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RESEARCH ARTICLE

REVISED The conditional effect of family resilience on family quality of life during the Covid-19 pandemic

[version 3; peer review: 2 approved]

Tery Setiawan ^{1,2}, Ria Wardani¹, Ellen Theresia ¹¹Faculty of Psychology, Universitas Kristen Maranatha, Bandung, Indonesia²Department of Anthropology and Development Studies, Radboud University Nijmegen, Nijmegen, The Netherlands**V3** First published: 09 Nov 2022, 11:1279
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<https://doi.org/10.12688/f1000research.125852.2>Latest published: 12 Jan 2023, 11:1279
<https://doi.org/10.12688/f1000research.125852.3>**Abstract**

Introduction: The Covid-19 pandemic has brought unprecedented challenges, both economically and psychologically, to most families across the world. Yet, little study has been done on this topic in Indonesia, even after the second year of the pandemic. This study examines how the Covid-19 economic impact and parental stress are related to the family quality of life (FQOL) and how the relation is moderated by family resilience.

Methods: To this end, we employed previously tested measures to assess the level of parental stress, family resilience and FQOL. Especially for the latter, we modified the measure, developed by Beach Center on Disability, by including only four domains (i.e., family interaction, parenting, emotional well-being, and material well-being) to adjust to our research context.

Results: Based on 169 participants, our confirmatory factor analysis (CFA) displays that all employed measures in the study are valid and reliable. Our regression analysis shows that there are significant direct relations of parental stress & family resilience with FQOL. However, we find that family resilience only positively moderates the relation between the Covid-19 economic impact and FQOL but not the relation between parental stress and FQOL; indicating that high family resilience can only buffer the effect of economic impact on FQOL.

Discussion: This study presents a view on how the Covid-19 pandemic affects the way families live and hence, their quality of life. In addition, the findings suggest the importance of family relationship and support in times of crisis, not limited to the Covid-19 pandemic.

Keywords

family quality of life (FQOL), family resilience, Covid-19, parental stress, Indonesia

Open Peer Review**Approval Status**

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REVISED Amendments from Version 2

We thank the reviewers to have taken their time and read our revised version meticulously. Their input has significantly improved the text. In response to the 2nd round of review, we have revised the text specifically in the following sections: One, we have revised the abstract to convey clearer findings to readers, especially in the section where we discussed the moderation effect of family resilience. Two, we have included the back-translate procedure as one of our limitations in this study. Finally, we have expanded the relevance of the findings to other areas of research at the very end of our conclusion, such as in juvenile delinquency, families with disabilities etc.

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Introduction

The emergence of coronavirus disease (Covid)-19 in Indonesia, as in the rest of the world, has changed almost all aspects of human life rapidly. Due to the Covid-19 pandemic, the government implemented a large-scale social restriction policy that involved the closing of offices, factories, and schools as well as putting in place social distance in individuals' interaction (Meiliana, 2020). As a result, the policy has forced family members to spend as much time as possible at home, making it more as home confinement (Wang *et al.*, 2020). Children are no longer able to carry out learning activities at school, as well as leisure activities with their peers. In the meantime, parents are also the subject to home confinement. They need to work from home while, at the same time, are expected to oversee their children study at home (Griffith, 2020).

Although the experience of working from home is likely to be unpleasant for most families, this appears to be a better option than being unemployed or forced to close a business due to the pandemic. Data from the Ministry of Manpower on 27 May 2020 shows that there are at least 1.79 million workers who must be laid off due to the Covid-19 pandemic (Idhom, 2020). This number is predicted to continue to grow up to four to five million people (Gusman, 2020). To further complicate, Covid-19 places the elders as individuals with the highest risk of getting infected (Aronson, 2020). Therefore, the tradition of asking grandparents for help in supervising the children is no longer an option. With health protocols in force, this also means limited opportunity in receiving social support from family, neighbours, and friends. The lack of social support places a greater stress among parents. Based on all this, we argue that the combination of economic hardship and parental stress is likely to have negative impact on family processes, which can be observed in their quality of life (Hall & Clare, 2003; Hsiao, 2018).

Investigating family quality of life, rather than individual, during the pandemic is important, yet remains little studied; let alone studies in the Asian context, such as Indonesia. In a mundane life, children and parents are an integral part of a society which generally reflect a society's quality of life (for further explanation, see the ecological system of a family by Bronfenbrenner, 1986). Children's living condition is heavily contingent on their parents' living condition, similar to how parents' satisfaction with their life is largely dependent on their working condition as well as how their children feel and perceive towards their life (Prime *et al.*, 2020; Thomas *et al.*, 2017). During the Covid-19 pandemic, this claim has become even more evident. A significant change, *e.g.*, unemployment, that occurs within a family is likely to be experienced by the whole system. Therefore, investigating family quality of life (from here onwards is abbreviated FQOL) is of great importance to unfold the potential effects brought by the pandemic.

In relation to the Covid-19 pandemic, parents are deemed to have a certain level of stress in their parental role (Griffith, 2020). The stress is assumed to be more increased when there are additional demands arise from the pandemic, *e.g.*, uncertainty in employment, medical conditions caused by Covid-19 infection, *etc.* In addition, the response policy to the Covid-19 pandemic may significantly pose external demands to parents, *e.g.*, inability to have quality time outside home. Consequently, parents have a higher chance to run out of psychological resources to be able to regulate their emotions which can affect their effectiveness in their parental role (Östberg, 1998). As such, the pandemic not only decreases both material and psychological resources among parents, it also heightens their daily stress level. As a result, the heightened stress level may impair their family quality of life (Hall & Clare, 2003; Hsiao, 2018; Melberg, 2012).

Nevertheless, previous studies have shown that despite economic and psychological obstacles there are some who demonstrate competent family functioning (Patterson, 2002). According to Walsh (2003), the family's ability to fulfil their functions of providing basic needs, nurturing children, and other family functions amid ongoing economic and psychological strains is known as family resilience. There are three key family processes that have been shown to protect and even increase family quality of life, namely family belief systems, family organizational patterns, and communication/problem solving processes. All three key processes are argued to reduce stress among family members during the pandemic, (Prime *et al.*, 2020). Therefore, despite economic hardships during the pandemic families with high level of family resilience are expected to be able to deal with the adversity positively and hence, maintain their quality of life.

Taken together, it is of great importance to scrutinize family quality of life using relevant predictors during the Covid-19 pandemic. Yet, as previously mentioned, there is still very little research on the economic impact of Covid-19 on families in Indonesia. When such study exists, either it relies on secondary data (*cf* Radhitya *et al.*, 2020) or it mainly focuses on the economic indicators of the family. Thus, our study has two-fold relevance. First, for a theoretical purpose, we empirically test a theoretical model of risk and protective factors to family quality of life. As such, we are able to delineate and predict to what extent family quality of life is affected by economic aspect of the Covid-19 pandemic. Second, for a methodological purpose, we extend the applicability of FQOL measure in the general family context (see Zuna *et al.*, 2009a for a validation of FQOL measure in families without disabilities). In summary, we aim to investigate *to what extent family resilience moderates the relation between Covid-19 economic impact & parental stress during Covid-19 and family quality of life in several cities of Indonesia*. We will do so by employing general population of adults aged 18 above who are married and have, at least, one child.

Theoretical framework and hypotheses

In this section, we provide brief theoretical explanations related to psychological constructs employed in the study. We carefully selected these constructs based on the literature available. We will start the explanation from the outcome variable and continue to relevant predictors.

Family quality of life

Historically, quality of life is an interest of scholars in the field of health science, especially patients with disabilities (Hoffman *et al.*, 2006; Hu *et al.*, 2011). Its importance has inspired many studies not to focus merely on individuals, but also on family (*e.g.*, FQOL measure). In 1998, WHO initiated a research attempted to devise a universal instrument of quality of life, which can cover both 'ill' and 'well' samples (Division of Mental Health and Prevention of Substance Abuse, 1998). Its exploratory study consisted of patients with ill disease, 'healthy' patients, and health care providers. The final study involved 13 countries and 8,294 participants. The validity analyses suggested the measure to include six domains and 24 specific facets, including negative and positive feelings that usually refer to well-being measure. The measure has a two-fold indication. One, quality of life measure is a concern of every individual, regardless of their physical background. Two, the notion greatly overlaps with the concept of well-being; measuring one inevitably includes the other and vice versa. In times of the pandemic, people and their families are likely to be affected by ever-changing and pervasive health policies. Therefore, it is vital to investigate FQOL to predict the impact the pandemic has on a family and protect them against the risk factors resulted from the pandemic.

