



Original Article

The Analysis of the Quality of Life in Indonesia in the Middle of the COVID-19 Pandemic: A Cross-Sectional Study

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ABSTRACT

Background: It is widely known that COVID-19 has influenced many aspects of human life. Notwithstanding, the quality of life of the human population in South East Asia, especially in Indonesia, was not well-articulated concerning the pandemic's impacts. This study aimed to investigate the quality of life of Indonesian inhabitants in the middle of the pandemic.

Methods: A descriptive, bivariate, and multivariate analysis was employed within a cross-sectional study design. As many as 389 respondents were included in the analysis using WHOQOL-BREV. Purposive technical sampling and SPSS ver. 26 were employed for the statistical analysis.

Results: The majority of the respondents had a good quality of life (QOL) in the physical health, psychological, social condition, or environmental aspects more than 93%, and only a small proportion of the respondents who experienced bad quality of life ranging from 0.3%-3.3%. It is found that the factors of gender and occupation were found to have a significant correlation with $p < 0.05$ with quality of life (psychological and social condition aspects).

Conclusion: The factors of gender and employment have a significant influence on the quality of life in terms of the psychological and social relationships of the respondents.

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GRAPHICAL ABSTRACT

QUALITY OF LIFE (QOL 3) BASED ON THE ETHNICITY

■ GOOD ■ BAD



QUALITY OF LIFE (QOL 4) BASED ON THE ETHNICITY

■ GOOD ■ BAD



Introduction

The emergence of the COVID-19 pandemic since the end of 2019, which was caused by the SARS-COV virus, has impacted all the population in the world. Various impacts of the pandemic were comprising all sectors including the health aspects. Little evidence of the quality of life determining the impacts of the pandemic on society. Thus far, this study has been dedicated to delving into the impacts of the pandemic on the quality of life of the community in Indonesia [1, 2].

The World Health Organization Quality of Life (WHOQOL) defines the quality of life as a person's response to his life in a society based on the cultural context and values related to goals, expectations, standards, and concerns. The concept of quality of life itself is very broad and involves a person's physical condition, level of independence, psychology, and one's relationship with the environment [3, 4]. Quality of life is also defined as a sufferer's emotional response to social, emotional, and work activities and relationships between families, feelings of pleasure or happiness, and the compatibility between expectations and reality, satisfaction with performing physical, social, and emotional functions as well as socializing with others [5, 6]. The scope of quality of life [7] divides the quality

of life into 4 parts (domains), namely (1) Physical health, presence or absence of disease, anxiety, rest/sleep, energy, and fatigue, mobility, daily activities, dependence on drugs as well as medical assistance, job capacity. (2) Psychological, which consists of understanding, learning process, thinking, remembering, concentration, self-esteem, physical appearance, negative feelings, and one's beliefs. (3) Environment consisting of freedom, financial resources, (4) Health and social care, physical safety and/or security, home environment, opportunities to acquire new skills and information, participation and opportunities for recreation, activities in the environment, and transportation [7]. Factors that affect a person's quality of life consist of several things including a feeling of belonging to the surrounding environment including family and friends and the work environment. Other factors include feelings of having a good social identity, having social relationships with family and the environment including things that can affect one's mental and psychological health, and of course, this will also affect one's quality of life for the better [6, 8]. Meanwhile, other studies state that excessive use of the internet and virtual networks is closely related to stress, personality disorders, and sleep disorders and of course, this will disrupt quality of life [4].

In addition, several studies also say that someone who is already connected to other people via the internet such as Facebook is more likely to have better support and can play a role in preventing psychological problems including stress. Several studies also say that someone who tends to feel lonely in his life will affect his quality of life both mentally and physically [8].

Problems affecting quality of life

In addition, several studies suggest that students' problems with their social environment, emotional problems, as well as physical and family problems can negatively affect academic ability, which in the end can all lead to a decrease in the quality of life of students [8]. Problems in a person's socioeconomic factors also affect their quality of life [3]. Several studies also state that excessive use of the internet or activities that take place virtually can cause anxiety in students [6].

