

## Why are People in East Jakarta Having the Poor Health-Related Quality of Life During the COVID-19 Pandemic?

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### ABSTRACT

The COVID-19 pandemic has suddenly changed all aspects of people's lives and is also contributing to the deterioration of health-related quality of life (HRQoL). Therefore, this study aims to assess the factors affecting HRQoL in East Jakarta. A cross-sectional design was used with 336 respondents, who met both the inclusion and exclusion criteria and were selected by multistage cluster sampling. The results showed that approximately 40.2% of the respondents had poor HRQoL with an average score of 2.7 (0.79), and this was significantly associated with living in RW Siaga (PR 1.529; 95%CI 1.062-2.202), having no local lockdown experience (PR 1.800; 95%CI 1.060-3.056), poor individual resilience (PR 1.794; 95%CI 1.259-2.558), and depression (PR 1.563; 95%CI 1.096-2.230). To prevent poor HRQoL in East Jakarta, it is recommended to improve the RW Siaga program by implementing it in a persuasive and humanist manner. People who are in charge of this program must understand how to communicate with the community to assure it will not be contra-productive with its initial objectives. At the same time, community leaders' involvement and empowerment are also important to increase individual resilience and prevent depression by playing the role of a 'trained community counselor' to briefly assess the individual mental health.

### Key words:

COVID-19; health-related quality of life; lockdown; depression; resilience

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## INTRODUCTION

The first case of COVID-19 was discovered in Indonesia precisely in March 2020 and it has reached more than a million in January 2021. Among the 34 affected provinces, DKI Jakarta contributes to a quarter case of 269,718. Approximately 22% of the total cases were registered in East Jakarta, making it the district with the highest cumulative confirmed COVID-19 cases among the other five districts<sup>1</sup>. Consequently, specific interventions were taken to control the transmission in this province. In April 2020, the Government released Government Act Number 33 about the Implementation of *Pembatasan Sosial Berskala Besar (PSBB)* meaning Large Scale of Social Restriction to control COVID-19 transmission.

PSBB is defined as a restriction of people's daily outdoor activities, hence, learning, worship, and work are conducted from home. Social, cultural, and entertainment activities in both public and private spaces are prohibited. In addition, people's mobility in and out of DKI Jakarta through public and personal transportation is also limited. All these extreme and sudden changes potentially impact people's health-related quality of life (HRQoL). According to Skevington, Lotfy, & O'Connell<sup>2</sup>, HRQoL is an individual perception regarding their condition and situation. Presently, the HRQoL concept is used to describe public health status, as well as predict health services and treatment needs. The measurement results are used to calculate the risk of disease severity and even death. A study on cancer patients showed that the combination of HRQoL values, sociodemographic factors, and clinical conditions can be used as an index number for predicting short-term risk of death (<1 year). The results showed that the sample group with a high-risk index of 57%-79% had a shorter median survival of 5-12 months compared to those with a moderate risk index (medium) of 40%-57%

which had longer survival ranging from 11-16 months<sup>3</sup>.

Studies on the quality of life in relation to the COVID-19 pandemic have been conducted by several scholars ranging from the general population<sup>4-6</sup>, children and adolescents<sup>7</sup>, COVID-19 patients<sup>8</sup>, health workers<sup>9</sup>, to people with a particular disease<sup>10</sup>. These studies revealed a consistent conclusion that the pandemic affects people's HRQoL.

According to Ferrans Model<sup>11</sup>, the quality of life is altered by individual and environmental factors. The individual factor is the psychological aspect that is inherent in someone's life. Meanwhile, environmental factors are the extrinsic aspects that might involve the economy and society.

Poor HRQoL affects productivity<sup>12</sup> and has a significant impact on community wellbeing. By definition, individuals with poor HRQoL are those with impaired functioning in relation to health particularly in the physical and mental domains. When this condition is not well identified and treated, it will decrease community wellbeing. If people in the community had poor quality of life, it will be difficult to perform health promotion and prevention behavior. As CDC<sup>13</sup> defined well-being as the outcome of the holistic approaches to disease prevention and health promotion.