The conceptualization of FQOL relies on the following theoretical frameworks, (1) systemic concepts, (2) performance concepts, (3) individual-member concepts, and (4) family-unit concepts (Zuna *et al.*, 2009b). In a nutshell, the organizing frameworks suggest that the macro-level systems outside the family, *e.g.*, healthcare, education, along with their policies and programs are associated with individuals' demographic and characteristics, which directly impact individuals (Hoffman *et al.*, 2006). As each family member is associated to each other and to their habitat, any change experienced by a family member directly (and indirectly) impacts the whole family system (Samuel *et al.*, 2012). Therefore, a substantial change to normality brought by the Covid-19 pandemic is considered to highly impact family quality of life.

Besides health effects, the most direct impact of the Covid-19 pandemic comes from the economic aspect. Due to Covid-19, a lot of business are forced due to a wide-spread lockdown measure. Especially Indonesia, this has led to millions of job loss (Idhom, 2020). Although the government has provided subsidies for those who lost jobs during the pandemic, the support is not sufficient to cover monthly bills and necessities for the whole family (Saptoyo, 2021). Based on the family systems theory, the significant economic change will likely to disrupt the family balance (Samuel *et al.*, 2012). The relationship between parents' adversity and child's well-being work in a mutually reinforcing system; stress and disruption experienced by one party will affect the other. This significant economic change is expected to impact all dimensions of FQOL (Hall & Clare, 2003).

In detail, FQOL is generally thought to include dimensions such as closeness, family interaction, family's financial situation and a room for personal growth (Hu *et al.*, 2011). Based on its conceptualization, most of the FQOL scales emerge as an alternative and practical measure to the use of multiple measures. In this study, we specifically use the Beach Center FQOL scale (Beach Center on Disability, 2012). The measure consists of five domains, namely family interaction, parenting, emotional well-being, material well-being, and disability-related support. For the purpose of the study that focuses on general population, we retain four dimensions and leave out the last dimension. This use can be equally compared to FQOL scale proposed by Zuna *et al.* (2009a).

Covid-19 economic impact

Studies show that through aerosol droplets, a single-stranded ribonucleic acid (RNA) of the Covid-19 can infect up to 2.5 noninfected individuals (Kaye *et al.*, 2021). This infection has been shown to cost a human's life or, at a less severe level,

hospitalization. Due to the severity of the disease, the Covid-19 called for a special set of social and health protocols. As a result, the protocols inevitably started to disrupt supply chain of many trades, caused sudden unemployment, and forced closure of a great number of business (Akbulatov *et al.*, 2020; International Labour Organization, 2020). Not only does it pose economic cost on individuals, it has also precipitated many psychosocial impacts such as depression, substance abuse, etc (Bu *et al.*, 2020; Maital & Barzani, 2020). The latter impact, of course, can also be caused by the former due to a sudden change.

Specifically in Indonesia, the arrival of the Covid-19 has brought many unprecedented challenges to the families. According to a joint survey conducted by UNDP, UNICEF, Prospera and the SMERU Research Institute (2021), 74.3% of all the households they interviewed during October to November, 2020 admit that their family was earning less than they were in January of the same year. This, in turn, heightened the proportion of low-income households across the country. In specific, this economic impact was felt greater among families in urban areas. The drop in income was also reported in all variety of income groups. On the other hand, the economic impact was exacerbated by increased cost of daily life, such as groceries. Covid-related expenditures, *e.g.*, face mask, mobile communication also played a part in increasing living cost. Therefore, it is safe to say that the Covid-19 pandemic has brought economic hardships in most families across Indonesia.

In relation to FQOL, the economic impact seems to have a direct relation with the way families have to adapt. Hsiao (2018) shows that parental income plays a significant role on the FQOL. Many people are less satisfied with their financial circumstances during the pandemic (SMERU *et al.*, 2021). For others, the situation is even worse due to sudden unemployment or the closing of a business, and hence, forcing them to temporarily rely on government subsidy and aid (Gusman, 2020; Idhom, 2020). Based on this, we expect that *the Covid-19 economic impact, marked by less income and increased expenditure, is negatively related to FQOL* (H1).

Parental stress and lack of parental satisfaction

In general, parental stress is inherent in the parental role on a daily basis (Cronin *et al.*, 2015). The parental role includes providing care and developing intimate relationships, both of which can be exhausting and rewarding in itself. As such, it is common for parents to report some degree of parental stress in performing the role. Specifically, parental stress is defined as a set of physiological and psychological negative reactions towards the process of adaptation and demands in carrying out parental roles (Pontoppidan *et al.*, 2018). Without any specific family hardship, to some degree the stress is assumed to have no significant implication on the family. On the contrary, in times of difficulty, parental stress is likely to increase and will negatively affect parent-child relationship (Respler-Herman *et al.*, 2012). In addition, the degree of parental stress is strongly dependent on the stage of child development and the demands faced by parents (Louie *et al.*, 2017; Pontoppidan *et al.*, 2018).

In looking further at parental stress, one should also consider it from the perspective of how parents respond to their stressful situations (Cronin *et al.*, 2015). This becomes a key for parents in managing the stress they experience and finding effective coping strategies. Specifically, when parents perceive the role of parents as rewarding, for example through happiness, enjoyment, optimism, intimacy and satisfaction with the child, then they are likely to reap satisfaction from performing the parental roles (Berry & Jones, 1995). Those with high parental satisfaction are expected to enjoy performing their role as parents, enjoy being close to children and can show positive emotions when they are with the children. On the other hand, parents who perceive parenting as burdensome and demanding are expected to have a high degree of stress to the extent that they have difficulty in recognizing their children's basic needs (Respler-Herman *et al.*, 2012).

In line with this, parental stress scale (PSS) was developed as a way to determine the extent of parental stress in carrying out parenting role (Berry & Jones, 1995; Pontoppidan *et al.*, 2018). This is measured through the dichotomy of the parental stress subscale and the parental satisfaction subscale. PSS has been adapted in various countries such as China, Spain, Portugal, Denmark, Malaysia, and many others (Pontoppidan *et al.*, 2018). Given the fact that the Covid-19 pandemic has brought many difficulties to a large number of families in Indonesia, it is likely that the level of parental stress is increased while the parental satisfaction is decreased. Events, such as supervising child (ren) while working at home, being restricted to indoor activity, are likely to cause disturbances among parents (Griffith, 2020). Therefore, in times of the Covid-19 pandemic, *we expect that parental stress is negatively related to FQOL* (H2).

Family resilience

Resilience has been widely studied both at the individual as well as at the family levels (Masten, 2019). While the former level refers to individual's capacity to 'bounce back' from difficulty (Smith *et al.*, 2008), the latter refers to the capacity of a family system to survive and emerge from unfavourable circumstances, and to get stronger and more empowered (Walsh, 2003). This definition is in line with the conception of family as an adaptive system and a context for human development.

Family resilience has extended the development of theory in the field of family stress, coping, and adaptation (Patterson, 2002). During difficult times, family resilience will manifest itself in the extent to which a family is able to fulfil family functions, i.e., family membership, economic support, nurturance, and protection (Li *et al.*, 2019). We can claim that family resilience is a buffering factor in which families can rely on in times of hardship. However, it is important to note that there are times when families are able to swiftly bounce back from one adversity but take longer to recover from another type of adversity. This suggests that family resilience is also a process of continual growth and change across the life-span (Walsh, 2003).

Furthermore, Walsh (2003, 2016) identify three key processes within domains of family functioning to define family resilience. The dimensions are (1) family belief system which consists of sub-components of making meaning of adversity, positive outlook, transcendence and spirituality; (2) organizational processes that consists of flexibility, connectedness, and mobilizing sources and economic resources sub-components; and (3) communication/problem-solving processes consisting of clarity, open emotional sharing, collaborative problem-solving. The three key processes enable families to work together in times of great stress in order to fulfil family functions mentioned earlier (Prime *et al.*, 2020).

