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Perceived risk, fear of Covid-19, and resilience on mental health of Malaysian emerging adults during the Covid-19 pandemic

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Abstract
The coronavirus (COVID-19) pandemic affects one's physical and mental state. Past studies reported higher levels of anxiety, distress, and depression, especially among emerging adults, indicating the need of studying how COVID-19 affects one mentally. Hence, this study looked to investigate the predictive effect of perceived risk, fear of COVID-19, and resilience on mental health among Malaysian emerging adults. 182 emerging adults were recruited in the cross-sectional study through an online survey using the purposive sampling method. Results showed that resilience significantly and positively predicted mental health while perceived risk and fear of COVID-19 were insignificant predictors of mental health. Overall, practitioners and policymakers are encouraged to focus on resilience-based interventions to improve our emerging adults' mental health. This is because emerging adults with strong mental health can serve as a strong impetus for national development.

Keywords: COVID-19, perceived risk, mental health, emerging adults, Malaysia

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Introduction

The coronavirus (COVID-19) outbreak started in China at the end of 2019 (Khan et al., 2020). Due to the transmissibility and severity of the virus, the World Health Organization (WHO) announced it as a pandemic on 11th March 2020 (Durcharme, 2020). Millions of people have been affected by the pandemic, not only physically but also mentally (Ribeiro et al., 2020). The negative impacts on mental health include psychological disturbance, specifically anxiety and stress (Cao et al., 2020; Tabri et al., 2020). In addition, there are empirical evidences from several nations that showed an increased level of anxiety disorder, dejection, posttraumatic stress, and symptoms of panic disorder as a result of the pandemic (Lei et al., 2020; McBride et al., 2020; Qiu et al., 2020; Shevlin et al., 2020).

Emerging adulthood, one of the stages across one's lifespan, is defined as individuals aged 18 to 29 (Arnett et al., 2014). This specific age group has been majorly affected by the pandemic's negative impacts, such as the disruption of education, occupational opportunities (Kujawa et al., 2020), unemployment, and job scarcity (International Labor Organization, 2020). This finding is also supported by past researchers who found that 75.9% of the young adults (age 18 to 24) were experiencing at least one negative mental or behavioural health symptom, and they are the riskiest age group compared to other groups (Cao et al., 2020; Czeisler et al., 2020; Huang & Zhao, 2020a; McGinty et al., 2020; Qiu et al., 2020).

Typically, mental health has been identified as "a state of well-being in which an individual realises his or her abilities, can cope with the normal stresses of life, can work productively and is able to contribute to his or her community" (World Health Organization, 2018). In other words, mental health is not measured merely by the non-appearance of mental illness. The pandemic continues to create uncertainties and gives rise to more negative emotions (e.g., anxiety, worry), which may lead people to perceive themselves as at risk of being infected by the COVID-19 virus. Therefore, empirical studies (e.g., Kim et al., 2020a; Li et al., 2020a;

Malesza & Kaczmarek, 2020; Yildirim et al., 2020a) have reported perceived risk as one of the significant predictors in determining one's mental health. A study conducted by Yildirim and Güler (2020b) revealed a significant negative correlation between perceived risk of infection and psychological well-being. One possible reason is that the extreme level of the perceived risk of COVID-19 leads to an increased experience of death distress, resulting in poorer psychological well-being (more distress, less happiness).

COVID-19 and its consequences inevitably trigger fear among the public. Fear is defined as negative emotions followed by excessive emotional avoidance towards a particular stimulus (Perin et al., 2015). Within the context of the COVID-19 pandemic, high levels of fear might give rise to numerous mental health issues (Shigemura et al., 2020). A study carried out by Ahorsu et al. (2020) found that the fear of the COVID-19 pandemic is correlated negatively with mental health among the general Iranian population. The results revealed that with the high infection and mortality rate, people will start to fear and worry about contracting the virus. An extreme level of fear can inhibit individuals from thinking rationally, leading to poorer mental health. Similar findings were obtained by Zolotov et al. (2020) such that fear of COVID-19 was positively associated with mental health problems among Israeli university students. The study explained that fear is conceptualised as an unpleasant feeling while an extreme level of fear can destroy one's mental health and physical health. Conversely, Hetkamp et al. (2020) obtained differing results in comparison with the above-mentioned studies. The researchers concluded that no correlations could be drawn between fear of COVID-19 and mental health (anxiety). Fear of COVID-19 fluctuates despite the increasing number of reported cases and death, suggesting that people are experiencing more functional fear in this situation.

The present study suggested another predictor – resilience. This term is defined as a dynamic process and the ability to "bounce back" quickly and adapt easily despite the surrounding pressures and crises (Bonanno, 2004; Smith et al., 2008). With reference to past studies, resilience was a significant predictor of subjective and psychological well-being (Yildirim, 2019) as well as mental health concerns (Rudwan & Alhashimia, 2018; Burns et al., 2011). In the context of the COVID-19 pandemic, some researchers found that individuals with higher resilience were associated with lower levels of worries, depression, and anxiety (Barzilay et al., 2020; Ran et al., 2020). This is because individuals who have high psychological resilience exhibit qualities such as calmness, agility, perseverance, and a sense of control in times of adversities as well as possess the ability to recover quickly after a setback. Additionally, Killgore et al. (2020) found that higher resilience led to lower psychological distress. This is because the participants with higher resilience indicated that they have more time to indulge in self-activities (e.g., more days spent under the sun and exercise) which promoted resilience and lower psychological distress than their counterparts.