One of the attributable factors of poor HRQoL is socioeconomic status (SES), according to Xu et al,<sup>14</sup> people with low SES tend to have a lower quality of life scores under normal conditions. Due to the economic collapse caused by the COVID-19 pandemic, the number of people with poor economic status has dramatically increased, leading to a deterioration in HRQoL. Furthermore, Endarti<sup>15</sup> reported that 65% of people in Greater Jakarta experienced decreased income during the pandemic. Poverty also increased the risk of COVID-19 exposure, which is related to overcrowded houses, poor house conditions, employment in occupations that

do not provide opportunities to work remotely, as well as unstable work conditions and income<sup>16</sup>.

The social factor also affects the HRQoL status, Yoo<sup>17</sup> revealed that perceived social support is related to higher HRQoL. Undoubtedly, the pandemic threatened individuals who are ignorant and misinformed about the disease. Among the Egyptian population, more than half felt horrified (53,9%), apprehensive (66,3%), and helpless (52%)<sup>18</sup>. These feelings can lead to deterioration in HRQoL, particularly for the mental health aspects. Therefore, interventions from the external environment, also known as social support, are needed. During this tough time, the family is the main supporter amounting to 40.5%-40.8% compared to friends 19.5%-26.5%.<sup>18</sup> According to White and Van Der Boor,<sup>19</sup> this kind of support facilitates an increase in the quality of life during the pandemic.

The psychological factor related to the HRQoL is depression, which correlates significantly with the mental component<sup>20</sup>. The root cause of depression during the pandemic is the decline in income. Individuals with reduced income significantly have a 3.5 times risk of getting moderate/severe depression<sup>21</sup>.

Mental health issues during the pandemic seem to have an impact on serious problems such as suicidal behavior. A study in China found that the suicide prevalence was 11.8% with 95% CI 9.9%-13.7% among 1063 older psychiatric patients who were clinically stable during the COVID-19 pandemic. Factors that were significantly associated with suicide include poor quality of life, worsening disease condition, as well as routine screening that must be strictly followed<sup>22</sup>. Major depressive disorder was the most common health problem found in 15-17% of the population and 15% of this group were at an elevated risk of suicide.

Therefore, the problem of depression cannot be ignored during a pandemic. Although the mechanisms underlying depression are complex, several factors have been shown to play a role including genetics, exogenous and endogenous stressors such as interpersonal, financial, psychiatric disorders, as well as stress response systems, involvement of neurotransmitter systems, lipid profiles, neuro-immunological biomarkers, brain-derived neurotrophic factors, and other neuromodulators<sup>23</sup>. According to Moccia et.al depression is one of the affective temperaments that appeared in the early phase of COVID-19 pandemic<sup>24</sup> and it also contributed to the lifetime suicide attempts<sup>25</sup>.

Another psychological factor that is reportedly associated with poor quality of life is individual resilience<sup>26</sup>. It is defined as the ability of a person to recover, rebound, bounce back, adjust or even thrive after misfortune, change, or adversity<sup>27</sup> and is widely acknowledged to be a complex, dynamic, and multi-dimensional phenomenon<sup>28</sup>. During a pandemic, resilience is an important skill that needs to be improved to deal with any consequences.

The domino effect of COVID-19 on the whole aspect of life is inevitable, even among the DKI Jakarta population, but studies on people's quality of life during the pandemic in the province are limited. Endarti *et al.*,<sup>15</sup> in a study conducted in Greater Jakarta reported that the quality of life mean score was 16 with a range of 6-29, indicating the higher the score, the poorer the HRQoL. However, this study was conducted in East Jakarta because it had the biggest cumulative number of confirmed COVID-19 cases, the largest population amounting to 28,76%<sup>29</sup>, the highest percentage of the vulnerable population aged <15 years old and > 60 years old, up to 30,06%<sup>30</sup>, and widely

known as the most commute population with 29,6%<sup>30</sup>. This study intends to describe the HRQoL among people in East Jakarta and its affecting factors. The hypotheses tested include whether environmental factors such as living in *RW Siaga*, experiencing local lockdown, insurance, asset/investment, and social support as well as individual factors including depression and resilience have a significant association with HRQoL.

## METHODS

A cross-sectional design was used to achieve the objectives of this study which was conducted in East Jakarta. The entire data collection process was conducted for 2 weeks in August 2020. According to the Statistic Bureau, this district has a population of approximately 2.9 million scattered at 10 *kecamatan* (sub-districts) and 65 *kelurahan* (urban village)<sup>31</sup>. Concerning the spread of COVID-19 in this area, the number of confirmed cases was 61.868 as of February 2nd, 2021<sup>1</sup>.

