressor and Stress Response among Election Officers (*KPPS*) in 2019

Dewi Sumaryani Soemarko[1,2], Muhammad Ilyas[1,2], Martha Landauw[3*], Nuri Purwito Adi[1,2], Levina Chandra Khoe[1]

[1]Occupational Medicine Division, Department of Community Medicine, Faculty of Medicine, Universitas Indonesia
[2]Occupational and Environmental Health Research Center IMERI, Faculty of Medicine, Universitas Indonesia
[3]Occupational Medicine Specialist Program, Faculty of Medicine, Universitas Indonesia

*Corresponding author: Dewi Sumaryani Soemarko
E-mail: *mlandauw@gmail.com*

Abstract

Introduction: The 2019 general election in Indonesia was the first general election to be held simultaneously and election officers (*KPPS*) had to complete the vote count on the same day with additional ballot papers. This situation caused high mortality and morbidity among *KPPS* officers due to stress and fatigue caused by job overload. This study was aimed to explore the factors related stress response in 2019 election *KPPS* officers
Methods: A cross-sectional study design was conducted to the issue under the study included 80 data of *KPPS* officers at Polling Station (TPS) in Jakarta, Banten, and Yogyakarta. Occupational stressor and stress response was assesed with NBJSQ bahasa Indonesia. Multiple logistic regression models were used to explore factors associated with stress response.
Results: The most perceived occupational stressor experienced by the 2019 General Election *KPPS* officers in this study were quantitative job overload (47,5%).The stress response that occurred in the 2019 General Election *KPPS* officers in this study was fatigue (17.5%). There was no relationship between occupational stressor and individual factors with stress response (p>0.05)
Conclusion: This study showed that quantitative job overload was a major occupational stressor among *KPPS* officers in general election 2019. The stressor can trigger the incidence of heart attacks in predisposed individuals.
Keywords: occupational, stressor, stress, response, election, KPPS

Abstrak

Pendahuluan: *Pemilu 2019 di Indonesia merupakan pemilu pertama yang dilaksanakan serentak dan Kelompok Penyelenggara Pemungutan Suara (KPPS) harus menyelesaikan penghitungan suara di hari yang sama dengan penambahan kertas suara. Keadaan ini menyebabkan petugas KPPS meninggal dan sakit diduga akibat stres dan kelelahan akibat beban kerja yang berlebihan. Penelitian ini bertujuan untuk mengetahui faktor-faktor yang berhubungan dengan respon stres pada petugas KPPS Pemilu 2019.*
Metode: *Desain studi potong lintang menggunakan data sekunder dilakukan terhadap masalah yang diteliti meliputi 80 data petugas KPPS di TPS di Jakarta, Banten, dan Yogyakarta. Stresor kerja dan respons stres dinilai dengan NBJSQ bahasa Indonesia. Beberapa model regresi logistik digunakan untuk mengeksplorasi faktor-faktor yang terkait dengan respons stres.*
Hasil: *Stresor pekerjaan yang paling dirasakan oleh petugas KPPS Pemilu 2019 dalam penelitian ini adalah kelebihan beban kerja kuantitatif (47,5). Respon stres yang paling banyak terjadi pada petugas KPPS Pemilu 2019 dalam penelitian ini adalah kelelahan (17,5%). Tidak ada hubungan antara stresor pekerjaan dan faktor individu dengan respon stres (p>0,05)*
Kesimpulan: *Penelitian ini menunjukkan bahwa kelebihan beban kerja kuantitatif merupakan stresor kerja utama di kalangan petugas KPPS pada pemilihan umum 2019. Stresor tersebut dapat memicu kejadian serangan jantung pada individu yang memiliki predisposisi.*
Kata kunci: *stressor, pekerjaan, respon, stres, pemilu, petugas, KPPS*

