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Abstract

The COVID-19 pandemic has impacted various sectors and may trigger a decrease in quality of life (QoL), so resilience is urgently needed. This study aimed to analyze the role of resilience in the QoL of individuals during the second wave of the COVID-19 pandemic in East Jakarta, Indonesia. An explanatory sequential mixed methods study was conducted with a cross-sectional design. The QoL was measured using the Indonesian-HRQoL on 300 respondents through multistage cluster sampling. The explanatory qualitative approach involved Focus Group Discussions and in-depth interviews. A Cox regression was used to analyze the quantitative data. The proportion of poor QoL was 26.30%. Poor resilience (individual, family, and community) contributed to poor QoL during the pandemic. Realistic perceptions determined the role of individual resilience in QoL concerning gratitude, sincerity, patience, mutual reinforcement, accepting circumstances, implementing health protocols, cognitive emotion regulation, adaptability, and optimism. The age of family decision-makers, social support, and self-control determined the role of individual resilience in QoL. The role of community resilience in mental-emotional disorders and QoL was determined by the stability of the education system, health system, political/government system, and pandemic management system.

Keywords: COVID-19, pandemic, quality of life, resilience

Introduction

The latest pandemic that has spread to 223 countries from December 2019 until now is coronavirus disease 2019 (COVID-19).[1] There were more than 6.4 million confirmed cases of COVID-19 in Indonesia as of 8 October 2022, with an increase in daily cases of more than 1.3 thousand people, a case fatality rate (CFR) of 3.4%, and cases of recovered patients almost reaching more than 6.2 million people.[2] In Indonesia, the Special Capital Region of Jakarta Province was the epicenter of the COVID-19 pandemic. The impact of a pandemic involves mental-emotional disorders (in the form of behavioral, emotional, cognitive, and risky behavior disorders),[3,4] declining family income,[5] and decreased quality of life (QoL).[6-10] Therefore, resilience mechanisms are needed from the individual, family, and community to resist, adapt to, and recover from the effects of disasters in a timely and efficient manner. A system is considered to have good resilience if coping abilities at the individual, family, and community levels in routines and emergencies are stable.[11] Community resilience includes government policy during the pandemic.

The East Jakarta was reported as the municipality with the highest incidence rate and a high mortality rate in June 2021 compared to others in Jakarta.[12] This municipality is more diverse in ethnicity, religion, culture, socioeconomics, and population density than others in the province. This condition was the baseline to assess resilience (individual, family, and community levels) and QoL for Jakarta residents during the COVID-19 pandemic. Therefore, a quantitative and qualitative in-depth study was needed to explain the phenomena and information regarding the role of resilience in QoL due to COVID-19 in the Jakarta area, especially in East Jakarta. This study is the only one that assesses the role of individual, family, and community resilience in QoL in the second wave of the COVID-19 pandemic at the epicenter in Indonesia. It used mixed methods and took an explanatory qualitative approach to examine the unique role of each resilience domain in depth.

Method

This study investigated the role of resilience (individuals, families, and communities) in QoL during the COVID-19 pandemic through an explanatory sequential mixed-methods design with a cross-sectional study. Data

collection was carried out from July to November 2021. First, a quantitative study was conducted in the East Jakarta municipality during the peak of the second wave of the COVID-19 pandemic. Multistage cluster sampling was used to select 300 respondents who lived in East Jakarta from the beginning of the pandemic. The inclusion criteria were: lived in the village since before March 2020, aged 18 to 60 years, willing to be interviewed online, had cell phones for interviews, and could communicate well. The QoL was measured using the Indonesian Health-Related Quality of Life (INA-HRQOL),[13] the Connor-Davidson Resilience Scale (CD-RISC) for individual resilience,[14] the Family Resilience Assessment Scale (FRAS) for family resilience,[15] and the ARC-D toolkit,[16] for community resilience, which was modified for pandemic conditions. The data were analyzed using the Cox regression. Second, six Focus Group Discussion (FGD) groups (5–10 persons in each group) and nine in-depth interviews were conducted for qualitative data collection.