The respondents were people who met both the inclusion criteria which include 18 years old and above, have effective communication skills, and are willing to be a respondent, as well as the exclusion criteria of having a chronic disease and mental problems. Furthermore, the minimum sample size was calculated with the formula of hypothesis testing for two population proportions<sup>32</sup>. The two-tailed test was used with 95% level of confidence ( $\alpha=5\%$ ), 80% power of study ( $\beta=80\%$ ), as well as the proportion of poor quality of life among those who are depressed ( $P1=0,652$ )<sup>15</sup>, and not ( $P2=0,5$ )<sup>33</sup> and the results yielded 165 respondents for one group. Therefore, a total of 330 respondents were recruited to fulfill the required minimum sample size for the two groups.

The multistage cluster sampling is used to draw the sample from the wide-spread geographical population, therefore

this method was used since East Jakarta consists of 10 sub-districts and 65 urban-villages<sup>31</sup>. Each sub-district was considered as a cluster. For the first stage, 6 sub-districts were randomly selected and a total of 15 urban villages were selected based on purposive selection. Respondents were then proportionally and systematically recruited in each selected urban village.

The enumerators were recruited from each sub-district with a total of 15 persons who were trained before the data collection process. The criteria for the enumerator include at least a 2nd-grade public health student, who attended the enumerator training, and possessed good skills in gadget utilization. The enumerators interviewed the respondents using Google forms. During the process, the enumerator was equipped with the proper personal protective equipment (PPE) such as a mask and hand sanitizer. The interview was conducted in an open space with a minimum of 1-meter distance from each other.

To assess quality of life, the QoL-COV19 questionnaire<sup>34</sup> which consists of 6 questions with scores ranging from 6 to 30 was used. Respondents who had an average score of 3 and above are considered to have poor HRQoL, while lower values indicate a good HRQoL. Meanwhile, the independent variables consist of environmental factors which are as follows:

1. *RW Siaga*. It is defined as a neighborhood whose residents have the readiness of resources, ability, and willingness to prevent and deal with health problems, disasters, emergencies or extraordinary events independently. The *RW Siaga* status is legally determined by the head of urban village. Respondents were asked whether their neighborhood was declared as *RW Siaga* or not.

2. Local lockdown. This variable is defined as the experience of the lockdown to prevent COVID-19 transmission in the area. Respondents were asked whether they experienced local lockdown or not.

3. Having insurance. This refers to the types of active insurance owned by respondents that can be disbursed in an emergency, such as health, life, vehicle, and home insurance. Respondents were asked whether they have insurance or not.

4. Having an investment. It is defined as money or capital in a company or in the form of assets for obtaining future profits. Investments that can be owned include stocks, gold, land, property, and mutual funds. Respondents were asked whether they have investments or not.

5. Social support. This is defined as any form of support received by the respondents from their family, friends, colleagues, and neighbors, to strengthen their capability in dealing with the pandemic. A total of 12 questions were asked on whether the respondents' social circles were giving any support, as well as which group was most trusted and stayed during the hardships. Respondents who received social support from at least one person were categorized as having social support.

Another factor that theoretically affects HRQoL is the personal aspect, consisting of:

1. Individual resilience. This is assessed by the Brief Resilience Scale<sup>35</sup> which consists of 6 items comprising 3 positive statements and 3 negative questions. The scores of the six statements were then added and averaged, while the choice of answers is stated on a Likert scale consisting of 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Respondents with an average score < 3 are categorized as having poor individual resilience.

2. Depression. It was measured using the Patient Health Questionnaire 9 (PHQ9)

developed by Kroenke and Spitzer<sup>36</sup>. This instrument produces a score in the range of 0-27 and from these scores, respondents are categorized into mild, moderate, and severe depression when the score  $\leq 4$ , 5-14, and  $\geq 14$ , respectively.