Introduction

General election in Indonesia on 2019 was the first time in the country›s history. Elections in Indonesia were previously held separately, with a 2008 elections law regulating that presidential and legislative elections be held at least three months apart from one another. Following a 2013 Constitutional Court lawsuit, however, it was decided that the 2019 elections would be held simultaneously. The president, the vice president, members of the People's Representative Council (*DPR)*, People's Representative Council (*DPR*), provincial council, and regency/municipal council (*DPRD Provinsi* and *DPRD Kabupaten/Kota*) members and Regional Representative Council (*DPD*) were elected on the same day.[1] Election officers (*KPPS*) has responsibility for the implementation of elections starting from the announcement of the final voter list, making invitation letters to voters, preparation of Polling Station (*TPS*), organizing elections, as well as counting ballots that must be carried out on the same day. Voters were given five ballot papers, these additional ballot papers increasing the workload of *KPPS* in the 2019 General Election.[2] *KPPS* officers with an increased workload, worked long hours at a time. This situation had a high risk of causing health problems, both physical and psychological. Following the election, more than 7 million *KPPS*, among which 527 *KPPS* officers died and 11,239 fell ill based on data from the Ministry of Health as of May 16, 2019.[3] The possible cause of death for *KPPS* officers in the 2019 election was heart failure or stroke, which could be triggered by fatigue, dehydration, or stress.[4] Non-routine work with unclear daily working time limits, demands for high workloads and responsibilities, the target time for completion of work immediately, and mental pressure from interested parties can be occupational stressor experienced by *KPPS* officers in general election 2019.[5]

Stress response may result when people are exposed to occupational stressor. These response may be emotional such as frustation, anger, and irritability; psychological (anxiety and depression) and/or physiological complaints such as headaches, palpitation, etc. These stress response may develop into more serious negative health outcomes, such as chronic fatigue, burnout, musculoskeletal problems and cardiovascular disease. Individual factors, such as age, gender, level of education, marital status and history of chronic illness may interact with occupational stressor and either exacerbate or alleviate their effects.[6]

In this study, we chose to use Indonesian New Brief Job Stress Questionnaire (NBJSQ) Bahasa Indonesia to determine psychosocial factors in *KPPS* officers for the 2019 General Election. The NBJSQ is a fairly new instrument developed by the Inoue et al in 2014 that was translated into Indonesian in 2019. This questionnaire is said to be able to assess job demands, work resources and outcomes of workers and organizations more comprehensively and multidimensional.[7] Based on this, we are interested in further researching the relationship between occupational stressors and response stress based on the Indonesian NBJSQ. The occupational stressors that will be studied are quantitative job overload, interpersonal conflict, emotional demands, role conflict, and workself balance (negative) while the stress response studied are anger-irritability, fatigue, anxiety, depression, and physical reactions.

Method

This was a cross-sectional study conducted in TPS where there were *KPPS* officers who died in 2019 election day, in Jakarta, Banten, and Yogyakarta. All the data was collected in December 2021 to explore the factors related stress response in *KPPS* officers during 2019 election day. The sample size was 80 data of *KPPS* officers using a total sampling method. The dependent variable was response stress (anger-irritability, fatigue, anxiety, depression, and physical reaction), and independent variables were occupational stressor: quantitative job overload, interpersonal conflict, emotional demands, role conflict, workself balance negative, and individual factors: age, gender, marital status, education, history of chronic disease. All individual factors were categorized as follows: Age (≥ 40 and < 40); gender (male and female); marital state (married and single); education (> highschool and ≤ high school). History of chronic disease included in this study were diabetes mellitus, hypertension, and heart disease.

This study used the Indonesian version of New Brief Job Stress Questionnaires that had 63 questions with answer choices 1 – 4 to assess occupational stressor and stress response. The Indonesian NBJSQ showed acceptable validity and reliability with the overall Cronbach Alpha = 0.904. The cut-off score of each scale (or item) for both of occupational stressor and stress

response, use the average score 2.25 where a higher score indicates no occupational stressor and stress response.

The data were collected, and the SPSS version 20.0 was used to analyze the data using a descriptive, chi-square or fisher exact to determine the variables included in the multivariate with criteria p<0.2, and logistic regression with a significance level of p< 0.05.

Results

In this study, 80 data were obtained. All the data was complete and included in the analysis.

