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Perceived psychological reactions to second wave of pandemic COVID-19 among working adult Indonesians: An online survey study

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ABSTRAK

Latar Belakang: Pandemi Corona Virus Disease (Covid-19) menyebabkan berbagai gangguan kesehatan, termasuk masalah kesehatan mental yang serius. Sehingga mendapatkan wawasan tentang munculnya masalah kesehatan mental, seperti ketakutan, kecemasan, dan stress, sebagai respon gelombang kedua wabah Covid-19 di masyarakat menjadi sangat penting.

Tujuan: Penelitian ini bertujuan untuk mengidentifikasi reaksi psikologis dan kaitannya dengan karakteristik pekerja Indonesia yang tinggal di lima kota metropolitan di Pulau Jawa pada gelombang kedua pandemi Covid-19.

Metode: Studi dengan pendekatan cross-sectional ini melibatkan total 916 responden dari lima kota metropolitan di Pulau Jawa yang dengan sukarela mengisi survei secara anonym. Data diambil dengan menggunakan versi Bahasa Indonesia dari kuesioner Perceived Stress Scale (PSS), Covid-19 Anxiety Scale (CAS), dan Fear of Covid-19 Scale (FCS) yang dibagikan menggunakan formulir online. Analisis bivariat dan multivariat dilakukan dengan menggunakan metode non parametrik karena data berdistribusi tidak normal. Signifikansi untuk pengujian hipotesis ditetapkan dengan p-value 0,05 pada Interval Kepercayaan 95%. Data dianalisis dengan menggunakan perangkat lunak STATA14 dari StataCorp.

Hasil: Sebanyak 916 responden dilibatkan, dengan median usia 28 tahun. Ketakutan dan kecemasan yang dirasakan terhadap Covid-19 pada individu pekerja tergolong rendah (35,92% dan 40,94%), namun berada pada tingkat stres sedang dan tinggi (31,88% dan 45,52%). Setelah menyesuaikan semua predictor dalam analisis didapatkan bahwa usia merupakan prediktor yang signifikan terhadap tingkat ketakutan ($p < 0,001$), kecemasan ($p = 0,05$), dan stres ($p < 0,001$). Vaksinasi dosis pertama secara signifikan memprediksi penurunan rasa takut terhadap Covid-19 ($p = 0,045$).

Kesimpulan: Bertambahnya usia satu tahun memprediksi berkurangnya rasa takut, cemas, dan persepsi stres terhadap Covid-19. Vaksinasi dosis pertama secara signifikan mengurangi ketakutan terhadap Covid-19.

KATA KUNCI: ketakutan; kecemasan; stress; reaksi psikologis; COVID-19

ABSTRACT

Background: The Corona Virus Disease (Covid-19) pandemic caused serious health consequences including mental health issues. Thus, gaining insight into the emergence of mental health problems including fear, anxiety and stress in society during the second wave Covid-19 pandemic is imperative.

Objectives: This study aimed to identify the psychological reactions of working Indonesians living in five metropolitan cities in Java Island and its association with personal characteristics during the second wave Covid-19 pandemic.

Methods: This cross-sectional study included a total of 916 respondents from five metropolitan cities in the Island of Java that was voluntarily completing the anonymous online survey. The data were administered by using the Indonesian version of Perceived Stress Scale (PSS), Covid-19 Anxiety Scale (CAS), and Fear of Covid-19 Scale (FCS). Bivariate and multivariate analysis were performed using non-parametric methods due to non-normal distribution data. Significance for hypothesis testing was set with p-value 0.05 on 95% Confidence Interval. Data was analyzed using software STATA14 of StataCorp.

Results: A total of 916 respondents were included, with the median of age being 28 years old. Perceived fear and anxiety to Covid-19 among working individuals was low (35.92% and 40.94%), yet they were on moderate and high-levels of stress (31.88% and 45.52%) respectively. After adjusted all predictors, age was a significant predictor to the level of fear ($p < 0.001$), anxiety ($p = 0.05$), and stress ($p < 0.001$). The first dose of vaccination significantly predicted a reduction in the fear of Covid-19 ($p = 0.045$).

Conclusions: Increasing a year of age predicted the reduction of fear, anxiety, and perceived of stress to Covid-19. First dose vaccination significantly reduced the fear to Covid-19.