Specifically, it is argued that family belief systems reflect by and large how families view happiness as well as adversity (Walsh, 2003). The latter, indeed, shapes family members in their search for a meaning in times of crisis. During the Covid-19 pandemic, those with well-functioning belief system tend to look for positive motivation and encourage each other to get past the adversity. As Walsh (2016) argues, this type of family is likely to see adversity as a challenge which they can overcome with their available resources. At the same time, this way of thinking drives family members for a closer connection among each other. Through the times of the pandemic, well-functioning families show flexibility in adapting to new challenges. They are likely to adapt to a new situation by turning to each other for emotional and material resources and thus, strengthening their connectedness (Prime *et al.*, 2020). Furthermore, families with well-functioning belief system and positive organizational pattern are able to show positive collaboration in times of crisis. Through connectedness, they are able to share their opinions and feelings openly (Walsh, 2003). This open communication allows family members to create effective decision-making process and hence, they are likely to operate effectively in their efforts to solve problems. On the whole, the combination of three key process of family resilience is a buffer to protect family functioning in times of crisis. Therefore, we hypothesize that *family resilience positively moderates the relation between Covid-19 economic impact and FQOL* (H3). Similarly, parental stress is likely to be heightened due to unprecedented social policies implemented during the Covid-19 pandemic. However, taking into account the potential buffering effect of family resilience, we expect that *it positively moderates the relation between parental stress and FQOL* (H4).

Individual characteristics

We employ demographic information to further explore the FQOL. Typical information such as gender, age, educational level, and number of child(ren) are included as individual's characteristics. We also take demographic information as control variables to help ensure that there are no spurious relationships when considering the relevant predictors.

Methods

Prior to the study, we have carefully reviewed our steps of data collection to ensure that we conform to the ethical principles of psychology and social science fields. The ethical committee of the Faculty of Psychology where the authors are affiliated have approved the ethical clearance for the questionnaire and the survey (3/Psy/2021 on 1 June 2021). In addition, we have published the protocol for this study and it is publicly available ([dx.doi.org/10.17504/protocols.io.3byl4jbz2lo5/v1](https://doi.org/10.17504/protocols.io.3byl4jbz2lo5/v1)). The protocol, along with the measures employed in this study, can be used for replication and future studies. In this section, we start by explaining participants involved and continue to measures employed in the study. Finally, we conclude by delineating our strategy for analysis to answer the proposed hypotheses.

Participants

This study was conducted online from August 2021 until October 2021 using Qualtrics covering a wide coverage of Indonesia. This was done by involving local enumerators from several big cities, i.e., Bandung, Jakarta & its vicinities, Makassar, and Ambon, and instructed them to purposively distribute the Qualtrics link to their networks in local universities. Employing networks of local universities enable us to reach alumni and their extended networks. Although we did not aim for a nationwide generalizability, we believe that the selection of these cities represent a relevant case of Covid-19 impact on mostly urban areas (see Gusman, 2020; Idhom, 2020; Radhitya *et al.*, 2020). Our selection criteria of participants were (1) a parent who lives together with their child(ren) and with or without their spouse or partner, and (2) has lived in their city of residence for at least two years. We acknowledge that there are limitations to our purposive sampling strategy, such as sampling representativeness. However, due to the Covid-19 measures, this was the best option

to pursue in gathering participants from various locations. We also acknowledge that our participants would be biased towards middle income family due to the requirement of internet connection, accessible device and an intermediate skill of operating it. For this, sociodemographic information will be treated as control variables in the main analysis to ensure that there are no spurious relationships.

In a span of 3-month period, we distributed the survey link and successfully recruited 212 participants. The survey took about fifteen to twenty minutes to complete. In the end, we did not compute the time average taken by participants, because we set the online survey to allow participants to take a break during their participation thus, allowing multiple sessions or even days to finish the full questionnaire. The participants did not receive reward in any form. From 212 participants, we were only able to involve 169 participants due to either a substantial number of missing values or incomplete survey after 2 months. One from Takengon, two from Medan, 66 from Bandung and its vicinities (*e.g.*, Cimahi, Garut, Sumedang, Tasikmalaya), 41 from Jakarta and its vicinities (*i.e.*, Bekasi, Bogor, Serang, and Tangerang), 18 from Semarang and its vicinities (Cilacap, Yogyakarta, and Kebumen), four from Palangkaraya and its vicinities (*i.e.*, Tarakan and Pontianak), seven from Surabaya and its vicinities (*i.e.*, Nganjuk, Rembang, and Sampit), three from Denpasar and its vicinity (*i.e.*, Labuan Bajo), nine from Makassar and its vicinities (*i.e.*, Sengkang and Manado), 17 from Ambon, and finally one from Timika Papua. **Table 1** provides the overview of our participants.

Furthermore, we looked more closely at the demographic information. **Table 2** provides a detailed account of the information. First, in line with the mean value of the number of children ($M=2.27$), most participants (44%) from our sample are shown to have 2 children. Second, we show that, on average, most participants (48.5%) experienced a

Table 1. Descriptive statistics of all variables.

	Range	Min	Max	Mean	SD
Predictors					
Family quality of life	1–5	1.83	5	3.95	0.58
Covid-19 economic impact	1–3	1.50	3	2.43	0.43
Parental stress	1–5	1	3.29	1.82	0.50
Family resilience:	1–5	1.77	5	3.95	0.50
- Belief system	1–5	2.55	5	3.93	0.53
- Organizational pattern	1–5	1	5	3.97	0.61
- Problem solving	1–5	1.30	5	3.93	0.62
Individual characteristics					
Age	18–65	18	64	47.06	11.19
Gender (female coded 0)	0/1	0	1	.31	0.46
Educational level	1–6	4	6	5.27	0.59
Number of child(ren)	-	1	5	2.27	0.95

Table 2. Frequency of demographic characteristics.

Variables	Frequency (%)			
	1	2	3	4 (and more)
Number of child(ren)	35 (20.7)	75 (44.4)	39 (23.1)	20 (11.9)
Change of income*	10 (5.9)	77 (45.6)	82 (48.5)	
Change of expense*	23 (13.6)	51 (30.2)	95 (56.2)	
Work status**	84 (49.7)	43 (25.4)	42 (24.9)	
(1) Employee	74 (88.1)	9 (10.7)		1 (1.2)
(2) Entrepreneur	10 (23.3)	13 (30.2)	15 (34.9)	5 (11.6)
(3) Housewife/husband	26 (61.9)	10 (23.8)	6 (14.3)	

*Higher score indicating higher impact.

**1=employee; 2=entrepreneur; 3=housewife/husband.

decreased income during the Covid-19 pandemic. Although we notice that there is also a considerable number of participants (44.4%) who reported no change in their income. Meanwhile, a large number of participants (56.2%) reported an increased expense during the pandemic. Lastly, we also gathered a work status of participants and classified them into three broad categories, namely employee, entrepreneur and housewife/husband. It is shown that most of our participants (49.7%) are employees and the remaining are distributed almost equally across the other two categories. As a follow-up question, we asked participants whether there was a change due to the Covid-19 pandemic. The answer categories are 1 “no change”; 2 “instructed to stay home with a pay cut” for employees, “operational/economic capacity reduced to 50%” for entrepreneur and housewife/husband; 3 “instructed to stay home without pay” for employees, “operational/economic capacity reduced to more than 50%”; and 4 “laid off” for employees, “forced to close down” for entrepreneur and “economic capacity becomes impoverished” for housewife/husband. Here, a big majority of our employee and housewife/husband samples reported no change in their work and family. On the other hand, in the entrepreneur sample group, most participants (65.1%) reported that they had to reduce their operation by 50% or even reduced the operation to more than. While a small number of employee (1.2%) and entrepreneur (11.6%) reported to have been laid off or forced to close down their business.

Consent to participate

Prior to filling in the questionnaire, the participants were given brief information of the study. Next to that, they were required to give an informed consent that they have been given sufficient time to carefully read the study information and there was no undue influence on their decision to participate. If agreed, participants were allowed to move on to the questionnaire. Otherwise, they would be directed to the end of the survey. No ‘consent for publication’ was necessary as the survey did not require personal information, such as name, initial, and other traceable information. We also disabled the recording of the internet protocol (IP) address on the Qualtrics survey to ensure that no unnecessary personal information was recorded. In terms of data management, only the research team had access to the dataset excluding the local enumerators.