Result

The Role of Individual Resilience in QoL

Poor individual resilience was a risk of poor QoL during the COVID-19 pandemic (PR = 1.607; 95% CI = 0.908–2.845) after controlling for social support. So, people with poor individual resilience were 1.607 times more likely to experience poor quality of life than people with good individual resilience (Table 1).

The results were explained based on FGDs and in-depth interviews with respondents, revealing that people tended to focus on matters related to their mental state, which was the domain of cognitive emotion regulation. The respondents' adaptations involved increasing adaptability, optimism, and discipline in cognitive emotion regulation, as well as seeking reliable information related to the COVID-19 pandemic and complying with health protocols.

"[By being] grateful, sincere, that's one of them." (RD, primary education, FGD)

"Maybe for adaptations that can make us resilient, like, for example, we take vitamins, or wearing a mask when we go out and maintaining health protocols like washing hands and bringing hand sanitizer." (ZR, higher education, FGD)

The Role of Family Resilience in QoL

Poor family resilience was a risk of poor QoL (PR = 1.870; 95% CI = 1.016–3.442) after controlling for confounding factors (family income, job loss, history of chronic disease, and social support). People with poor family resilience tended to be 1.870 times more likely to experience poor QoL than people with good family resilience (Table 2).

This result was in line with information obtained from the community through FGDs and from stakeholders during in-depth interviews, which revealed that the internal role of the family members in forming a resilient family dramatically affected the QoL of each family member during the COVID-19 pandemic. Most FGD participants from various groups stated that social support from the nuclear and extended families greatly determines the formation of family resilience.

Table 1. Role of Individual Resilience in Community Quality of Life

Variable	PR	SE	Z	p-value	95% CI	
					Lower	Upper
Individual resilience	1.607	0.468	1.63	0.103	0.908	2.845
Social support	1.032	0.023	1.44	0.151	0.988	1.079

Notes: PR = Prevalence Ratio, SE = Standard Error, CI = Confidence Interval

Table 2. Role of Family Resilience in Community Quality of Life

Variable	PR	SE	Z	p-value	95% CI	
					Lower	Upper
Family resilience	1.870	0.582	2.01	0.044	1.016	3.442
Family income	1.075	0.295	0.26	0.791	0.627	1.842
Job loss	1.023	0.267	0.09	0.930	0.613	1.706
History of chronic disease	1.178	0.290	0.67	0.504	0.727	1.909
Social Support	1.047	0.026	1.86	0.063	0.997	1.100

Notes: PR = Prevalence Ratio, SE = Standard Error, CI = Confidence Interval

Table 3. Role of Community Resilience in Quality of Life

Variable	PR	SE	Z	p-value	95% CI	
					Lower	Upper
Community resilience	1.601	0.474	1.59	0.112	0.896	2.862
Social support	1.035	0.024	1.51	0.132	0.989	1.082

Notes: PR = Prevalence Ratio, SE = Standard Error, CI = Confidence Interval

"In my opinion, the resilience of women in covid must be increased, ma'am, because mothers are the pillars of the family [...]" (UY, primary education, FGD)

"Family resilience is the most important thing, in my opinion, it all starts from the family, one family that supports each other, automatically we give the effect to other people too." (AI, primary education, FGD)

"[...] so the family must also be ready as well as the community, for example, if our family is ready to face this pandemic, but the community does not support it, it's just like moving alone in a negative environment." (AS, primary education, FGD).

Family resilience was inseparable from the influence of the age of the head of the family, financial insecurity, family social support, and the self-control of each family member. Most of the older participants had higher education and were in the non-COVID-19 survivor group, stating that the older a person is, the more diverse experiences they have gone through and the more emotionally mature they are. This statement made it easier to form a resilient family and have a good QoL during the pandemic, drawing on decision-making experience, analyzing risks, and solving problems. The Empowerment, Child Protection, and Population Control (ECPPC) Office mentioned programs for people under 36 years old to build emotional maturity and the QoL of children and adolescents, such as the *Generasi Berencana* (Planned Generation), the children's forums in each subdistrict, and *Program Calon Pengantin* (prospective marriage couple program).