In a cross-sectional study, when the outcome prevalence is considered high, then the association measure of prevalence ratio (PR) is recommended than the traditional Odds Ratio (OR). Within these circumstances, OR will provide overestimated values,<sup>37</sup> therefore, Cox regression with constant time at risk analysis was performed to obtain the prevalence ratio. Usually, Cox regression is used to analyze time-to-event data, the response is the time an individual takes to present the outcome of the interest. When a constant risk period is assigned to everyone in the cohort, the hazard rate ratio estimated by Cox regression equals the cumulative incidence ratio in longitudinal studies, or the prevalence ratio in cross-sectional studies<sup>37</sup>. The advantage is that the prevalence ratio (in the cross-sectional study) or cumulative incidence (in the longitudinal study) as the measure of association is more interpretable and easier to communicate. Furthermore, ethical clearance was obtained from the National Institute for Health Research and Development (NIHRD), Ministry of Health, No. LB.02.01/2/KE.526/2020.

## RESULTS

The majority of respondents were female (78,0%) and in the adulthood phase aged 25-55 years old (56,5%), also, approximately 64% graduated from high school, and more than two-third or 67% were married, as shown in Table 1.

**Table 1.** Characteristics of Respondents (n 336)

Respondents' characteristics (n=336)	f	%
Gender		
Male	74	22.0
Female	262	78.0
Age		
≤ 25 years	100	29.8
26-55 years	190	56.5
>55 years	46	13.7
Education level		
College	65	19.3
High school	215	64.0
Middle/elementary school	56	16.7
Marital status		
Married	225	66.9
Divorced/Widowed	18	5.4
Single/not married	93	27.7

Table 2 shows that the average score was 2.70 indicating that the HRQoL of people in East Jakarta was slightly above the neutral to a good condition. Based on the results, 40.2% of respondents had poor HRQoL.

**Table 2.** Description of HRQoL during the COVID-19 Pandemic in East Jakarta

	HRQoL (n=336)
Mean	2.70
Median	2.67
SD	0.79
Range	1.00-4.83
Poor HRQoL (%)	40.2

Approximately 82.14% of respondents were living in *RW Siaga*, and more than two fifths of these people had poor HRQoL. This result was higher than those living in *Non-RW Siaga* area with 28.3%, but the difference was not statistically significant. Among respondents, 30.6% experienced local lockdown and almost half namely 49.5% had poor HRQoL. Meanwhile, economic factors, such as insurance ownership, had no significant association (p 0.721). The proportion of poor HRQoL among respondents who have insurance or not was almost similar namely 42.2% vs. 39.4%. An

opposite result was found in the investment/asset variable, namely half of the respondents with no asset/investment had poor HRQoL, compared to those with asset/investment which had a lower proportion amounting to 39.5%. The risk among respondents who had poor HRQoL among those who had investment was 1.4 times higher than the opposite group (PR<sub>crude</sub> 1.429; p 0.04).

Furthermore, the social factor which was assessed by the social support variable showed no significant association with HRQoL. Among the respondents, 53.7% without social support had poor HRQoL,

while those with social support had a lower proportion of 38.3%. Severe depression was reported by 26.8% of respondents and almost two-thirds had poor HRQoL. There was a significant difference in its proportion between respondents having severe and mild/moderate depression

( $PR_{crude}$  1.660;  $p$  0.004). Another factor, namely individual resilience, also had a significant association with HRQoL. People with poor individual resilience have poor HRQoL, which was 1.9 times higher risk than those with good HRQoL ( $PR_{crude}$  1.997;  $p$  0.000).

**Table 3.** Association between Variables and HRQoL

Variables	HRQoL				Total (%)	P value	$PR_{crude}$	95% CI	
	Poor		Good					lower	upper
	f	%	f	%					
Living in <i>RW Siaga</i> COVID-9									
Yes	118	42.8	158	57.2	276	0.113	1.509	0.908	2.509
No	17	28.3	43	71.7	60		1	Ref	
Experienced local lockdown									
No	84	36.1	149	63.9	233	0.074	1.373	0.370	1.945
Yes	51	49.5	52	50.5	103		1	Ref	
Having insurance									
No	38	42.2	52	57.8	90	0.721	1.071	0.736	1.558
Yes	97	39.4	149	60.6	246		1	Ref	
Having asset/investment									
No	58	50.0	58	50.0	116	0.040	1.429	1.016	2.009
Yes	77	35.0	143	65.0	220		1	Ref	
Having social support									
No	22	53.7	19	46.3	41	0.148	1.401	1.887	2.212
Yes	113	38.3	182	61.7	295		1	Ref	
Depression									
Severe	51	56.7	39	43.3	90	0.004	1.660	1.172	2.300
Mild/moderate	84	34.1	162	65.9	246		1	Ref	
Individual Resilience									
Poor	52	65.0	28	35.0	80	<0.001	1.997	1.412	2.824
Good	83	32.5	172	67.5	255		1	Ref	