Several studies explain that other factors that can affect stressful conditions in family life such as socio-economic conditions, mental disorders in parents due to illness and trauma, severe financial crises, loss of jobs, and educational problems can affect mental disorders which will ultimately affect a person's quality of life [8].

A systematic review stated that a good quality of life is related to a good "sense of control", having a good self-image, and high hopes, and optimism. Conversely, low quality of life is often associated with mental disorders, anxiety, and low self-esteem. In addition, several studies also say that students who tend to experience anxiety disorders, depression, and other mental disorders tend to have a low quality of life [8].

In addition, other studies say that a person's quality of life will be good when a person can fulfil their standard of living which includes physical health, a harmonious family, good education, getting a good job, good welfare, believing in and practicing his religion and beliefs properly, have good economic conditions, and a good environment that provides support to them [6]. On the other hand, other studies suggest that medical and health students can have a relatively

poor quality of life if they adopt an unhealthy lifestyle, experience mental health problems, or experience failure in academics which can affect their quality of life [6].

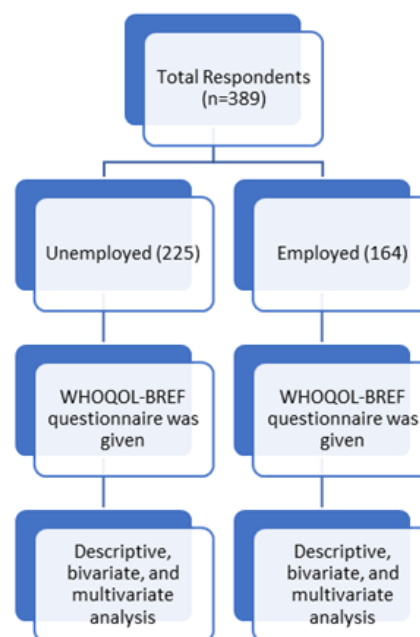


Figure 1: The study flowchart

Therefore, generally, a person's quality of life is associated with physiological, behavioural, emotional, social, and cultural factors such as religious beliefs, and social relations which vary in each country [6].

Materials and Methods

This study used observational cross-sectional studies which entail quality of life preserved as dependent variables, meanwhile, the independent variables encompassing gender, age, residential area, occupation, and educational level. The study was taken within the timeframe from March to June 2021. This study's ethics approval has been granted by institutional board of University of Muhammadiyah Surakarta.

The purposive technic sampling was the technical sampling based on certain criteria which include inclusion criteria and exclusion criteria [1, 9]. The purposive technic sampling was chosen to enable the prospective respondents who met the inclusion criteria to be included in the study (7-9). The participants of this study comprised all of those residing in Indonesian territory who met the inclusion criteria which were determined as

those who reside in Indonesia from the age of 14 to 75 years as well as those who were able and willing to voluntarily participate in this study. Meanwhile, those who met the criteria for exclusion from this study were those who discontinued completing the study or cancelled to be included in this study.

All of those potential prospective respondents were then invited to provide consent to participate in this study and fulfilled the given questionnaire completely.

The sample size of this study was 389 respondents which exceed the minimum samples calculated using the Rule of thumb which is exceeding 193 respondents. The study procedure is depicted in Figure 1.

The instruments of the study

The WHOQOL-BREF questionnaire was chosen to calculate the quality of life of the respondents [10]. WHOQOL-BREF was widely used for evaluating the quality of life in various contexts and also has a good internal consistency of reliability test for 0.9 [11]. The questionnaire has 26 items of evaluation which comprise four domains of health that assess the physical, psychological, social condition, and environmental status [7, 11].

Analysis of the study

Upon circulating the questionnaires to the intended respondents through the Instagram, or WhatsApp, the questionnaires in the form of google forms were then circulated within the time frame of the study.