"[…] had a lot of experience dealing with problems […] maybe during his lifetime he encountered problems like that, right?" (RH, higher education, FGD)

"[...] we actually target teenagers, Alhamdulillah, the 'Planned Generation' in East Jakarta is very well organized, then we also have a children's forum spread in every subdistrict. In our case, it means that we can enter our target, there is also prospective marriage couple program that PK2 handles [...]" (PS, ECPPC Office, interview)

The Role of Community Resilience in Quality of Life

This study found poor community resilience to be a risk for poor QoL during the COVID-19 pandemic (PR = 1.601; 95% CI = 0.896–2.862) after controlling for social support. So, people with poor community resilience tended to be 1.601 times more likely to experience poor QoL than people with good community resilience (Table 3).

Community resilience may have formed since the beginning of the pandemic. The impact of the COVID-19 pandemic caused a crisis or imbalanced situation that traumatized individuals and communities. Then, community resilience was formed, like the mechanism in posttraumatic growth (PTG). Some FGD participants in the low-education group stated that the swift government response in social assistance and loans for micro, small, and medium enterprise (MSME) actors determined their QoL. The FGD participants considered this support from the government and the environment as social support.

"From the government, maybe social assistance is needed to strengthen the resilience of the community and to facilitate loans for MSMEs [...]" (RD, primary education, FGD)

"There are many groceries and cash assistance [BST] programs from the private sector and the government. From CSR too, agency too. BST should be targeted at vulnerable groups." (RN, Social Office, interview)

"[…] the East Jakarta area is indeed the most affected, seen from several Regional Agency for Disaster Management activities, the target is the most. Like the distribution of masks and other assistance." (BR, Head of Regional Agency for Disaster Management, interview)

Qualitative study revealed information about the stabilizing roles of education, health, and government systems as components of community resilience. These systems were essential in forming community resilience and maintaining QoL during the pandemic. It was because the organization of those systems was adaptive and helped the community bounce back from the negative impact of the pandemic.

"[…] the government is good, the people will automatically follow suit. A good education will later support a good economy in the future […]" (WT, poor QoL, interview)

"[…] I am a teacher. At school, I must provide material to students by sending videos or broadcasting for formal examples, especially from the government and agencies […] I also cadre in my neighborhood. We are given counseling from the sub-district village, and then we are informed to the residents […]" (HI, higher education, FGD)

"Jakarta Province is so supportive of this pandemic. Every week there is an urban village meeting, and the sub-district is involved. Then the procedure for following up complaints is also fast, 6 hours." (RN, Social Office, interview)

Discussion

Individual Resilience

The study found that poor individual resilience was a risk for poor QoL (PR = 1.607; 95% CI = 0.908–2.845) after controlling for social support (Table 1). Interventions need to be carried out to increase the resilience of these individuals during the COVID-19 pandemic and other pandemics that may occur in the future. Based on the concept of crisis intervention, there are three balancing factors to overcome a crisis: realistic perceptions, coping mechanisms, and social support.[17] This commitment/control ability is closely related to the formation of PTG regarding a person's previous experience of overcoming problems and social support. The same goes for forming coping mechanisms, adaptability, and cognitive emotion regulation. Social support can come from the nuclear family, extended relatives, friends, neighbors, and the relevant government. This social support can be through assistance or community formation.[18] Interventions to form effective coping mechanisms and growth can also be carried out, especially during a pandemic that involves conditions such as lockdowns.[19]

This study found that adaptability, optimism, and cognitive emotion regulation affect individual resilience in QoL, which aligns with existing theory. A crisis is defined as a condition with bad consequences for individuals, and there are three balancing factors to avoid a crisis and its associated poor QoL.[16] Realistic perceptions, coping mechanisms, and social support are needed. Coping mechanisms refer to individual efforts to solve problems and adapt to new situations. Realistic perceptions are also related to cognitive emotion regulation. People can think realistically when they can regulate their negative emotions.[17] When these components are in good condition during a crisis, good QoL will be achieved.