KEYWORD: fear; anxiety; perceived-stress; psychological reaction; COVID-19

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INTRODUCTION

Coronavirus disease 2019 outbreaks, known as Corona Virus Disease 2019 (Covid-19) or Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-Cov-2), was declared officially as a pandemic by the World Health Organization (WHO) in early 2020 (1). The outbreak has provoked unprecedented public health measures to prevent the spread and to protect the worsening effects of the virus on a whole aspect of human life (2). Implications of the public health measures triggered

unsettling economic, social, and health consequences that were directly or indirectly correlated with mental problems (3). Evidence indicated that there was a correlation between the occurrence of infectious disease outbreaks and mental health symptoms and disorders including depression, anxiety, and posttraumatic stress disorders among survivors, healthcare providers, and affected communities (2, 4). These mental issues emerged due to fear or stress of the risk of

being infected, the loss of loved ones, social isolation, physical and emotional fatigue, financial insecurity and massive information from the media(5). These consequences need to be addressed appropriately to reduce massive late outcomes of pandemic Covid-19.

Recent studies indicated that psychological problems occurred globally during the Covid-19 pandemic such as increasing the prevalence of anxiety, depression, and psychological distress (6, 7). These mental problems occurred not only as a result of the pandemic situations, but also it was due to the mitigation measures for Covid-19. Study indicated that mitigation measures on Covid-19 caused high prevalence in depression, anxiety, distress, and insomnia, where the higher risk for these problems were on those with noninfectious chronic diseases, infected Covid-19 patients, and quarantined persons (2, 8). According to Benerjee et al., pandemic Covid-19 increased the prevalence of nonpsychotic depression, pre-anxiety, psychosomatic concerns, alcohol-related disorders, and insomnia in the general population (9). In addition, the pandemic had correlation with psychological symptoms in older adults more with complaints of fatigue and pain and these complaints directly associated with social media use, misinformation, xenophobia and social distancing (9). Psychosocial problems were also reported from frontline health workers in relation to the lack of adequate personal protective equipment, workload, and discrimination in the form of guilty, stigma, anxiety poor quality of sleeps (9). This means that awareness for the rise of mental problems during pandemic Covid-19 is crucial due to uncertainty from the pandemic.

As evidence of the high prevalence of mental health problems, study suggested that to reduce risk of emerging mental health issues, early recognition and initiation of interventions during pandemic period are imperative (7). Some countries remain on status alert of high daily positive cases of Covid-19, thus, consequences of the pandemic on mental health may be still high. The need for early identification of mental problems are important. Like in other countries, during the second wave of Covid-19 outbreaks, Indonesia applied firm mitigation measures for Covid-19, even though country lockdowns were not implemented. In response to exponentially increased daily positive cases and mortality rate, the country restricted public activities and social interactions encompassing limited human traffic across regions, closing school, and office activities (10). With these measures, there will be psychological distress in the general population. Instead of suffering economic downturns, we assume emerging psychological consequences from the recent second wave Covid-19. Study on psychological reactions on the second wave of Covid-19 outbreaks for the general population in Indonesia needs further clarification. Conducting surveys to identify psychological responses in the general population amid the second time Covid-19 attack, low coverage and high hesitance of vaccination programs (11) will provide important data for mitigation purposes. Our study aimed to examine the perceived psychological reactions of the vaccinated or unvaccinated working general population in five metropolitan cities in Java Island, Indonesia.

MATERIALS AND METHODS

This was cross-sectional study conducted in the period March to September 2021. The aim of study was to examine the psychological reactions and to determine its predictors among Indonesian working adults in Java Island.

Participants were recruited using an anonymous online survey with a snowball sampling strategy. A total of 1416 participants aged 18 and older of the general population in five metropolitan cities in Java Island (Jakarta, Bandung, Yogyakarta, Semarang, and Surabaya) – Indonesia completed an online survey, of which 916 working individuals were included in the analysis. Respondents' who were sick, unable to complete online survey, and not completing informed consent were excluded.

Demographic Characteristics

Participants completed demographic data including age, gender, level of education, job status, vaccination status, dose of vaccination, hesitance of Covid-19 vaccination, perceived time to contact with high-risk people at work, physical distancing at work, and risk of job on Covid-19. Educational level is categorized into elementary level (1), secondary level (2) and graduate level (3). The question to ask the job status is 'do you currently working' with the response yes working (1) and not working (0). We identify vaccination status by asking 'do you vaccinated?' and the response is dichotomized in 2= yes 'vaccinated', 1= 'no vaccinated yet', 0= 'refuse vaccination'. The dose of vaccinated is determined as completed two doses (2), received one dose (1), and none (0). Hesitance of Covid-19 vaccination is asked with the question 'do you

believe that vaccination Covid-19 is able to protect you from being infected by coronavirus 2019'. There are three responses to this question, 0= unbelieve, 1= hesitance, 2= believe.