Living in *RW Siaga* increased the risk of having poor HRQoL by 1.5 times compared to those in a non *RW Siaga* area with  $PR$  1.529 (95%CI 1.062-2.202). Furthermore, the risk was also 1.8 times higher among respondents who experienced local lockdown compared to those who did not, as demonstrated by  $PR$  1.800 (95%CI 1.060-3.056). Another variable that was significantly related to

poor HRQoL was low individual resilience. Respondents with poor resilience had 1.8 times higher risk, with  $PR$  1.794 (95%CI 1.259-2.558). Depression was also significantly related to the risk of having poor HRQoL, which was 1.56 times higher among respondents who had severe depression compared to those with mild/moderate as indicated by  $PR$  1.563 (95%CI 1.096-2.230).

**Table 4.** Final Model of Factors Affecting HRQoL during the COVID-19 Pandemic in East Jakarta

Variable	Beta	P value*	PR	95% CI	
				Lower	Upper
Living in <i>RW Siaga</i> COVID19 (ref: no)	0.425	0.022	1.529	1.062	2.202
Experienced local lockdown (ref: yes)	0.588	0.030	1.800	1.060	3.056
Individual resilience (ref: good)	0.585	0.001	1.794	1.259	2.558
Depression (ref: mild/moderate)	0.447	0.014	1.563	1.096	2.230

\*Cox regression analysis

## DISCUSSION

During the COVID-19 pandemic, approximately 40% of people in East Jakarta reportedly had poor HRQoL. Compared with the national HRQoL status, our finding is considerably lower than the national HRQoL status which was showing that 47.4% of Indonesia's population has poor HRQoL<sup>38</sup>. It showed that poor quality of life was a latent issue that needs special attention to prevent the long-term impact of the community well-being deterioration.

The result is consistent with a study conducted in China<sup>6</sup> and in Germany which reported that the proportion of poor HRQoL increased to 40.2% during the pandemic among German adolescents<sup>39</sup>. Meanwhile, compared to a study carried out in Changzhi City, North China<sup>4</sup>, the prevalence of poor HRQoL in this study is almost one and a half times higher namely 28.1% vs 40.2%. The significant difference in the poor HRQoL proportion between these two cities is presumably due to the different burden of COVID-19 morbidity. East Jakarta reported more than 60,000 confirmed COVID-19 cases in 2021 which is the highest number in DKI Jakarta. Conversely, as reported by Weiwei, et.al,<sup>4</sup> the epidemic condition in Changzhi City was quite under control with only 8 definite cases which had not significantly affected the lives of most people. This was an interesting issue that needed to be explored since this study did not assess some

contextual variables such as the number of cumulative cases in each sub-district.

As a global concern, the COVID-19 pandemic has suddenly changed all aspects of people's lives due to its spread, severity, and impacts. In less than a year, the disease has been transmitted to 219 countries worldwide, the number of infected cases reached 104 million, and the case fatality rate was approximately 2.16%<sup>40</sup>. El Zoghby<sup>18</sup> revealed that the economic and social impact of the pandemic affected more than half of the Egyptian population which reported an increase in financial stress (55.7%) and household stress (62.7%). These impacts caused uncertainty and fear, increased stress, and vulnerability, leading to decreased mental well-being. When threat meets anxiety, it activates individual worries for their future situation, leading to the experience of negative perceptions about the consequences<sup>41</sup>.

Among 4 variables that contribute to the poor HRQoL, having no experience of local lockdown apparently is the main predictor. During the initial phase of the pandemic, 15 countries reportedly underwent a lockdown (<https://www.kompas.com>) and some committed to a second lockdown in October 2020 (<https://health.detik.com>). Presently, Indonesia did not declare a nationwide lockdown, and the intervention was only intended for some high-risk areas such as DKI Jakarta.