Data in this study showed that the majority respondents are male (68,75%), aged over 40 years (62,5%), married (65%), with high school education (62,5%), and have no history of chronic illness (83,75%). The most perceived occupational stressor by respondents was quantitative job overload, followed by emotional demands. The most common stress response was fatigue. Detailed information on the basic characteristics can be seen in Table 1.

Based on bivariate analysis (table 2) occupational stressor and individual factors were determined which were included in the logistic regression test (p<0,2) and were the determinants of the stress response. Based on logistic regression analysis, this study found that there is no relationship between occupational stressor and individual factors with stress response p > 0,05 (table 3)

Discussion

In this study, the majority of *KPPS* officers are male and aged 40 years and over, this is in accordance with research conducted by Ismanu at 49 TPS, that *KPPS* officers consist of 78% men and 47% over 40 years.[8] Men in face of occupational stressors have a better focus on problems than women who are more involved in their emotions in solving problems. However, Zwicker et al said that women seek more social support in dealing with stress, thereby reducing physical complaints that arise due to stress.[9] Ages over 40 years of age handle stress related to work better with increasing age because they have maturity in thinking, thoroughness and perseverance.[10] However, an unpleasant job at this time was associated with the onset of physical, mental and cognitive disorders, as well as a higher mortality rate.[11] *KPPS* officers in this study were also mostly married where Poloski et al in their study stated that workers who married experience higher levels of stress than single, perhaps because of work conflicts with their households.[10] The majority of *KPPS*'s education level

Table 1. Characteristics of demographic, occupational stressor, and response stress of *KPPS* officers (n=80)

Characteristics	n (%)
Age (years)	
≥40	50 (62,5)
<40	30 (37,5)
Gender	
Male	55 (68,75)
Female	25 (31,25)
Marital state	
Married	64 (80)
Single	16 (20)
Education	
>Highschool	19 (23,75)
≤High school	61 (76,25)
Chronic disease	
Yes	13 (16,25)
No	67 (83,75)
Occupational stressor	
Quantitative job overload	38 (47,5)
Interpersonal conflict	1 (1,25)
Emotional demands	21 (26,25)
Role Conflict	14 (17,5)
Workself balance negative	14 (17,5)
Stress response	
Anger-Irritability	8 (10)
Fatigue	14 (17,5)
Anxiety	9 (11,25)
Depression	9 (11,25)
Physical stress	6 (7,5)

Table 2. Relationship between occupational stressor and individual factors with stress response

Variable	Anger-Irritability			Fatigue			Anxiety			Depression			Physical stress		
	n (%)			n (%)			n (%)			n (%)			n (%)		
	Yes	No	p value	Yes	No	p value	Yes	No	p value	Yes	No	p value	Yes	No	p value
Age (years)															
≥40	2 (2,5)	48 (60)	0,047*	6 (7,5)	44 (55)	0,095*	2 (2,5)	48 (60)	0,012*	3 (3,75)	47 (58,75)	0,073*	2 (2,5)	48 (60)	0,190*
<40	6 (7,5)	24 (30)		8 (10)	22 (27,5)		7 (8,75)	23 (28,75)		6 (7,5)	24 (30)		4 (5)	26 (32,5)	
Gender															
Male	7 (8,75)	48 (60)	0,424	11 (13,75)	44 (55)	0,531	7 (8,75)	48 (60)	0,712	8 (10)	47 (58,75)	0,260	4 (5)	51 (63,75)	1,000
Female	1 (1,25)	24 (30)		3 (3,75)	22 (27,5)		2 (2,5)	23 (28,75)		1 (1,25)	24 (30)		2 (2,5)	23 (28,75)	
Marital status															
Married	5 (0)	59 (73,75)	0,194*	11 (13,75)	53 (66,75)	1,000	5 (6,25)	59 (73,75)	0,073*	6 (7,5)	58 (72,5)	0,373	4 (5)	60 (75)	0,594
Single	3 (3,75)	13 (16,25)		3 (3,75)	13 (12,25)		4 (5)	12 (15)		3 (3,75)	13 (16,25)		2 (2,5)	14 (17,5)	
Education															
≤High school	8 (10)	53 (66,25)	0,188*	8 (10)	53 (65,25)	0,086*	8 (10)	53 (65,25)	0,687	8 (10)	53 (66,25)	0,678	5 (6,25)	56 (70)	1,000
>High school	0 (0)	19 (23,75)		6 (7,5)	13 (16,25)		1 (1,25)	18 (22,5)		1 (1,25)	18 (22,5)		1 (1,25)	18 (22,5)	
Chronic disease															
Yes	0 (16,25)	13 (16,25)	0,341	1 (1,25)	12 (15)	0,446	0 (0)	13 (16,25)	0,342	0 (0)	13 (16,25)	0,342	0 (0)	13 (16,25)	0,582
No	8 (83,75)	59 (73,75)		13 (16,25)	54 (67,5)		9 (11,25)	58 (72,5)		9 (11,25)	58 (72,5)		6 (7,5)	61 (76,25)	
Quantitative job overload															
Yes	2 (2,5)	36 (45%)	0,269	6 (7,5)	15 (18,75)	0,930	4 (5)	34 (46,25)	1,000	3 (3,75)	35 (43,75)	0,342	4 (5)	34 (42,5)	0,416
No	6 (7,5)	36 (45%)		8 (10)	51 (63,75)		5 (6,25)	37 (42,5)		6 (7,5)	36 (45)		2 (2,5)	40 (50)	