Table 1: Subject Characteristics analysis (n=389)

Characteristics	Total	Percentage	Mean \pm SD
*QOL 1			1.99 \pm 0.05
Not Good	1	0.3%	
Good	388	99.7%	
**QOL 2			1.93 \pm 0.25
Not Good	26	6.7%	
Good	363	93.3%	
***QOL 3			1.96 \pm 0.17
Not Good	13	3.3%	
Good	376	96.7%	
****QOL 4			1.97 \pm 0.15
Not Good	9	2.3%	
Good	380	97.7%	
Age			1.51 \pm 0.5
17-23 years old	189	48.6%	
24-64 years old	200	51.4%	
Gender			1.38 \pm 0.49
Female	242	62.2%	
Male	147	37.8%	
Residential			1.29 \pm 0.46
Java Island	276	71%	
Outside Java Island	113	29%	
Employment			1.58 \pm 0.49
Working	164	42.2%	
Not working	225	57.8%	
Educational			1.14 \pm 0.35
University	335	86.1%	
Middle school	54	13.9%	

*QOL1: Physical Health aspect; RR: Relative Risk; **QOL 2: Psychological aspect; CI: Confidence Interval; ***QOL 3: Social relationship aspect

Table 2: Bivariate analysis of quality of life (n=389)

Characteristics	*QOL 1 (Not Good)	*QOL 1 (Good)	P value (Asymptotic Sig 2-sided)	RR (95%CI)	**QOL 2 (Not Good)	**QOL 2 (Good)	P-value (Asymptotic Sig 2-sided)	RR (95% CI)
Gender								
Female	1	241	0.435	0.996 (0.988-1.0040)	22	220	0.015	3.575 (1.207-10.590)
Male	0	147			4	143		
Age								
17-23 years old	0	189	0.330	1.005 (0.995-1.015)	17	172	0.076	2.098 (0.911-4.829)
24-64 years old	1	199			9	191		
Residential								
Java Island	1	275	0.552	0.996 (0.989-1.003)	16	260	0.274	0.634 (0.279-1.443)
Outside Java Island	0	113			10	103		
Educational								
University	1	334	0.688	0.997 (0.991-1.003)	23	312	0.721	1.253 (0.363-4.326)
High School	0	54			3	51		
Occupation								
Employed	1	163	0.241	0.994 (0.982-1.006)	3	161	0.001	0.164 (0.048-0.555)
Unemployed	0	225			23	202		

*QOL1: Physical Health aspect; RR: Relative Risk; **QOL 2: Psychological aspect; CI: Confidence Interval; ***QOL 3: Social relationship aspect; ****QOL 4: Environment aspect

The collected data were then extracted into an Excel worksheet and the data analysis was then performed using the SPSS software package of 26 versions (IBM SPSS Statistics). The presented data using univariate descriptive and bivariate statistics using Chi-Square and multivariate analysis using logistic regression which were deployed in Table 1, 2, 3 and 4. As the independent and dependent variables in this study were categorized as nominal or ordinal in the proper large sample size, therefore, the Chi-Square was chosen to analyze the data if the data met the prerequisite for analysis using Chi-Square.

As per each of the data with a number more than 0 for each category or none of the cells has zero

counted then the Chi-Square applied, meanwhile, the data analyzed by the Fisher exact test if the Chi-Square did not meet.

Results and Discussion

In this study, it was found that most of the respondents aged 24-64 were 51.2% with most of them having a female gender of 62.0%. Most of the respondents live on the island of Java 70.8%, and 57.6% do not work and have an education level equivalent to a university education of 86.0%. Moreover, most of the respondents had in better quality of life (QOL 1, QOL 2, and QOL 3) more than 90%, and only in small percentage of respondents who were in a bad quality of life ranging from 0.3%-3.3%.