Based on the results, people who did not experience the lockdown had a higher risk of poor HRQoL. None of the previous studies revealed a similar conclusion. This is an interesting finding given that certain previous studies reported different results, such as the studies conducted in Germany<sup>19</sup> and East China<sup>42</sup> which revealed that the lockdown correlated with poor HRQoL. Lockdown increased feelings of isolation due to livelihood concerns. In addition, Chen et.al<sup>42</sup> stated that lockdown changed people's lifestyles in unexpected ways including their physical and mental health. This different finding might be related to the duration of the lockdown. Among respondents who experienced local lockdown, the average duration of local lockdown was 37 days. Meanwhile, according to Chen et.al the effect of lockdown on the quality of life was identified at least at the 2<sup>nd</sup> month of lockdown duration<sup>42</sup>.

Another argument for this finding is that for some communities, the lockdown was used to improve social cohesion in some communities. The period also increased the perception of kindness, as well as community connectedness, thereby preventing the people from feeling lonely in facing difficulties caused by the pandemic. In addition, we believe that people in East Jakarta had been well informed about the importance of lockdown in preventing COVID-19 transmission and they had prepared before the lockdown announcement, as massive socialization has been done since the pandemic was declared.

Individuals who did not experience the local lockdown but continued with their business as usual are liable to face some difficulties such as getting public transportation due to the reduction in the operational hours, limited access to the public market, malls, as well as entertainment facilities including the

theater, café, sports area, etc, and these altogether deteriorate the quality of life.

According to a study, a factor that confounded the aforementioned association is the quality of relationships. Pieh et al.<sup>43</sup> and Goldfarb & Trudel<sup>44</sup> reported that people with poor relationship quality showed the poorest mental health, compared to those without relationships. The term relationship, in this case, refers to marital status. Although the majority of respondents namely 67.7% were married, the quality of the relationship was not asked during this study, hence, future studies are recommended to involve this variable while assessing HRQoL.

This study also revealed that poor HRQoL is affected by living under *RW Siaga*. It is a small-scale empowerment that is led by neighborhood leaders to protect the community from the potential transmission of COVID-19. The main tasks of *RW Siaga* include observing suspected, asymptomatic, and confirmed cases of COVID-19, reporting asymptomatic cases who are not having a proper house to quarantine, listing suspected, asymptomatic and confirmed cases who need support for daily life, and ensuring that people follow the prevention effort of COVID-19 transmission<sup>45</sup>.

The results showed that people living in the activated *RW Siaga* area had a higher risk of getting poor HRQoL with PR 1.8; 95%CI 1.060-3.056. Since the community is being threatened by COVID-19, some areas are run by *RW Siaga* strictly. People take turns guarding their territory and observing the entry/exit of the population in the area. This is an unusual situation compared to the pre-pandemic period, where people can freely carry out activities outside the home. People who do not properly understand the pandemic situation tend to be worried about being infected or infecting other people. Excessive worry potentially triggers stress

which can reduce HRQoL. Therefore, this is where the role of *RW Siaga* officers is important, specifically in conveying information about COVID-19 through a humanist approach designed to the conditions of the community in their respective areas. The Indonesian Ministry of Health has published a guidebook for implementing community empowerment in preventing COVID-19 at the neighborhood/village level<sup>46</sup>. The guidelines are to be implemented by competent regional officials for proper understanding by *RW Siaga* officers.

*RW Siaga* also promotes the COVID-19 prevention effort by putting the persuasive banner for 3M (*Memakai masker, Mencuci tangan, Menjaga jarak*; use a mask, wash the hands properly and comply with social distancing) as well as message, community education on clean and healthy behavior, and spraying disinfectants to the public area/infrastructure. It must also provide facilities such as a place for washing hands with soap and running water in several places where residents pass through, an officer who checks body temperature, as well as masks for residents who cannot afford them. However, one challenge for officers in charge of *RW Siaga* is being able to take an informative, educative, and persuasive approach to effectively ward off misinformation in the form of hoax news about COVID-19 from circulating in the community. Misinformation can cause psychological stress which is related to the quality of life<sup>47</sup>. There is a need to ensure that COVID-19 control programs such as *RW Siaga* did not become contra productive and lead to the deterioration of people's HRQoL.

The implementation of *RW Siaga* in DKI Jakarta involves not only the local people but also the government officer for monitoring and law enforcement. The involvement implies tightening rules and, from the community's point of view, it led to an increase in perceived threat. For

example, when someone is in a public area and did not wear a mask, the officer tends to take disciplinary action or ask for a fine. The study conducted by Cypryńska, Nezlek<sup>48</sup> reported that the perception of threat has a positive and significant correlation with anxiety, while Adibelli and Sumen<sup>7</sup> stated that anxiety is a predictor of poor HRQoL.