Perceived Stress Scale

The Indonesian version of 10-items Perceived Stress Scale (PSS) was administered. PSS is a classical stress assessment instrument which originally developed in 1983 (12). The scale is designated to measure the effects of a situation on feeling and perceived stress. PSS consists 10-items (e.g. "In the last month, how often have you been upset because of something that happened unexpectedly? ") that is rated on a four-point Likert scale from 0 (never) to 4 (very often). Individual scores of PSS can range from 0 to 40 with higher scores indicating higher perceived stress. PSS score is determined by firstly reversing the scores for question 4, 5, 7, and 8. The 10-items measures levels of stress in three categories; 1=low stress if the score is below 13, 2=moderate stress when the score is between 14 to 26; and 3=high perceived stress if the score is 27 or above. The original PSS has good validity ($r = .65$) and reliability (Cronbach alpha = $.84$)(12).

Covid-19 Anxiety Scale

Covid-19 related anxiety was measured with Indonesian version of Covid-19 Anxiety Scale (CAS) (13). It is a 7-items scale designated to measure psychological reactions to pandemic Covid-19. The items include questions; 'I have trouble relaxing when I think about Covid-19', 'I feel anxious about Covid-19', 'I feel uneasy when reading news about Covid-19', 'I feel like I may panic when I update myself about Covid-19', 'I feel bad when thinking about Covid-19', 'I feel heart

racing when I read about Covid-19', and 'I am afraid of being infected with Covid-19'. Each item is rated on a five-point Likert scale ranging from 0 (not applicable to me) to 3 (very applicable to me). Cronbach alpha for CAS was high (.86) and Content Validity Coefficient for the scale was .97 (13).

The Fear of Covid-19 Scale

Level of fear on covid-19 was assessed by using 7-items of Indonesian version of the fear of Covid-19 scale (14). The scale is to measure the fear from the consequences of spreading Covid-19 cases. The seven questions are 'I am most afraid of coronavirus-19', 'It makes me uncomfortable to think about coronavirus-19', 'My hands become clammy when I think about coronavirus-19', 'I am afraid of losing my life because of coronavirus-19', 'When watching news and stories about coronavirus-19 on social media, I become nervous or anxious', 'I cannot sleep because I'm worrying about getting coronavirus-19', 'My heart races or palpitations when I think about getting coronavirus-19'. Response of each item is graded as one if 'strongly disagree' and five when 'strongly agree'. Internal consistency of the fear of Covid-19 scale was good (Cronbach alpha = .82), meanwhile item total correlation testing (validity) by significant and strong factor loadings were 0.66 to 0.74 (14).

The online survey asked to complete electronic informed consent, demographic characteristics, and questionnaires-related to psychological responses of Covid-19. We asked participants to kindly share the survey to their personal and professional networks if they were not scheduled to work from home, physically healthy, not under alcohol influence, and were mentally capable. The

survey was administered by Google Form to ensure easy access and a wide reach to participants. It was shared via social media platforms such as WhatsApp, email, and LINE. Surveys were voluntary, no compensation, and anonymity.

Respondents' responses were cleaned up from missing and incomplete data prior to analysis performed. Descriptive analysis was presented as median and interquartile for continuous variables and for categorical data as frequencies and percentage. Significant level (alpha) for hypothesis testing was set as $P < 0.05$ with Confidence Interval (CI) 95%. Bivariate and multivariate analysis were performed using non-parametric methods due to non-normally distributed data. Poisson regression was used to analyse the association between continuous independent variables and the outcome variables, while Mann-Whitney test was done for independent categorical variables, and Chi Square test was used to analyse ordinal independent and dependent variables. Multivariate analysis for non-normal distribution data was performed using simultaneous logistic regression methods in which all predictors with p value < 0.25 were entered into the equation at the same time to identify the association within the context of all of the other independent variables in the model. Analysis was performed using STATA14 statistical software by Stata Corp.

Ethical consideration was approved by the Ethical Commission of Health Research, Hang Tuah Institute of Health Sciences, Surabaya on the date of 8 March 2021-8 March 2022, IRB Reference: PE/9/III/2021/KEPK/SHT.