Variable	Anger-Irritability			Fatigue			Anxiety			Depression			Physical stress		
	n (%)			n (%)			n (%)			n (%)			n (%)		
	Yes	No	p value	Yes	No	p value	Yes	No	p value	Yes	No	p value	Yes	No	p value
Interpersonal conflict															
Yes	0 (0)	1 (1,25)	1,000	1 (1,25)	0 (0)	0,175*	1 (1,25)	13 (16,25)	0,112*	0 (0)	1 (1,25)	1,000	1 (1,25)	0 (0)	0,075*
No	8 (10)	71 (88,75)		13 (16,25)	66 (82,5)		8 (10)	58 (7,25)		9 (11,25)	70 (87,5)		5 (6,25)	74 (92,5)	
Emotional demands															
Yes	2 (2,5)	19 (23,75)	1,000	6 (7,5)	15 (18,75)	0,178*	3 (3,75)	18 (22,5)	0,691	2 (2,5)	19 (23,75)	1,000	3 (3,75)	18 (22,5)	0,182*
No	6 (7,5)	53 (66,25)		8 (10)	51 (63,75)		6 (7,5)	53 (66,25)		7 (8,75)	52 (65)		3 (3,75)	56 (70)	
Role conflict															
Yes	0 (0)	14 (17,5)	0,339	5 (6,25)	9 (11,25)	0,063*	1 (1,25)	13 (16,25)	1,000	0 (0)	14 (17,5)	0,348	1 (1,25)	13 (16,25)	1,000
No	8 (10)	58 (72,5)		9 (11,25)	57 (71,25)		8 (10)	58 (72,5)		9 (11,25)	57 (71,25)		5 (6,25)	61 (76,25)	
Workself balance negative															
Yes	3 (3,75)	11 (13,75)	0,141*	3 (3,75)	11 (13,75)	0,703	3 (3,75)	11 (13,75)	0,188*	3 (3,75)	11 (13,75)	0,188*	2 (2,5)	12 (15)	0,281
No	5 (6,25)	61 (76,25)		11 (13,75)	55 (68,75)		6 (7,5)	60 (75)		6 (7,5)	60 (75)		4 (5)	62 (77,5)	