Based on the results, 23.8% of respondents had poor individual resilience, and among them, 53.7% significantly experienced poor HRQoL with PR 1.794; 95%CI 1.259-2.558. Poor individual resilience had a positive association with low quality of life, this result is consistent with other studies<sup>49,50</sup>. Kimhi *et al.*,<sup>26</sup> found a negative correlation between individual resilience and HRQoL, indicating the better the individual resilience, the lower the distress symptom score with  $r = -.398$  and  $p < 0.001$ . According to Cacioppo *et al.*,<sup>51</sup> resilience is "the capacity to foster, engage, and sustain positive relationships as well as to endure and recover from life stressors and social isolation". Previous studies have shown that when facing stressful or adverse situations, resilient individuals tend to experience lower levels of depression or anxiety, recover more quickly to pre-crisis stages, and arrive at a pre-stress baseline more quickly. Furthermore, resilience reduces the negative mental consequences caused by disasters or stressful events. It is also a self-perceived trait that enables individuals to cope with adversity or stressful life events<sup>41</sup>. This concept is in line with Appraisal Theory<sup>52</sup> which states that resilience is manifested in emotional response, implying the higher the negative emotional response, the lower the resilience. This emotional response is determined not only by the presence or absence of a stimulus-response relationship, but also by an evaluation based on the context of the motivational stimulus/situation.

The results also showed that depression significantly influences poor

quality of life, this is in line with previous studies conducted in Italy and Israel during the COVID-19 pandemic particularly for the mental health component<sup>20</sup>. Approximately 26.8% of people in East Jakarta suffered from severe depression. An eight-fold increase in depression was found during the pandemic compared to the previous prevalence namely 3,27% vs. 26,8%<sup>53</sup>. Comparable results were reported among the general population in a study conducted in China, which found a higher prevalence of anxiety (35,1%) and depression (20%) during the lockdown<sup>54</sup>. The relationship between depression and quality of life also needs to consider the medical condition. This potential confounder has been controlled during the initial phase of data collection by putting the requirement of having no chronic disease as the exclusion criteria and the results confirmed that the HRqoL score was lower among those who were depressed<sup>55</sup>.

This study has limitations pertaining to generalization because the proportion of female respondents was high (78%) and it did not represent the characteristics of the population in East Jakarta. According to East Jakarta Statistics, the adult female population is 50,11%. This issue occurred during data collection given that the females were mostly at home as housewives, while the majority of males were in their workplace. Another limitation is the assumption that the current poor quality of life is solely due to the pandemic. This is because there was no information on the quality of life before the pandemic, hence, this study was unable to evaluate the overall effect of COVID-19.

## CONCLUSIONS

Poor quality of life was prevalent in East Jakarta during the pandemic with a value amounting to 40,2%, and it was

significantly affected by living in *RW Siaga*, having no local lockdown experience, poor individual resilience, and depression.

The results showed that the *RW Siaga* program, targeted at increasing people's awareness and good practices in preventing COVID-19 transmission, contributed significantly to deteriorating the quality of life. This unexpected finding must be noted for the program improvement in the future. This program needs to be implemented in a persuasive and humanist manner. The officers involved must understand how to communicate with the community. Moreover, further studies are suggested to evaluate the implementation of *RW Siaga*.

Lockdown has an additional positive impact by increasing the HRQoL score when it is implemented with tight social cohesion in the community. Hence, the maintenance of social cohesion with the involvement of community leaders is recommended. Community leaders' involvement and empowerment such as cadre are also important to maintain mental health. They can be trained as a 'counselor' to briefly assess the individual mental health. This program is expected to prevent depression and increase resilience which are risk factors of poor HRQoL. They also can play roles to prepare community with the adequate information prior to the lockdown.

Another recommendation is to increase the generalization of the result using stratified sampling by gender and age group, particularly when the study is scheduled for weekdays.

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## AUTHOR CONTRIBUTIONS

ATE contributed to the conception and design of the study, recruitment of the sample, performed the statistical analysis. EDS and TI did sample recruitment, trained the enumerator, and performed the statistical analysis. ATE, EDS, TI wrote sections of the manuscript and performed the critical revision and approved the article. All authors contributed to the article and approved the submitted version.

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