Table 1. Summary of demographic characteristics and its association with each psychological reaction of Covid-19 (n = 916)

Variables	Fear of Covid-19			Coronavirus Anxiety			Perceived Stress			
	low	high	P	low	high	P	low	moderate	high	P
Age, median (Interquartile)	31.5 (20)	26 (16)	< 0.001	31 (20)	26 (17)	0.02	33 (21)	32 (20)	26 (16)	< 0.001
Gender, n (%)										
female	357 (60.82)	187 (56.84)	0.24	331 (61.18)	213 (56.80)	0.18	124 (59.90)	177 (60.62)	243 (58.27)	0.81
male	230 (39.18)	142 (43.16)		210 (38.82)	162 (43.20)		83 (40.10)	115 (39.38)	174 (41.73)	
Education level, n (%)										
elementary	2 (0.34)	1 (0.30)	0.41	3 (0.55)	0 (0.00)	0.55	1 (0.48)	1 (0.34)	1 (0.24)	0.55
secondary	36 (6.13)	25 (7.60)		37 (6.84)	24 (6.40)		19 (9.18)	18 (6.16)	24 (5.76)	
graduate	549 (93.53)	303 (92.10)		501 (92.61)	351 (93.60)		187 (90.34)	273 (93.49)	392 (94.00)	
Vaccination status, n (%)										
refuse vaccine	26 (4.43)	7 (2.13)	0.52	21 (3.88)	12 (3.20)	0.32	8 (3.86)	10 (3.42)	15 (3.60)	0.97
not yet vaccinated	72 (12.27)	55 (16.72)		79 (14.60)	48 (12.80)		26 (12.56)	40 (13.70)	61 (14.63)	
vaccinated	489 (83.30)	267 (81.16)		441 (81.52)	315 (84.00)		173 (83.57)	242 (82.88)	341 (81.77)	
Vaccination dose, n (%)										
refuse vaccine	98 (16.70)	62 (18.84)	0.16	100 (18.48)	60 (16.00)	0.14	34 (16.43)	50 (17.12)	76 (18.23)	0.87
one dose	55 (9.37)	39 (11.85)		60 (11.09)	34 (9.07)		20 (9.66)	34 (11.64)	40 (9.59)	
two doses	434 (73.94)	228 (69.30)		381 (70.43)	281 (74.93)		153 (73.91)	208 (71.23)	301 (72.18)	
Hesitance on vaccination, n (%)										
unbelieve	54 (9.20)	18 (5.47)	0.95	52 (9.61)	20 (5.33)	0.98	17 (8.21)	20 (6.85)	35 (8.39)	0.62
hesitance	154 (26.24)	104 (31.61)		139 (25.69)	119 (31.73)		58 (28.02)	75 (25.68)	125 (29.98)	
believe	379 (64.57)	207 (62.92)		350 (64.70)	236 (62.93)		132 (63.77)	197 (67.47)	257 (61.63)	
Contact high risk people at work, n (%)										
little	26 (4.43)	13 (3.95)	0.15	28 (5.18)	11 (2.93)	0.01	9 (4.35)	14 (4.79)	16 (3.84)	0.13
moderate	326 (55.54)	168 (51.06)		304 (56.19)	190 (50.67)		118 (57.00)	169 (57.88)	207 (49.64)	
a lot	235 (40.03)	148 (44.98)		209 (38.63)	174 (46.40)		80 (38.65)	109 (37.33)	194 (46.52)	
Physical distancing at work, n (%)										
no distance	111 (18.91)	67 (20.36)	0.12	96 (17.74)	82 (21.87)	0.004	32 (15.46)	46 (15.75)	100 (23.98)	0.01
less than 1.5	269 (45.83)	165 (50.15)		245 (45.29)	189 (50.40)		97 (46.86)	141 (48.29)	196 (47.00)	
more than 1.5	207 (35.26)	97 (29.48)		200 (36.97)	104 (27.73)		78 (37.68)	105 (35.96)	121 (29.02)	
Risk exposure Covid-19 at work, n (%)										
no risk	20 (3.41)	6 (1.82)	0.01	19 (3.51)	7 (1.87)	<0.001	7 (3.38)	5 (1.71)	14 (3.36)	0.003
low risk	121 (20.61)	50 (15.20)		123 (22.74)	48 (12.80)		41 (19.81)	65 (22.26)	65 (15.59)	
moderate risk	214 (36.46)	124 (37.69)		199 (36.78)	139 (37.07)		82 (39.61)	121 (41.44)	135 (32.37)	
high risk	232 (39.52)	149 (45.29)		200 (36.97)	181 (48.27)		77 (37.20)	101 (34.59)	203 (48.68)	