Table 3: Bivariate analysis of quality of life (n=389) (continued)

Characteristics	***QOL 3 (Not Good)	***QOL 3 (Good)	P-value	RR (95%CI)	****QOL 4 (Not Good)	****QOL 4 (Good)	P-value (Asymptotic Sig 2-sided)	RR (95% CI)
Gender								
Female	9	233	0.595	1.381 (0.418- 4.567)	6	236	0.0780	1.220 (0.301- 4.955)
Male	4	143	2		3	144		
Age								
17-23 years old	9	180	0.130	2.450(0.742- 8.094)	3	186	0.504*	0.522 (0.129- 2.116)
24-64 years old	4	196			6	194		
Residential								
Java Island	9	267	0.889	0.919 (0.277- 3.046)	6	270	0.775	0.815 (0.200- 3.316)
Outside Java Island	4	109			3	110		
Educational								
University	9	326	0.073	0.345 (0.102- 1.163)	8	327	0.808	1.297 (0.159- 10.578)
High School	4	50			1	53		
Occupation								
Employed	2	162	0.047	0.240 (0.053- 1.099)	5	159	0.410	1.737 (0.459- 6.572)
Unemployed	11	214			4	221		

*QOL1: Physical Health aspect; **QOL 2: Psychological aspect; ***QOL 3: Social relationship aspect; ****QOL 4: Environment aspect; CI: Confidence Interval; RR: Relative Risk

Table 4: Regression analysis (n=389)

Characteristics	R	R2	Adjusted R Square	Std. Error	F	P-value	Unstandardized B
*QOL 1	0.082	0.007	-0.006	0.051	0.522	0.000	1.979
**QOL 2	0.208	0.043	0.031	0.246	3.452	0.000	2.086
***QOL 3	0.138	0.019	0.006	0.179	1.490	0.000	2.070
****QOL 4	0.063	0.004	-0.009	0.004	0.303	0.000	1.984

*QOL1: Physical Health aspect; **QOL 2: Psychological aspect; ***QOL 3: Social relationship aspect; ****QOL 4: Environment aspect

Table 5: Bivariate quality of life analysis (n=389)

Characteristics	*QoL 1	**QoL 2	***QoL 3	****QoL 4
Gender	1.00**	0.015	0.774**	1.00**
Age	0.620	0.204	0.316	0.638
Residential	1.00**	0.274*	1.00**	0.775**
Occupation	0.423**	0.001	0.046	0.502**
Educational	1.00**	1.00**	0.091**	1.00**
Disease	0.070**	0.411**	1.00**	1.00**

*QOL1: Physical Health aspect; **QOL 2: Psychological aspect; ***QOL 3: Social relationship aspect ****QOL 4: Environment aspect; **: fisher test, not meeting Chi Square requirements