*Variables with p<0.20 were included in the logistic regression test

Tabel 3. Determinant factors of stress respons

Stress response	Variable	p value	cOR (CI 95%)	aOR (CI 95%)
Anger-Irritability	Age			
	≥40	0,120	0,1(0,03-0,8)	0,2 (0,03-1,4)
	<40			
	Marital state			
	Married	0,864	0,4(0,1-1,7)	0,8 (0,1-5,0)
	Single			
	Education			
	≤High school	0,998	-	-
	>High school			
	Workself balance (negative)	0,428	3,3(0,7-15,9)	2,0 (0,3-11,5)
Fatigue	Age			
	≥40	0,101	0,3(0,1-1,2)	0,3 (0,9-1,2)
	<40			
	Education			
	≤High school	0,075	0,3(0,1-1,1)	0,2 (0,06-0,9)
	>High school			
	Interpersonal conflict	1,000	-	-
	Emotional demands	0,917	2,5(0,7-8,5)	0,9 (0,1-6,9)
	Role conflict	0,295	3,5(0,9-12,9)	3,3 (0,3-31,4)
Anxiety	Age			
	≥40 tahun	0,184	0,1(0,02-0,7)	0,2 (0,02-1,1)
	<40 tahun			
	Marital state			
	Married	0,718	0,2(0,06-1,0)	0,7 (0,1-4,0)
	Single			
	Interpersonal conflict	1,000	-	-
	Workself balance (negative)	0,876	2,7(0,6-12,5)	1,1 (0,1-7,1)
Depression	Age			
	≥40	0,113	0,2(0,06-1,1)	0,3 (0,06-1,3)
	<40			
	Workself balance (negative)	0,427	2,7(0,6-12,5)	1,9 (0,4-9,5)
Physical stress	Age			
	≥40	0,293	0,2(0,04-1,5)	0,3 (0,05-2,3)
	<40			
	Interpersonal conflict	1,000	-	-
	Emotional demands	0,469	3,1(0,5-16,7)	2,0 (0,3-13,2)

is high school or equivalent, in the study of Michael et al. it is stated that low level of education causes higher levels of stress (mean difference = 15.6) while people with higher education are more optimistic and have more resources to deal with stress.[12] In this study, it was also found that the majority of *KPPS* officers did not have a history of diabetes mellitus, heart disease, and hypertension.

Logistic regression analysis was used to identify determinants of stress response. This study found that no significance relationship between occupational stressor and individual factors with stress response. Quantitative job overload at the 2019 Election *KPPS* was a major occupational stressor, when they need a longer time to complete their work, and completing the vote count on the same day. However, in this study quantitative job overload was not associated with the stress response: anxiety-anger, fatigue, anxiety, depression, and physical reactions. This might be happened because the quantitative job overload experienced by the 2019 Election KPPS took place in a short period of time. Meijman describes fatigue as a normal consequence of short-term loads resulting from work during the working day. In healthy workers, fatigue that arises will return with adequate rest.[13] In a study conducted by Lepore et al comparing chronic stressors (≥ 9 months) with episodic stressors (< 1 month) showed that chronic stressors were associated with high levels of stress. Psychological stress, increased cardiovascular response to stress testing, and slow cardiovascular recovery to stress testing.[14] However, Kamarck et al said episodic stress can trigger certain diseases and the incidence of heart attacks in predisposed individuals. The stages of the risk of sudden death related to psychological factors (stressors) are as follows: Background factors (atherosclerosis, pre-existing myocardial infarction), priming processes (vasoconstriction, platelet aggregation, plaque rupture), and triggering events (ventricular tachycardia/ fibrillation, bradyarrhythmia) where the autonomic nervous system mediates psychological factors (stressors) at each of these stages. In the presence of stressors the body activates the hypothalamic system, the sympathetic nervous system which then activates adrenal function, thereby increasing the heart rate, increasing blood flow to the muscles, heart, and brain. Where if the individual already has a background factor, it will enter the next stage and lead to sudden death.[15]