Table 2. The results of simultaneous logistic regression model of predictors on psychological reactions of Covid-19 without reference base (n = 916)

Predictors	Fear of Covid-19			Coronavirus-19 Anxiety			Perceived Stress		
	β (SE)	95% CI	<i>P</i>	β (SE)	95% CI	<i>P</i>	β (SE)	95% CI	<i>P</i>
Age	-.030 (.007)	-.045 - .015	<0.001	-.014 (.007)	-.028 - -.000	0.05	-.028 (.006)	-.040 - -.015	<0.001
Gender									
male	.173 (.143)	-.107 - .454	0.22	.219 (.139)	-.054 - .493	0.11	-	-	-
Vaccination dose									
refuse vaccine	.176 (.194)	-.203 - .557	0.36	-.123 (.192)	-.501 - .254	0.52	-	-	-
one dose	.471 (.235)	.009 - .933	0.045	-.071 (.237)	-.538 - .394	0.76			
Contact high risk people									
moderate	-.219 (.380)	-.965 - .526	0.56	.099 (.389)	-.663 - .862	0.79	-.030 (.323)	-.663 - .602	0.92
a lot	-.218 (.411)	-1.024 - .588	0.59	.022 (.417)	-.795 - .840	0.95	-.069 (.355)	-.766 - .628	0.84
Physical distancing									
no distance	.020 (.225)	-.420 - .461	0.92	.178 (.218)	-.250 - .607	0.41	.337 (.203)	-.061 - .737	0.09
less than 1.5	.167 (.171)	-.169 - .504	0.33	.200 (.167)	-.127 - .529	0.23	.108 (.149)	-.184 - .401	0.46
Risk exposure									
low risk	.518 (.509)	-.480 - 1.517	0.30	.087 (.483)	-.859 - 1.034	0.85	-.339 (.418)	-1.159 - .480	0.41
moderate risk	.801 (.504)	-.187 - 1.790	0.11	.578 (.475)	-.352 - 1.509	0.22	-.398 (.413)	-1.209 - .412	0.33
high risk	.865 (.522)	-.158 - 1.890	0.09	.775 (.493)	-.190 - 1.742	0.11	-.118 (.433)	-.967 - .730	0.78

RESULTS AND DISCUSSION

RESULTS

This study included 916 individuals working respondents of 1416 completed the online survey, with a median age of 28 (interquartile=19) years, of which 372 (40.61%) were males and 544 (59.39%) were females. Our analysis showed that participants had low fear (64,08%) and anxiety (59.06%) to Covid-19, yet majority respondents were on moderate to high levels of stress; 31.88% (292) and 45.52% (417) respectively.

Table 1 presents the summary of demographic characteristics and its association with each psychological reaction of Covid-19. In bivariate analysis, age was significantly associated with the fear of Covid-19 ($p < 0.001$), anxiety ($p = 0.02$), and perceived stress ($p < 0.001$). None predictors including gender, education levels, vaccination status, vaccination dose, and vaccination hesitancy were correlation with the psychological aspects. Self-rated of how much time contact with high-risk people at work ($p = 0.01$), physical distancing at work ($p = 0.004$), and work place as a high risk for Covid-19 ($p < 0.001$) showed that these questions had a significant correlation to coronavirus anxiety, while physical distance and risk at work were significantly associated with perceived stress ($p = 0.003$) and only risk at work had a significant correlation with the fear of Covid-19 ($p = 0.01$).

The results of simultaneous logistic regression analysis with each of the psychological measures are presented in Table 2. After adjusting with all predictors, our finding revealed that age was a significant predictor for each psychological aspect, the

fear of Covid-19 ($\beta = -.030$; $p < 0.001$), anxiety ($\beta = -.014$; $p = 0.05$), and perceived stress ($\beta = -.028$; $p < 0.001$). While adding one dose of Covid-19 vaccination for participants who obtained first dose vaccination predicted on reducing 53% ($p = 0.045$) of fear of Covid-19.

DISCUSSION

Our study determined the psychological reactions among the working general population in five metropolitan cities in Java during the second wave of Covid-19 outbreaks. We found that the working population in Java reported no fear and anxiety to Covid-19 during the second outbreaks, whereas among the population was identified on the moderate and high-levels perceived of stress.