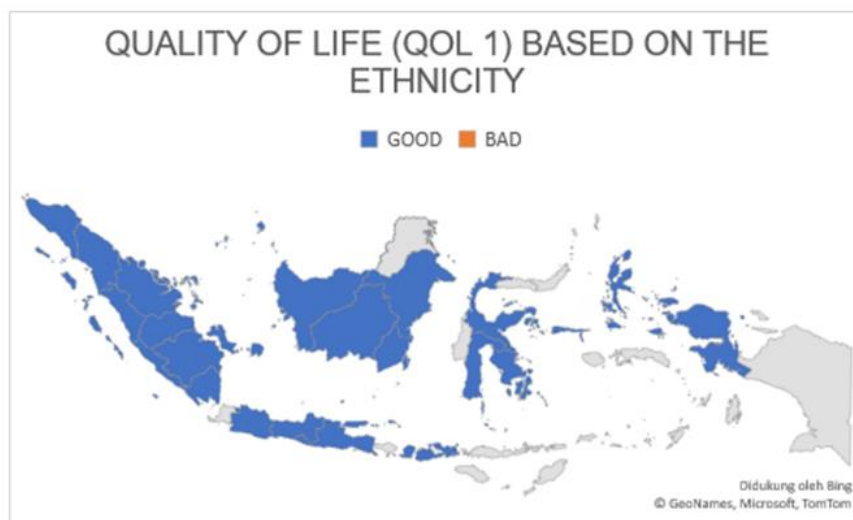


Figure 2. The quality of life (QOL 1) indicated based on the ethnicity

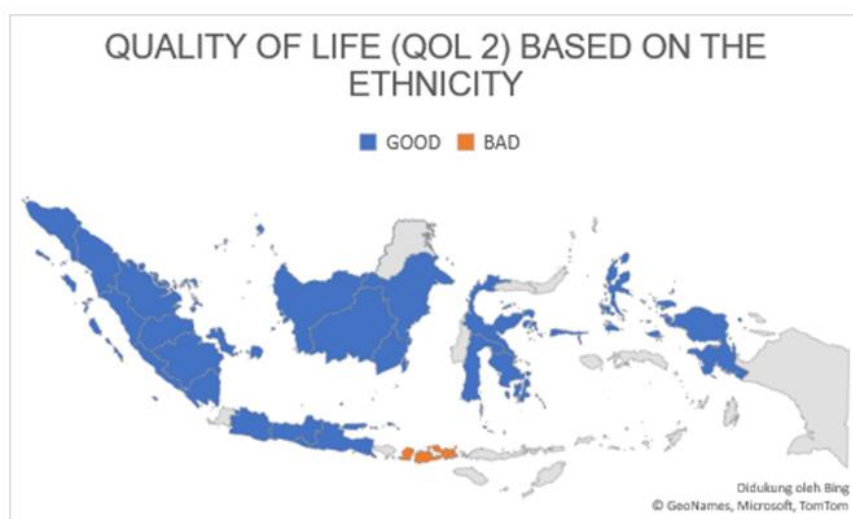


Figure 3: The quality of life (QOL 2) depicted based on ethnicity (primary source)

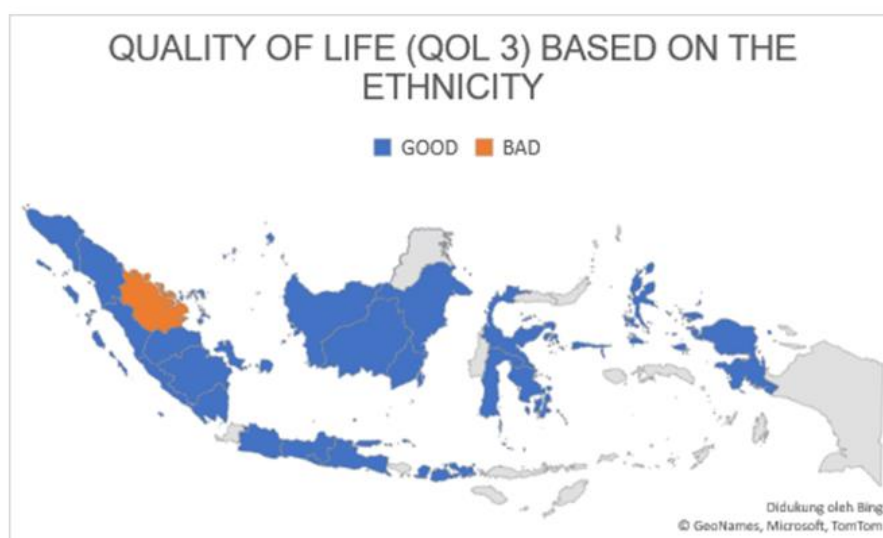


Figure 4: The quality of life (QOL 3) indicated based on ethnicity (primary source)