Measures

We employed measures that have been tested in previous studies. To serve the purpose of this study, we translated the measures into Indonesian language. Specifically for parental stress and family resilience measures, we checked our translation with the Indonesian studies that have involved the measures previously. Our translation is similar to the previous studies. As for the FQOL measure, each of us translated the measure and compared the results. Subsequently, we had to reach a consensus on the selected translation for each statement.

Next, to ensure their applicability in our research context, we conducted confirmatory factor analysis (CFA) using lavaan package in R version 4.2.1 (RRID:SCR_001905; <https://lavaan.ugent.be/>). In addition, we calculated *Alpha Cronbach* to assess the internal consistency of all the measures and average variance extracted (AVE) and composite reliability (CR) to measure the amount of variance that is accounted for by the latent constructs (Fornell & Larcker, 1981). The conventional benchmark for reliability level is larger than 0.70 or 0.80 (Brunner & Süß, 2005). As for AVE, the value should be larger than any correlation found between any pair of latent constructs or minimum at 0.50 (Fornell & Larcker, 1981). However, when AVE is found to be lower than 0.50 but CR is higher than 0.60, Fornell and Larcker (1981) argue that due to a more conservative estimate of convergent validity a construct with AVE lower than 0.50 can still be considered valid. Table 3 provides a bivariate correlation of the variables along with the value of AVE.

Family quality of life

As mentioned earlier, we employed a measure of FQOL by Beach Center on Disability (Hoffman *et al.*, 2006). The scale assesses family member’s perception towards the different aspects of family life. The original scale consists of five domains, namely family interaction, parenting, emotional well-being, physical/material well-being, and disability-related support. There are 25 items in the original scale, but with the exclusion of disability-related dimension we employed 19 items spread across four dimensions. Family interaction is assessed through items such as, “My family enjoys spending time together”. Parenting is measured by items such as, “Family members help the children learn to be independent”. Emotional well-being is assessed through items such as, “My family has the support we need to relieve stress”. Finally, material well-being poses items such as, “My family has a way to take care of our expenses”. All items are rated on a five-point Likert scale, with 1 being very dissatisfied and 5 being very satisfied.

Based on the CFA results, we observe that the measurement model is indeed composed of four dimensions. However, the first model did not show a good fit with the data. We noticed that one item from each dimension of material well-being, family interaction, and parenting shared a substantial variance with other dimensions. After the removal the CFA shows a better fit model, Chi-squared = 191.94, $p < 0.001$, confirmatory fit index (CFI) = 0.94, root mean square error of approximation (RMSEA) = 0.08, and the standardized root mean squared error (SRMR) = 0.04 (see Appendix 1 in the

Table 3. Bivariate correlations among predictors.

Variables	FQOL	Covid-19 impact	Parental stress	Family resilience	Belief system	Organizational pattern	Problem solving	Age	Educational level	Number of children
FQOL	-	-0.08	-0.36	0.66	0.61	0.44	0.65	0.12	-0.04	0.01
Covid-19 impact		-	-0.11	0.04	0.04	0.00	0.04	0.05	-0.10	0.01
Parental stress			-	-0.26	-0.32	-0.10	-0.22	-0.02	0.03	0.13
Family resilience				-	0.83	0.87	0.87	0.04	-0.03	-0.06
- Belief system					-	0.60	0.60	-0.15	0.01	-0.11
- Organizational pattern						-	0.63	-0.00	0.00	-0.05
- Problem solving							-	0.11	-0.08	-0.06
Age								-	-0.08	0.25
Educational level									-	-0.09
Number of children										-
AVE	0.36		0.38	0.31	0.31	0.27	0.36			
CR	0.90		0.89	0.92	0.75	0.77	0.85			

*Bold indicates significance at 0.05.

extended data for a final list of items). According to Hooper *et al.* (2008), such fit measures are considered as a good fit model. The factor loadings of the remaining items range from 0.47 to 0.72, indicating a good level of accounted variance (Peterson, 2000). In addition, the dimensions of the scale have a high level of reliability, with $\alpha = 0.89$ for family interaction, $\alpha = 0.87$ for parenting, $\alpha = 0.81$ for emotional well-being and finally $\alpha = 0.74$ for material well-being.

Covid-19 economic impact

According to a report by SMERU *et al.* (2021), Covid-19 has brought economic challenges to many families across Indonesia. They based their conclusion on two main economic indicators, namely reduced income and increased expense. Therefore, to assess the economic impact brought by the Covid-19 pandemic, we asked two items regarding respondents' change of income and expense. Respondents were asked to rate the items on a three-point Likert scale. The option categories range from 1 being income/expense is reduced to 3 income/expense is increased. Later in the analysis, we reversed the answer on a change of income item and calculated the total score for both items. Due to a two-item scale, we calculated its reliability by running a *Pearson* correlation and the result shows a significant correlation ($r = 0.17$, $p = 0.02$).

Parental stress

Parental stress scale (PSS) was employed to determine the extent of parental stress in carrying out parenting role during the Covid-19 pandemic (Berry & Jones, 1995; Pontoppidan *et al.*, 2018). The scale is composed of two subscales, that is the level of parental stress and the parental satisfaction. Parental stress subscale asks respondents to rate their perception towards their parental role through items, such as "Having children has been a financial burden". While parental satisfaction asks respondents to rate their satisfaction towards their parental role through items, such as "I feel close to my child (ren)". All items combined make up a total of 18 items and are rated on a five-point Likert scale, with 1 being strongly disagree and 5 being strongly agree. To compute the scale, we reversed the answer on all items in parental satisfaction subscale and then calculated the total score based on all items.

Through CFA, the first model shows a poor fit model. We observed that four items of parental stress subscale and one item of parental satisfaction subscale had a substantial shared variance with another subscale. After the removal of those items, the CFA shows a good fit model, Chi-squared = 116.89, $p < 0.001$, CFI = 0.95, RMSEA = 0.07, and the SRMR = 0.05. The factor loadings range from 0.51 to 0.71, indicating an acceptable level. The two subscales show a high level of reliability, $\alpha = 0.88$ for parental stress and $\alpha = 0.90$ for lack of parental satisfaction.

Family resilience

We assessed family resilience by employing family resilience framework by Walsh (2003). The framework proposes a multidimensional scale of family resilience, consisting of belief systems, organizational pattern and communication/problem solving (Walsh, 2016). Belief systems asks respondents to rate themselves on statements, such as "We try to understand the stress situation and focus on our choice". Organizational pattern consists of statements on family's flexibility and the way they organize themselves in times of crisis, such as "We are flexible in adapting to a new challenge". Finally, communication/problem solving assesses respondents' way of communication in a family through statements, such as "We can express our opinion and be honest to one another". Similar to previous scales, all items are rated on a five-point Likert scale, with 1 being strongly disagree and 5 being strongly agree. In total, the original scale consists of 32 items.

The first model in our CFA shows a poor fit model. Four items from belief systems dimension, and one item each from organizational pattern and communication/problem solving dimensions should be reconsidered due to cross loadings and low factor loading. After the removal of those items, the CFA demonstrates a good fit model, Chi-squared = 443.34, $p < 0.001$, CFI = 0.94, RMSEA = 0.06, and the SRMR = 0.05. The factor loadings of the remaining items range from 0.46 to 0.73, showing an acceptable level. Finally, all the dimensions of the scale show a high level of reliability, $\alpha = 0.91$ for belief system, $\alpha = 0.93$ for problem solving and $\alpha = 0.82$ for organizational pattern.

Individual characteristics

We employed straightforward demographic questions concerning age, gender, educational level, and the number of child(ren). These items help us in the main analysis to ensure that there are no spurious relationships of interest when individual characteristics are factored in the statistical models.

Strategy for analyses

Prior to running the main analyses, we conducted preliminary tests to ensure that our data fit the statistical assumptions, *i.e.*, linearity, normal distribution, and multicollinearity. The ANOVA tests show that most of our predictors have a linear relationship with the FQOL. Moreover, the values of skewness and kurtosis of all our variables are in the range of -0.40

to 0.58 to -0.71 to 1.46 , respectively, which suggest an acceptable range of normal distribution (Kim, 2013). Finally, the multicollinearity tests show that the values of variance inflation factor (VIF) and tolerance statistics are within acceptable range, that is from 1.01 to 1.08 and 0.93 to 0.99, respectively (Field, 2009; O'Brien, 2007). Based on all this, we can safely continue to our moderation analysis. In doing so, we mean-centred the predictors to enable easier interpretation on the results, *i.e.*, high level of family resilience refers to above the mean and low level refers to below the mean.