Family Resilience

The study found that poor family resilience was a risk for poor QoL (PR = 1.870) after controlling for family income, job loss, history of chronic illness, and social support (Table 2). People perceived the family resilience component: the family belief system – as a spiritual activity. Participants admitted that they became more regular in listening to religious lectures on television and other social media and more intensive in praying with their families at home. Family organization patterns and problem-solving communication did not change before and after the COVID-19 pandemic, even when family members died. Accumulated family stress could cause family crises, including physical and emotional problems.[20] During the pandemic, parents (specifically) and families in general were experiencing turmoil in many areas of life (e.g., family, school, and economy), causing shifts in family dynamics and routines that led to mild to severe mental distress. These positive and negative changes require family resilience.[20,21]

The component of family resilience during the pandemic played an essential role in family functioning to determine family prosperity. However, families also faced threats during the pandemic, such as financial insecurity, job loss, caregiving burdens, and stress related to social restrictions (e.g., crowds, changes in structures and routines). These have a long-lasting impact on the structure and processes of the family system. However, family resilience can be shaped through shared trust and support.[22,23] If both of these are in place, the risk of families experiencing poor resilience can be prevented so that the QoL of each family member during a pandemic can be maintained or improved.

The possibility of family resilience was also determined by the condition of family relationships, such as the closeness between family members, especially between children and parents. Thus, each family member can participate in positive activities and benefit from emotional regulation support from the parents for all family members to thrive together during a pandemic.[22,23] Those whose families are not resilient may experience family relationship constraints because the impact of the pandemic is felt most heavily by parents (husband/wife), as the highest responsibility holder in the family.

Community Resilience

The study found that poor community resilience is a risk for poor QoL (PR = 1.601; 95% CI = 0.896–2.862) (Table 3). The in-depth interviews revealed that the good resilience of The Special Capital Region of Jakarta Province was due to adequate coordination. This involved external parties such as companies that can pro-

vide CSR funds and non-governmental organizations that help impacted communities economically and socially. The government had also actively involved community and neighborhood associations to encourage the community's active role in handling the COVID-19 pandemic. Reliable information and the involvement of government and community leaders increased the confidence of the majority of the community in the provincial government's policies. This policy also utilized the natural capital of the Jakarta area, an urban center and administrative cities with a small area.[24] It facilitated the supervision and regulation of the area. Factors such as natural, human, and social capital, stakeholder engagement, community action, technology and communication, and economic and financial capital from the provincial government's policies for its administrative cities were enough to maintain more than half the proportion of community resilience.

Qualitatively, the role of each component of community resilience in the occurrence of QoL was obtained. During the pandemic, community resilience primarily came from the components of the political/governmental system, the education system, and the health system. There was indeed economic instability in some families, which was the initial stimulant for poor QoL and poor resilience due to feelings of stress, pressure, and anxiety. However, BST from the provincial and village governments eased their burden. The support for families infected with COVID-19 came in the form of groceries or food. The stigma decreased after more than a year of this pandemic. The emergence of stigma was likely to occur in a sociocultural context because it forms community assumptions that contribute to shaping community growth.[18] This was why the stigma was not as severe in the second wave of the COVID-19 pandemic, compared to the first wave.

Moreover, some informants hoped that the situation would soon return to normal, while others accepted the new normal and regarded the situation with a positive perception. Certain behaviors during the pandemic, such as wearing masks, seemed to be a new habit that is difficult to let go of. The data collection for this study was carried out during an increase in cases in the second wave of the COVID-19 pandemic, which means that the respondents already had the experience of dealing with the increase in cases during the first wave. Likewise, they must have gone through the stages of shock, denial, frustration, and depression.[25,26]

A weakness of this study is that a temporal ambiguity may occurred, but qualitative methods could be used to confirm the time sequence. It was also possible that non-differential misclassification occurred, leading to under-estimated results. Fortunately, the strength of this study was the use of PR as an association measure, which led the result to the true value, and there was consistency of

poor resilience as a risk factor for poor QoL. The findings of the study point to the need for interventions for individual resilience, especially for commitment/control, coping mechanisms, adaptability, and cognitive emotion regulation.

Conclusion

Poor individual, family, and community resilience were found to be risks for poor QoL. The relationship between individual resilience and QoL depends on the conditions of individual resilience: cognitive emotion regulation, adaptability, and optimism. The relationship between family resilience and QoL was determined by the age of the family decision-maker, social support, and the self-control of each individual. The relationship between community resilience and QoL was primarily determined by the stability of the education system, the health system, the political/government system, and the pandemic management system.

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