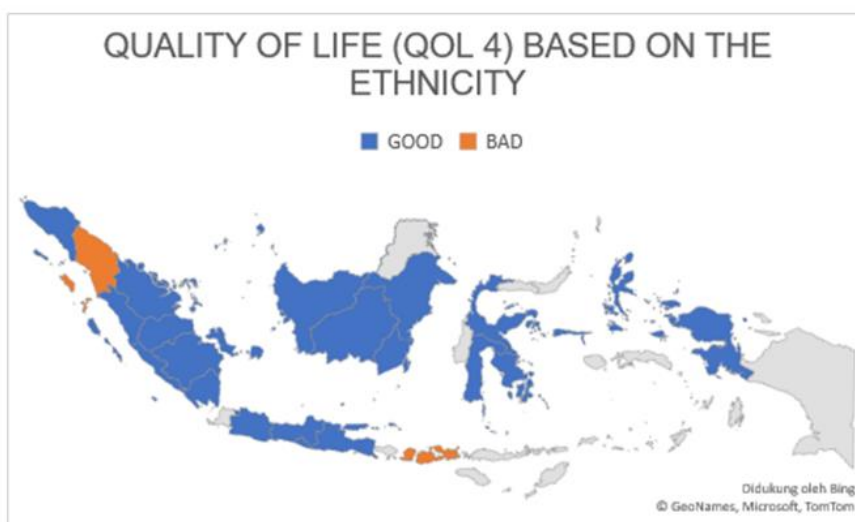


Figure 5: The quality of life (QOL 4) which is based on ethnicity

Based on Table 5, it is indicated that the gender factor significantly correlated with QOL 2. Meanwhile, the occupation factor was significantly associated with QOL2. In addition, the occupation factor also influenced the QOL 3.

Figure 2 depicted the quality of life (QOL 1) based on ethnicity which indicated that the majority of the community was in the normal quality of life (QOL 1) throughout the seven major islands, Sumatera, Java, Kalimantan, Sulawesi, Bali, Maluku, and Papua.

The quality of life (QOL 2) indicated in Figure 3 portrayed that most of the major islands in Indonesia were within good quality of life unless Bali which was found to have less quality of life (QOL 2).

The quality of life depicted in Figure 4 revealed that the majority of the participants' life in the seven major islands was found in a good quality of life (QOL 3). Only participants who live in East Sumatra were found to have a bad condition of quality of life (QOL 3).

Figure 5 indicated the quality of life of the participants which was found that the majority of participants had a good quality of life (QOL 4) and only two regions within which the participants were found in bad quality of life encompassing those who live in the middle of Sumatra and Bali. Based on this study, it was found that the majority of respondents identified the quality of life (QOL 1) as not good (99.7%). Meanwhile, the QOL 2 of the respondents was found to be slightly improved compared to QOL 1 which indicated

that the respondents who experienced insufficient QOL 2 was 93.3%. The percentage of the respondents who experienced an un-satisfied quality of life also occurred with QOL 3 and 4 which showed 96.7% and 97.7%, respectively.

Table 2 indicated that gender factors were found to be significantly associated with the QOL 2 with the p-value <0.05 with an RR of 3.575 (95%CI 1.207-10.590). Employment factors were also found to significantly correlate with the QOL 2 and QOL 3 with p-values <0.05.

The respondents in this study indicated that the majority of the respondents were in a lower quality of life (>90%). Meanwhile, another study reported that anxiety and mental disorders are associated with the quality of life [8]. In addition, support from the family and the environment and maintaining physical health can increase the quality of life [6]. It is, therefore, imperative to overcome the worsening impact of COVID-19 in terms of alleviating the level of anxiety to leverage the societies' well-being [12, 13]. Several measures can also be taken to improve societies' mental health by providing support programs to the susceptible society as well as an educational program to improve the understanding of the community around on how to leverage the quality of life such as having a better lifestyle, exercising regularly, consuming healthy food [14], supporting program to leverage the wealthy and financial security of the community, providing more opportunities to the employment

sector by stimulating community economic creativity is also worth mentioning [1].

Practical implications

The early identification of factors associated with quality of life in societies can help further prevent the lowering of quality of life. Educational programs can also be introduced to the societies to educate the communities [15, 16] and to prevent and overcome factors deteriorating the quality of life and thus enhancing the quality of life.

Strength and limitations

This study provides evidence that the communities need to maintain a better quality of life during and after the pandemic. This study aims to investigate the evidence of quality of life and provide several measures that can be taken to mitigate the impact of the COVID-19 pandemic on the quality of life. This study, however, still have limited samples due to time constraints which may affect the generalizability of the findings, hence, future studies are expected to investigate wider communities and use different tools to investigate the quality of life and also in different context or region.

Conclusion

Based on this study, the majority of the respondents had a good quality of life (QOL) in the physical health, psychological, social condition, or environment. However, the factors of gender and employment have a significant influence on the quality of life in terms of psychological and social relationships of the respondents. Several measures can be taken to mitigate the worsening impact of COVID-19 by providing several programs to alleviate factors that might deteriorate the quality of life in the community. Future studies are expected to investigate the strategies to increase the quality of life in societies.

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Authors' Contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

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