Results

We ran a moderation analysis in a step-wise fashion. Table 4 provides the full results of the analysis. In Model 1, we included only the main predictors of Covid-19 economic impact and parental stress. Here, although the relation of Covid-19 economic impact with FQOL is negative, it is not significant enough to affect FQOL ($b = -0.12$, $p = 0.22$). Furthermore, Model 1 shows that there is indeed a significant negative relation between parental stress and FQOL ($b = -0.46$, $p < 0.00$). Based on Model 1, we can conclude that the results disconfirm a hypothesis on the negative relation between Covid-19 economic impact and FQOL (H1) but fully supports a hypothesis on the relation between parental stress and FQOL (H2).

Subsequently, Model 2 adds family resilience into the model. Here, it shows that there is a substantial positive relation between family resilience and FQOL ($b = 0.69$, $p < 0.00$). This result indicates a plausible conditional effect of family resilience on the relation between the predictors and FQOL. However, the interaction effect should be tested further. Hence, we continue to Model 3 and Model 4.

In Model 3, with the inclusion of interactions between Covid-19 economic impact & parental stress and family resilience, we demonstrate that the significance of main effects remain similar ($b = -0.27$, $p < 0.00$ for parental stress; $b = 0.78$, $p < 0.00$ for family resilience). Further, we notice that there is a positive interaction between Covid-19 economic impact and family resilience on FQOL ($b = 0.32$, $p = 0.02$). On the contrary, there is no significant interaction between parental stress and family resilience on FQOL ($b = 0.22$, $p = 0.08$). Therefore, the results partially confirm the moderation hypotheses. We confirm that family resilience positively moderates the relation between Covid-19 economic impact and FQOL (H3), however, we reject the notion that family resilience positively moderates the relation between parental stress and FQOL (H4).

Figure 1 shows that although the medium and high family resilience groups seem to show a decrease in FQOL, here, we clearly see that those with medium to high family resilience level are better positioned in their quality of life in relation to their perception towards Covid-19 economic impact. Interestingly, those with low family resilience level are likely to show an increase in their FQOL when they perceive higher Covid-19 economic impact. On the other hand, Figure 2 shows that the main effect of parental stress is large enough to hinder the positive effect of family resilience on FQOL. Regardless of family resilience levels, those who perceive high parental stress are likely to show a substantial decrease in their FQOL.

Table 4. Conditional effect of family resilience on the relation between predictors and FQOL (N = 158), with standard error in parentheses.

Predictors	Model 1	Model 2	Model 3	Model 4
Intercept	3.94	3.95	3.96	3.75
Covid-19 economic impact	-0.12	-0.14	-0.13	-0.13
Parental stress	-0.46	-0.27	-0.27	-0.29
Family resilience		0.69	0.78	0.77
Interaction effect				
Covid-19 economic impact*Family resilience			0.32	0.31
Parental stress*Family resilience			0.22	0.20
Individual characteristics				
Age				0.01
Gender (female = 0 as reference)				0.08
Educational level				-0.02
Number of child				0.02
Adjusted R^2	0.14	0.49	0.52	0.52

*Bold indicates significance at 0.05.

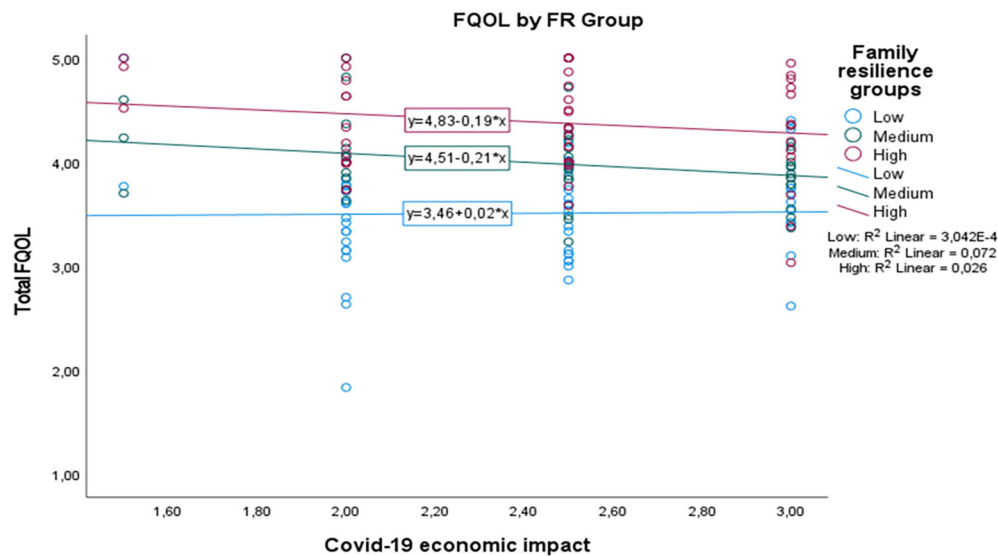


Figure 1. The conditional effect of family resilience on the relation between Covid-19 economic impact and FQOL.

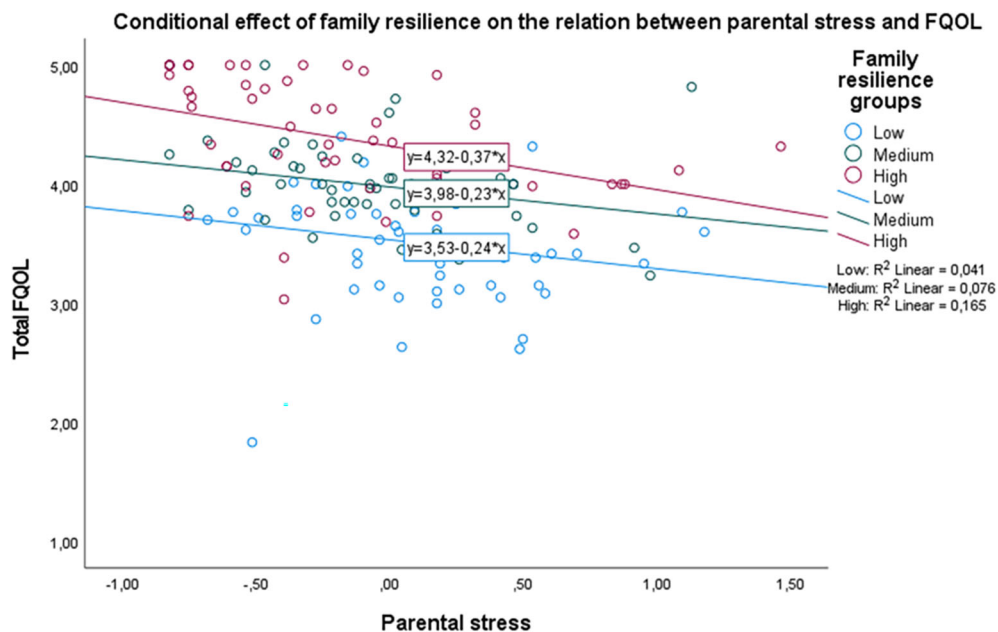


Figure 2. The conditional effect of family resilience on the relation between parental stress and FQOL.

Finally, in Model 4, we made sure that our previous relations do not substantially change by including demographic characteristics. Here, we show that demographic characteristics appear to have no significant relation with FQOL and at the same time, the previously found significant relations do not substantially change. Therefore, we can safely assume that the significant relations between parental stress & family resilience, on one hand, and FQOL, on the other, are not affected by individual characteristics.

Discussion and conclusion

The Covid-19 pandemic unquestionably has become an unparalleled challenge for families across the world, especially in Indonesia. Taken into account the most notably effect of the pandemic, namely economical and psychological impacts, we aim to answer to what extent the Covid-19 economic impact & parental stress during the pandemic are related to

FQOL while moderated by family resilience in several cities of Indonesia. The results show mixed findings, with most of the proposed hypotheses are supported.