The pandemic had led to hazards to mental health or psychological wellbeing through the present of anxiety symptoms, depressions, post-traumatic stress disorders, psychological distress, stress (15), insomnia (2, 7, 8) and fear(16). It has been indicated that important factors related to these psychological disturbances are the death of someone due to Covid-19 and restricted social contact leading to the frequent use of social media(17).

In our study, age is a significant factor in reducing psychological reactions to Covid-19 outbreaks. According to Chawla et.al (18), in studies assessing emotional distress presented variability of the level of anxiety and depression among adolescents where female respondents have greater severity. Meta-analysis conducted by Chai et.al. (19) yielded a vastly growing a number of mental problems, depression, and anxiety among children and adolescents in China during

global Covid-19 pandemic. Other studies also presented similar findings where the prevalence of mental health problems for children and adolescents in China and Turkey due to Covid-19 was relatively high (20). These emotional or psychological distress are associated with reduced physical activity, delayed sleep time, increased sleep duration, screen time, internet use, sedentary habits and poor quality of life (18-20). In contrary, studies from different countries showed the link between older adults and greater emotional wellbeing (21-23). It was shown that people aged 66 and older did not report levels of stress, anxiety, and depression from Covid-19, while those with chronic diseases were proportionally reporting a few symptoms (22). In addition, life experience of adults' population shows a more positive attitude towards the Covid-19 (21, 24). During home confinement and social distancing as the main public health measures, although these two measures are associated with poor psychological distress or mental health particularly for young ages and female gender (25) but older adults reported partially disrupted in participating daily activities and had mild psychological symptoms because of their understanding of the positive aspects of confinements and their adaptations of using of technology during Covid-19 pandemic (26). This evidence affirms our finding where maturity is an important aspect in dealing with hazards of Covid-19 outbreaks on psychological or mental well-being.

It is well-recognised that the impacts of Covid-19 pandemic are on the hazards to psychological well-being, yet evidence shows that there are positive attitude towards the Covid-19 pandemic in community related to

individual maturity (26). Our sample in this study are the working population. We assume that the working population are those in the stage of productive age which means in the age of 20s to 55s. A systematic review presents that older adolescents and females are at higher risks of psychological problems (25), however, study by Shi et.al. (27) showed the working population are correlated to lower risks of depression and anxiety. The cause of psychological issues in this situation can be seen from the perspective either from maturity and from the social background of the population.

Our finding revealed that an additional one dose of Covid-19 vaccination for those who obtained the first dose is significantly predicted to decrease 47% of the fear to Covid-19. It may be those who obtained the first dose vaccination might have perceived it to be high-risk of getting Covid-19 infection in comparison to those obtained booster dose. Based on the protection motivation theory (PMT), fear of Covid-19 may stimulate individual's thought that they are at the risk to get infected (perceived vulnerability) then results in an intention for seeking protection (uptake vaccination) (28, 29). The importance of Covid-19 vaccines are designed to prompt immune responses, ideally neutralizing antibodies (NAbs), against the spike protein of SARS-CoV-2 (30). In addition, adenovirus vaccines elicit polyfunctional antibodies enabling to mediate virus neutralization and to drive other antibody-dependent effector functions, as well as to potent T-cell responses since the single-dose was administered (30). Based on the protection motivation and the purpose vaccine designation, those who obtained the first dose may expect to

maximize protective responses, thereby decreasing the fear of the coronavirus infection.

This study has several limitations. Firstly, this study determined a sample following personal networks of respondents who completed the online survey. This may cause difficulty to describe the involved sample in the study such as respondents with history of fatigue, underlying pain and sleep disturbance. Yet, we accompanied the survey questions with inclusion criteria for selection respondent's eligibility. The second is study design. As this is a cross-sectional study, generalization should be done by caution, even though data is well-managed during the cleaning process through drop extreme outliers to increase statistical power. Instead of these limitations, this study provides well-understanding the psychological status of a wide community.

CONCLUSION AND RECOMMENDATION

During the second of Covid-19 outbreaks, the working population involved in the study had lower levels of fear and anxiety, yet they had moderate and higher levels of perceived stress. Age was a significant predictor for reducing the levels of fear, anxiety, and perceived stress, while additional dose of Covid-19 vaccination was significantly predicting the reduction of fear to Covid-19. Concerning the exponential increasing daily cases of Covid-19 infection and the risk of another wave of Covid-19 outbreaks, mitigation measures need to be constantly maintained as the population is less afraid of the Covid-19.

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