The other occupational stressor such as interpersonal conflict is not related to the stress response, because only one respondent feels the conflict. Interpersonal conflict is a stressor that is almost not experienced by *KPPS* officers because usually they already know each other and live in the same area that close to the *TPS*. Ismanu said that *KPPS* recruitment only tends to a few residents who happen to have good relations with community administrators.[8] *KPPS* officers must be able to deal with various characteristics of voters during voting as well as differences of opinion between witnesses, party sympathizers/supporters or party representatives when counting votes, this raises emotional demands. In dealing with various problems in the field, *KPPS* is required to harmonize the emotions that arise as a result of these demands. In this study, the emotional demands faced by *KPPS* officers did not have a relationship with the stress response. Maxwell et al mention that emotional demands at work do not always lead to negative response, the tendency to hide emotions is more likely to elicit negative response such as mental fatigue rather than pretending or aligning emotions with the situation.[16] In this study, the role conflict experienced by *KPPS* officers was 17.5%. There was no relationship between role conflict and stress response in *KPPS* officers. Jones explained that with role conflict, individuals become open to various perspectives, become more flexible, and expand information sources. Role conflict is used to discuss each other so that it generates energy at work and reduces boredom.[17] The workself balance (negative) was also experienced by *KPPS* officers at 17.5%. However, there was no relationship between workself balance (negative) and stress response. Based on the research of Jansen et al. work-family conflict has implications for recovery from fatigue due to prolonged work.[18] As with the consequences of job overload on fatigue, this did not happen in the *KPPS* officers where the consequences of short-term work were quite overcome with rest.

In this study individual factors like age, gender, education level, marital status, and history of chronic illness have no relationship with stress response. The ability to deal with work-related stress is better with increasing age because they have maturity in thinking, accuracy and persistence, as well as knowledge from previous work experience.[10] However, on the other hand, old age is associated with decreased physical capacity and cognition that will causing this group to become more stressed. In the study of Rauschenbach et al., it was stated that knowledge from previous work experience and the decrease in physical capacity and cognition experienced by older people compensated

each other for the work-related stress.[19] In several studies, gender differences play a role in work stress, and it is said that women experience higher stress than men. However, other research argues that gender does not play a role in stress because there are many other factors that need to be considered such as personality, social support, culture, family responsibilities, and others.[20] In the study of Michael et al. stated that low levels of education lead to higher levels of stress experienced, while people with higher education are more optimistic and have more resources to deal with stress.[12] However, in this study no significant relationship was found, so it can be concluded that the requirements for a high school level of education are adequate for work as a *KPPS* officer. Poloski et al mentioned that married workers experience higher levels of stress than singled workers, possibly due to work conflicts with their households.[10] The consequences of work-family conflicts according to Jansen et al have implications for recovery from exhaustion due to prolonged work. the same as the consequences of job overload on fatigue,[18] this did not happen in *KPPS* officers where the consequences of short-term work were quite overcome with rest. History of chronic illness was not associated with the stress response. Bunker et al mentioned depression as a risk factor for heart disease.[21] However, in Balog et al. study which compared depressive symptoms related to occupational stressors with stressors outside of work in women with heart disease, no association was found between depressive symptoms associated with oocupational stressors in women with heart disease.[22] Depression related to hypertension was described by Michal et al, where the lifestyle (smoking, drinking alcohol, not doing physical activity) of people with depression increases the occurrence of hypertension.[23] Likewise with diabetes mellitus Khaledi et al stated that 28% of people with diabetes mellitus suffer from depression.[24] However, there has been no further research on the relationship between diabetes and hypertension with the development of work-related stress response.

Some limitations should be acknowledged and considered. This data collected from interviews using questionnaires conducted 6 months after the election so that recall bias can arise where respondents can have difficulty recalling things they felt while serving as *KPPS* officers, especially the stress response they felt. Although in general the number of samples has exceeded the minimum sample, there is no prevalence of stress response based on the NBJSQ so that the prevalence of work-related stress is used in general, causing the number of samples in this study to be limited for each of the stress response.

Future studies are required to understand that might be other occupational stressor beside the job as *KPPS* officers. Further study can be conducted to detect the activation of autonomic nervous system as mediating factors such as increased heart rate and blood pressure after work that has episodic stress exposure. It is suggested to carry out health examination as a requirement for *KPPS* recruitment to detect the risk of heart disease which can cause sudden death.

Conclusion

In conclusion, quantitative job overload was a major occupational stressor among *KPPS* officers in general election 2019. The stressor can trigger the incidence of heart attacks in predisposed individuals.

Conflict of Interest

All authors declare that there is no conflict of interest in this research

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