First, although many reports show that the economic impact brought by the Covid-19 pandemic hit hard many families across the income level (SMERU *et al.*, 2021), we do not find that this impact is negatively related to FQOL among our respondents. This conflicts with other previous studies that show when family's material well-being is affected, such as due to unemployment change, their family interaction and parenting are more likely to be reduced (Tsai & Chen, 2017). Hence, the low FQOL is assumed. We offer three reasons regarding this finding. One, according to many reports, local governments were claimed to be cooperative efficiently with the central government of Indonesia in delivering aid to those who have lost employment and substantially reduced income due to the pandemic (Hanaf *et al.*, 2020). In addition, several social assistance programs, such as the Family Hope Program (*Program Keluarga Harapan*; PKH) and food staples program through grocery card (*Kartu Sembako*) were quickly modified not only aimed for the lowest-income families but also for new beneficiaries who were affected by the pandemic (SMERU *et al.*, 2021). In several areas, there were even cash transfer programs directly to the households. Therefore, although the economic impact was heavily felt families were still able to cope with economic assistances from the government. Two, closely related to the delivery time of the assistances, this study was conducted in the middle of 2021 where many government aids have started to be delivered (Saptoyo, 2021). Thus, the Covid-19 economic impact may have worn down and families have adapted to their new financial circumstances. Three, we notice that most of our participants did not report a substantial decrease in income due to the pandemic. This is also in line with a large number of employees and housewife/husband (and a considerable number of entrepreneur) who reported no change in their work or business status. This number may explain why we find no evidence on the relation between economic impact and FQOL in our samples.

On the contrary, the assessed parental stress level during the pandemic is shown to be significantly related to FQOL. This is in line with the claim that impact of parental stress can spill-over to their relationship with the children and their children's well-being (Berry & Jones, 1995). In this situation, the Covid-19 pandemic is considered to be a major stressor for the parents and hence, affecting their behaviours towards their children. Studies have shown that parents have a higher chance to experience burnout and perform 'bad' parenting, such as children maltreatment (Chung *et al.*, 2020; Griffith, 2020; Lawson *et al.*, 2020). As a consequence, the relationship between parents and child (ren) are impaired and most importantly, negatively affect their FQOL (Summers *et al.*, 2005).

Next, we have shown that family resilience is positively, directly, related to FQOL. As Prime *et al.* (2020) argue, family resilience should foster positive outcomes in times of Covid-19 among family members. Although the quality of relationships are most likely to be affected during the pandemic, those with high level of family resilience should be able to improve and maintain quality family relationships. Apart from that, Walsh (2016) suggests that in times of crisis such families will develop new ways of viewing challenges and thus, encouraging positive outlook out of the crisis.

In addition, we should also take into account by which family systems work in Indonesia. Reciprocation between parents and children are still regarded highly in the Asian context, including Indonesia (Tsai & Chen, 2017). In times of crisis, this tendency can be a valuable resource in which parents with no hesitation financially assist their children or otherwise. Such family-reliance behaviours can also extend to co-residing with either or both parents. This norm, therefore, may play a role in maintaining the way family members communicate and support each other. In turn, their family quality of life is well protected from being drastically affected by the pandemic.

Furthermore, we have also confirmed the moderating effect of family resilience on the relation between the family stressor and FQOL. Specifically, on average, we find that our respondents are economically impacted by the Covid-19 pandemic (see Table 1). Although the impact is not related to FQOL, with family resilience we can claim that their FQOL is relatively maintained and even increased, even for families with a low level of family resilience. This finding corroborates previous studies that show family resilience help families in developing new ways of dealing with challenges relying on resources at their disposal (Li *et al.*, 2019). Through well-functioning ways of seeing a crisis or challenge, flexibility among family members, and open communication, they can rely on each other and create a better decision-making in attempting to ameliorate their momentarily-deprived economy (Walsh, 2003). As a consequence, family resilience may foster positive psychological outcomes in times of crisis. However, this claim should be further studied since our study does not test any causality.

In spite of the direct relation between family resilience and FQOL, the buffering effect of family resilience is shown to be less effective in moderating the negative relation between parental stress and FQOL. This finding opens alternative explanations to the literature of family resilience as well as parental stress. First, parental stress during crisis times is highly likely to be heightened and thus, largely affect the way families navigate themselves in solving the crisis.

Therefore, even when protective factors are present within the family, such as positive family relationships, parental stress will most likely still reduce many aspects of the quality of family life, such as parenting and family well-being (Tsai & Chen, 2017; Zuna *et al.*, 2009b). Second, it shows a persisting effect of parental stress during crisis times. Unlike economic impact of Covid-19, parental stress seems to persist even when the pandemic has turned to one year. Keeping the Covid-19 pandemic situation in mind, this is logical because psychological help, extended family members' help, and even neighbours' help is still very limited due to health protocols during the pandemic. Therefore, parental stress is likely to persist in affecting FQOL. Finally, the finding opens a possible discussion that family resilience should be considered as a process and may work differently in different stages of crisis. Similar to the notion of resilience in general, family resilience should be viewed in its temporal context during the times of crisis (Masten, 2019).

It is also worth discussing why demographic characteristics are not related to the FQOL. First, by the time the survey was underway, most family members, irrespective of their gender, education and a number of children, were experiencing a similar change in their quality of life. After all, the Covid-19 pandemic has been shown to affect most, if not all, families in Indonesia (SMERU *et al.*, 2021). Second, quality of life of an individual has been shown to be mainly related to their relations with others (White, 2015). Therefore, rather than their individual characteristics, the extent to which individuals develop their social relations positively may, indeed, play a more significant role in determining their FQOL. Thus, its relation between family resilience is shown to be very strong in this study. In light of this finding, we encourage other scholars to further investigate the notion of FQOL in other adverse circumstances, while taking into account the localities of the research area. Contextual factors, such as religiosity and ethnic identification, may play a role in developing FQOL among families in Indonesia (Cameron, 2004; see Hadiz, 2017 for the importance of religious identity).

We acknowledge several limitations in this study. One, we realize that our small sample may not reflect the whole picture of the family situation across Indonesia. and therefore, we cannot infer anything about local cultural differences across the regions. These differences, of course, might have played a role in determining the level of FQOL. In addition, conducting online survey in times of the pandemic apparently remains a challenge to many Indonesians, ranging from 'too exhausted viewing screen', less enthusiastic, low internet coverage, to a lack of skills in operating the application (Wisanti *et al.*, 2021). The anticipation of 'online exhaustion' also encouraged us to reduce a number of questions, such as years of marriage and co-residing with parent(s), so that we would still have a high completion rate. Therefore, not only were we unable to acquire a desired sample size, we were also unable to cover an extensive list of demographic questions. Two, the study was a one-shot study. We do not have data on the variables of interests prior to the pandemic. Therefore, we cannot compare the disparity between the two conditions. Most importantly, we cannot draw any causal conclusion regarding the relations under study. We know that there is a different dynamic in the relationships between parental stress and family resilience and FQOL during the pandemic, but we cannot be sure to what extent the pandemic has brought changes to these relationships. Finally, in adapting the English scales into Indonesian questionnaire we did not perform a back-translate to the original language and have experts rate the differences between the Indonesian and English versions. Although in our case the Indonesian translation was similar to previous studies in the Indonesian context, we still encourage future studies to undergo a back-translate procedure to verify that the original meaning is maintained after the translation.

In conclusion, the findings of the study shed a light into family circumstances in Indonesia during the Covid-19 pandemic, which has not received adequate academic attention. We show that after a one-year experience of Covid-19, on average, respondents do not feel that the economic impact is negatively related to their FQOL. However, unlike the economic impact, parental stress is negatively related to the FQOL. This might be due to the many changes they had to undergo during the pandemic which has exacerbated their parental stress level. On a positive note, we find that family resilience can help families buffer the economic impact of the Covid-19 pandemic on their FQOL, although not so much with parental stress. Based on this, government agencies and other related parties should put more attention to offering psychological help to families through available mediums, *e.g.*, social media and hotline numbers, that are Covid-19 proof. Finally, the current findings suggest that unexpected challenge or a sudden change is inevitably part of every family life. One way to overcome this is by adapting family resilience as a system, in which the adaptation is largely dependent on the way family members utilize their relationship and exchange of social support (Masten, 2019). By this, family members can rely on each other and at the same time overcoming their individual limitation. Based on this, future studies are encouraged to pursue the relevance of family resilience in overcoming other challenging events, such the loss of a family member, juvenile delinquency and families of child(ren) with a disability.

Author's note

This research adheres to research ethics provided the Committee on Publication Ethics (COPE).

Data availability

Underlying data

Figshare: Underlying data for “The conditional effect of family resilience on family quality of life during the Covid-19 pandemic”. DOI: <https://doi.org/10.6084/m9.figshare.20746411> (Setiawan *et al.*, 2022).

Extended data

Figshare: Extended data for “The conditional effect of family resilience on family quality of life during the Covid-19 pandemic”. DOI: <https://doi.org/10.6084/m9.figshare.21342126> (Setiawan *et al.*, 2022).

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Open Peer Review

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Version 3

Reviewer Report 13 January 2023

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I have reviewed the revised manuscript, and I believe that the authors have satisfactorily addressed all of the comments and concerns that I raised in my review.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: social psychology, psychometrics, forgiveness, and positive psychology.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 2

Reviewer Report 09 January 2023

<https://doi.org/10.5256/f1000research.141977.r157992>

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I have reviewed the revised manuscript, and I believe that the authors have satisfactorily addressed all of the comments and concerns that I raised in my review.

The revised manuscript is now ready for indexing in my opinion. I believe that the changes made by the authors have significantly improved the quality and clarity of the manuscript, and I am confident that it will be of interest to the readers of your journal.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: social psychology, psychometrics, forgiveness, and positive psychology.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 10 Jan 2023

Tery Setiawan

Thank you for the updated review on our manuscript. We believe that your previous input has helped us improve the text.

Competing Interests: All authors declare no competing interests in revising the text.

Reviewer Report 13 December 2022

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Tita Alissa Bach 

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Thank you for the revision. I have just minor comments that you may choose to address. Otherwise, a very well written paper and I hope that others can learn from your study not only during a pandemic.

Abstract:

- Spell out CFA?
- What does this mean: "family resilience only positively moderates.."?

Method:

- Translating the questionnaire into Indonesian without back-translate it to English and rate differences between the two (original in English vs. back-translated English), which is a standard procedure in a survey study, is okay for your study, but I would suggest to put this as a limitation.

Conclusion:

- I think your study is important and not only during the pandemic. If possible, it would be very helpful for other researchers to provide future directions on how your study can be made relevant for situations other than just during a pandemic.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: healthcare, psychology, human factors, sociology, behavioural and social sciences

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 10 Jan 2023

Tery Setiawan

Thank you for your second round of review. We have revised the text according to your input. We also would like to thank you again for having taken the time to read the manuscript carefully and provided such input that have helped us improve the text.

Competing Interests: All authors declare no competing interest in revising the the text.

Version 1

Reviewer Report 01 December 2022

<https://doi.org/10.5256/f1000research.138200.r155877>

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The research was conducted when there was a sharp increase of Covid-19 positive cases in July - August 2021, and it declined during September 2021. The authors conducted an interesting study and the article makes an early contribution to the knowledge of family dynamics and economic conditions during Covid-19 in Indonesia - although the coverage of the geographic area in this research needs to be noted.

The abstract needs to be improved especially in the method section and results.

Keywords can also be improved - as a suggestion: covid-19 economic impact.

Methods:

- It was a good initiative and practice to publish the study protocol before the authors conduct the research. It allows other researchers to replicate this research.

Demographic data:

- The results found that Covid-19 economic impact was not significant; the authors should inform the reader more about demographic data from this sample: like the number of children in frequency (or %). A family consisting of a small number of children will have different economic burdens. Also with other categories variables: gender, and educational background. Did the authors ask about the participant's employment status?
- How about the distribution of responses regarding respondents' change of income and expense? How many of the participants responded that their income/expense is reduced or income/expense is increased? (The authors wrote three options about this one).
- Maybe this descriptive analysis can contribute to the result explanation of this research. The authors could add one more table to describe.
- The covid-19 economic, family resilience, parental stress, and family quality of life findings were interesting. Based on the demographic data of the majority of the participants; did the authors consider that the children's age range, cultural role, and geography might influence the variables of interest?

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Partly

Are all the source data underlying the results available to ensure full reproducibility?

Partly

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: social psychology, psychometrics, forgiveness, and positive psychology.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 07 Dec 2022

Tery Setiawan

We truly thank the reviewer for very insightful remarks and suggestions for the manuscript. We believe that your feedback has helped the manuscript greatly improve. The following are responses to your remarks/suggestions.

Response to Reviewer 2 Comments:

The research was conducted when there was a sharp increase of Covid-19 positive cases in July - August 2021, and it declined during September 2021. The authors conducted an interesting study and the article makes an early contribution to the knowledge of family dynamics and economic conditions during Covid-19 in Indonesia - although the coverage of the geographic area in this research needs to be noted.

The abstract needs to be improved especially in the method section and results.

Response: Thank you for your suggestion on the abstract. We agree and therefore, have revised it accordingly.

Keywords can also be improved - as a suggestion: covid-19 economic impact.

Response: Thank you for your suggestion on the keyword. We have added your suggested keyword to the list of keywords.

Methods:

It was a good initiative and practice to publish the study protocol before the authors conduct the research. It allows other researchers to replicate this research.

Response: Thank you for your encouragement. We also believe that providing protocol and materials are necessary for replication as well as further future investigations.

Demographic data:

The results found that Covid-19 economic impact was not significant; the authors should inform the reader more about demographic data from this sample: like the number of children in frequency (or %). A family consisting of a small number of children will have different economic burdens. Also with other categories variables: gender, and educational background. Did the authors ask about the participant's employment status?

Response: Thank you for your input on demographic information. We agree with this suggestion and we have provided such information in the text. We have also provided a new table as you suggested.

In response to your question on the employment status, yes, we asked participants such information. This information is now available in the new table (Table 2)

How about the distribution of responses regarding respondents' change of income and expense? How many of the participants responded that their income/expense is reduced or income/expense is increased? (The authors wrote three options about this one).

Response: Thank you for your feedback on providing more information of respondents' change of income and expense. This information is now available in the new table (Table 2).

Maybe this descriptive analysis can contribute to the result explanation of this research. The authors could add one more table to describe.

Response: Thank you for your suggestion on adding more information of the descriptive analysis. We have now provided a new table (Table 2) containing frequency of several demographic information to be used later in discussing the findings. Next to this, we have provided an additional explanation as to why we find no evidence on the relation between economic impact of the Covid-19 pandemic and FQOL.

The revision is incorporated in the following part (of discussion): "Three, we notice that most of our participants did not report a substantial decrease in income due to the pandemic. This is also in line with a large number of employees and housewife/husband (and a considerable number of entrepreneur) who reported no change..."

The covid-19 economic, family resilience, parental stress, and family quality of life findings were interesting. Based on the demographic data of the majority of the participants; did the authors consider that the children's age range, cultural role, and geography might influence the variables of interest?

Response: Thank you for your remark on the cultural differences. We acknowledge that local cultural differences might have played a role in determining our findings. Even though

we do not have sufficient information to infer such arguments, we have provided this as an alternative explanation which, of course, should be further investigated.

The revision is incorporated in the following part: "In addition, we should also take into account by which family systems work in Indonesia. Reciprocation between parents and children are still regarded highly in the Asian context, including Indonesia (Tsai & Chen, 2017)."

Competing Interests: All authors declare no conflict of interests in writing this manuscript.

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Abstract:

- This is maybe due to the word limit, but the abstract is not very clear.

General feedback:

- Are Covid 19 measures still valid in Indonesia? This study seems to be focusing on as if the measures were still ongoing. please adjust more timely to what is happening now and put your study in this context. I understand this study happened in the past when the measures were still valid, and this is fine, but the way reads now, it feels as if it was still like that, which is not true. Otherwise, your study does not really feel so relevant now when most countries have moved on from Covid 19 measures. Maybe put in the context as "lessons learned", and then generalise/extrapolate your findings and study into how people can learn from your findings *now* when the measures have been lifted. I believe that family resilience is crucial to cope with challenges, not necessarily only during covid measures. So maybe approach your study as a case study during covid measures.
- In the discussion, I feel the unique characteristics of Indonesia are not really put into account. Families being resilient can be different in different countries due to local/cultural aspects. How is this for your findings in Indonesia?

- Why were participants only recruited from local universities? To my knowledge, married couples are more limited there.
- It seems to be very ambitious to recruit the whole country. What was the reason not to target a specific study population? This is a survey study that can be done in collaboration with for example a maternity clinic, or wherever families/married couples hang around. In addition, targeting a study population will enable calculation of a response rate, which is lacking in your study. Once a response rate is available, non-response bias can be evaluated as this is a big factor for survey studies.
- You mention that you involved "participants from all around the archipelago" - yet only included several big cities. It is probably best to adjust these sentences? Also because in the same paragraph, you said "although we did not aim for a nationwide generalizability..." then why mention in the first place that you recruited the whole nation?
- In which language was the survey for participants? Was the original survey (presumably in English) translated to Indonesian? How was the process? How was the Indonesian version validated?
- Although it is negative findings based on Table 3, please discuss why demographic information does not influence.
- Have you considered cultural differences as a factor here? Bandung and Jakarta may be rather similar, but when you start to involve Makassar and Ambon that can have different cultural attributes, this can explain some of your findings. Indonesia is too big to assume coherent and similar cultural factors and beliefs.
- Why only include typical demo info? What can make up resilience apart from included demo info? Could it be how long the couples have been married, whether both parents work, whether parents live together or live with other family members, access to support important for family resilience?
- Is the survey available for free for replication of your study?
- If the survey is online, do you have data for the average time someone took to finish the survey? You wrote that it takes about 15-20 minutes, is this the case though for your participants?

Individual characteristics:

- "number of children" not child.

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Partly

If applicable, is the statistical analysis and its interpretation appropriate?

I cannot comment. A qualified statistician is required.

Are all the source data underlying the results available to ensure full reproducibility?

Partly

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: healthcare, psychology, human factors, sociology, behavioural and social sciences

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 07 Dec 2022

Tery Setiawan

We would like to truly thank the reviewer for very insightful remarks and suggestions for the manuscript. We believe that your feedback has helped the manuscript greatly improve. The followings are responses to your remark/suggestion:

Response to Reviewer 1 Comments

Abstract:

This is maybe due to the word limit, but the abstract is not very clear.

Response: Thank you for your feedback on our abstract. We have added more information to revise the abstract accordingly.

General feedback:

Are Covid 19 measures still valid in Indonesia? This study seems to be focusing on as if the measures were still ongoing. please adjust more timely to what is happening now and put your study in this context. I understand this study happened in the past when the measures were still valid, and this is fine, but the way reads now, it feels as if it was still like that, which is not true. Otherwise, your study does not really feel so relevant now when most countries have moved on from Covid 19 measures. Maybe put in the context as "lessons learned", and then generalise/extrapolate your findings and study into how people can learn from your findings now when the measures have been lifted. I believe that family resilience is crucial to cope with challenges, not necessarily only during covid measures. So maybe approach

your study as a case study during covid measures.

Response: Thank you for your suggestion on extrapolating the current findings. We agree that, indeed, the findings can be generalized to different circumstances. For that, we have revised it accordingly.

The revision is incorporated in the following part (of the last paragraph of the text) : “Finally, the current findings suggest that unexpected challenge or a sudden change is inevitably part of every family life. One way to overcome this is by adapting family resilience as a system, in which the adaptation is largely dependent on the way family members utilize their relationship and exchange of social support (Masten, 2019).”

In the discussion, I feel the unique characteristics of Indonesia are not really put into account. Families being resilient can be different in different countries due to local/cultural aspects. How is this for your findings in Indonesia?

Response: Thank you for your comment on the unique characteristics of Indonesian families. We agree with this and we have responded to the comment accordingly in the text. The revision is incorporated in the following part: “In addition, we should also take into account by which family systems work in Indonesia. Reciprocation between parents and children are still regarded highly in the Asian context, including Indonesia (Tsai & Chen, 2017).”

Why were participants only recruited from local universities? To my knowledge, married couples are more limited there.

Response: Thank you for your comment on this. We agree that we should have been more clear on the reason of recruiting from local universities. We have revised it accordingly in the text.

The revision is incorporated in the following part: “Employing networks of local universities enable us to reach alumni and their extended networks.”

It seems to be very ambitious to recruit the whole country. What was the reason not to target a specific study population? This is a survey study that can be done in collaboration with for example a maternity clinic, or wherever families/married couples hang around. In addition, targeting a study population will enable calculation of a response rate, which is lacking in your study. Once a response rate is available, non-response bias can be evaluated as this is a big factor for survey studies.

Response: Thank you for your comment on the data collection procedure. We agree that having a cooperation with certain institutions would enable us gather a specific set of sample and thus, enabling us to calculate a sampling representativeness. However, the aim of the study itself was to capture FQOL from various areas where we were able to access in such a short time. Therefore, this was the best solution available at the time.

You mention that you involved "participants from all around the archipelago" - yet only included several big cities. It is probably best to adjust these sentences? Also because in the same paragraph, you said "although we did not aim for a nationwide generalizability..." then why mention in the first place that you recruited the whole nation?

Response: Thank you for your correction. We completely agree to revise such statements. The revision is incorporated in the following part: "This study was conducted online from August 2021 until October 2021 using Qualtrics covering a wide coverage of Indonesia".

In which language was the survey for participants? Was the original survey (presumably in English) translated to Indonesian? How was the process? How was the Indonesian version validated?

Response: Thank you for your comment on the process of the translation. We agree that we should have made it more explicit in the text. Therefore, we have revised the part accordingly.

The revision is incorporated in the following part: "To serve the purpose of this study, we translated the measures into Indonesian language. Specifically for parental stress and family resilience measures, we checked our translation with the Indonesian studies that have involved the measures previously..."

Although it is negative findings based on Table 3, please discuss why demographic information does not influence.

Response: We have added a plausible explanation in response to this.

The revision is incorporated in the following part: "It is also worth discussing why demographic characteristics are not related to the FQOL. First, by the time the survey was underway, most family members, irrespective of their gender, education and a number of children, were experiencing a similar change in their quality of life. After all, the Covid-19 pandemic has been shown to affect most, if not all, families in Indonesia (SMERU et al., 2021)..."

Have you considered cultural differences as a factor here? Bandung and Jakarta may be rather similar, but when you start to involve Makassar and Ambon that can have different cultural attributes, this can explain some of your findings. Indonesia is too big to assume coherent and similar cultural factors and beliefs.

Response: Thank you for your remark on the cultural differences. We acknowledge that local cultural differences might have played a role in determining our findings. However, we do not have sufficient information to infer such arguments. Although we have incorporated your remark on this in our study limitation in a discussion section.

The revision is incorporated in the following part: "One, we realize that our small sample may not reflect the whole picture of the family situation across Indonesia and therefore, we

cannot infer anything about local cultural differences across the regions These differences, of course, might have played a role in determining the level of FQOL.”

Why only include typical demo info? What can make up resilience apart from included demo info? Could it be how long the couples have been married, whether both parents work, whether parents live together or live with other family members, access to support important for family resilience?

Response: Thank you for your comment and we completely agree with this. In conducting this study, we were warned of the ‘online exhaustion’ among people during the Covid-19 pandemic. Therefore, we had to sacrifice some of the important questions, such as the ones you mentioned, to ensure that the completion rate is quite enough for us to compute the main analyses. Nevertheless, we have also incorporated this information in our study limitation to encourage others scholars to include them in future studies. The revision is incorporated in the following part: “The anticipation of ‘online exhaustion’ also encouraged us to reduce a number of questions, such as years of marriage and co-residing with parent(s), so that we would still have a high completion rate.”

Is the survey available for free for replication of your study?

Response: Thank you for your question. Yes, the survey, along with its protocol, is available online so that other scholars are able to replicate the study. The statement is incorporated in the following part: “The protocol, along with the measures employed in this study, can be used for replication and future studies.”

If the survey is online, do you have data for the average time someone took to finish the survey? You wrote that it takes about 15-20 minutes, is this the case though for your participants?

Response: Thank you for your valuable question on the completion time. We have responded to the question accordingly in the text. The revision is incorporated in the following part: “In the end, we did not compute the time average taken by participants, because we set the online survey to allow participants to take a break during their participation thus, allowing multiple sessions or even days to finish the full questionnaire.”

Individual characteristics:
"number of children" not child.

Response: Thank you for your correction. We have revised it accordingly.

Competing Interests: All authors declare no conflict of interests in writing this manuscript.

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