To date, inadequate shreds of evidence were reported on the predictive effect of perceived risk, fear of COVID-19, and resilience on emerging adults' mental health in a multi-cultural nation - Malaysia. Thus, this study serves to fill the literature gaps by unveiling the antecedents of mental health during the COVID-19 pandemic. Practically, the present study is also significant to raise awareness on how the mental health of Malaysian emerging adults is affected by the COVID-19 pandemic. Hence, the hypotheses of this study are as follows:

H_1: Perceived risk negatively predicts mental health among Malaysian emerging adults during COVID-19 pandemic.

H_2: Fear of COVID-19 negatively predicts mental health among Malaysian emerging adults during COVID-19 pandemic.

H_3: Resilience positively predicts mental health among Malaysian emerging adults during COVID-19 pandemic.

Method

The study was conducted by distributing the online survey questionnaire using Qualtrics via social media (e.g., Instagram, WhatsApp, and Messenger) to potential participants (Loh et al., 2021a). The survey began with an electronic informed consent, followed by demographic details, perceived risk scale, fear of COVID-19 scale, resilience scale, and mental health scale. The data collection was from 9 January 2020 to 6 February 2020. The sampling approach that was applied in the current study was the non-probability sampling method. Non-probability sampling is defined as a process that does not involve random selection; instead, it relies on the subjective judgement of the researchers (Sharma, 2017). This study chose a non-probability sampling approach because the social distancing and movement control order (MCO) limited researchers to adopt only the online data collection method. Thus, the fundamental criteria required for adopting probability sampling were not feasible during the pandemic period. Under the non-probability sampling approach, this study specifically used the purposive sampling method. This method of sampling involved the selection of the sample based on the research team's decision on the inclusion criteria (Etikan & Bala, 2017). More

specifically, the inclusion criteria comprised of (1) emerging adults, (2) in Malaysia who are (3) either studying, looking for a job, or working. The selection of this sampling method has also been supported by numerous empirical studies with emerging adults as the target population (Aw et al., 2018; Gupta et al., 2020; Ingram et al., 2020; Ting et al., 2020). Overall, a total of 182 respondents were recruited.

The COVID-19 Perceived Risk Scale (CPRS) is a multidimensional scale developed by Yıldırım and Güler (2020a) which assesses COVID-19-related personal risk. It was adapted from the eight-item SARS Risk Perception Scale (Brug et al., 2004) and consists of eight items that measure the two dimensions including cognitive and emotional dimensions. A five-point Likert scale was used in which (1=negligible) to (5=very large) and the total scoring ranges from 8 to 40. A higher total summed-up score indicates a greater COVID-19-related personal risk. The scale suggests adequate internal reliability with a Cronbach's alpha ranging from 0.70 to 0.88 for the emotional dimension (Yıldırım & Güler, 2020a). In the present study, the scale was found to have high reliability with the Cronbach's alpha value at 0.79.

The Fear of COVID-19 Scale (FCV-19S) is a unidimensional scale constructed by Ahorsu et al. (2020) to measure the severity of the fear of COVID-19. This scale consists of seven items rated on a 5-point Likert scale (1=strongly disagree, 5=strongly agree). The final score of FCV-19S is calculated by summing up the score for each item. The total score ranges from 7 to 35, with higher scores indicating greater fear of COVID-19. The scale demonstrated good internal consistency with a Cronbach's alpha of 0.82 (Ahorsu et al., 2020). Besides, the scale reported a Cronbach's alpha value of 0.89 in the present study which is good.

The 10-item Connor-Davidson Resilience Scale (CD-RISC-10-item) was developed by Campbell-Sill and Stein (2007) which measures self-perceived resilience level. It is unidimensional and contains 10 items. The CD-RISC-10-item is assessed with a five-point Likert scale which ranges from 0 (not true at all) to 4 (true nearly all the time). The total score of the scale ranges from 0 to 40, with higher scores indicating higher levels of resilience. The internal reliability of the scale is adequate with a Cronbach's alpha of 0.85 (Campbell-Sill & Stein, 2007). In the present study, the scale was found to have high reliability as the Cronbach's alpha value was at 0.86.

The Mental Health Continuum Short Form (MHC-SF) was developed by Keyes (2005). It is a multidimensional scale derived from the Mental Health Continuum Long Form (MHC-LF) and consists of 14 items that measure the three subscales including emotional well-being, social well-being, and psychological well-being. MHC-SF uses a six-point Likert scale which ranges from 0 (never) to 5 (everyday). The scoring of MHC-SF ranges from 0 to 70 with a higher score indicating higher levels of well-being. The scoring is categorised into three subgroups which include flourishing (presence of mental health), moderate (moderately mentally healthy), and languishing (absence of mental health). For the emotional well-being scale, the respondents have to answer 4 (almost every day) or 5 (every day) at least once, whereas, for social and psychological well-being, the respondents have to answer 4 (almost every day) or 5 (every day) at least six times to be diagnosed as flourishing. To be diagnosed as languishing, the respondents have to answer 0 (never) or 1 (once or twice a month) at least once on the emotional well-being scale and at least six times on the social and psychological well-being scale. Respondents who are not categorised under flourishing and languishing fall under the moderate subgroup. The three subscales show a good internal consistency: emotional well-being (α = .83), social well-being (α = .74), psychological well-being (α = .83), and the total scale (α = .89; Lamers et al., 2011). In the present study, the scale reported a highly reliable Cronbach's alpha value, which is .93.

In the present study, data cleaning was done by checking data entry errors, straight-lining data, blank responses, and missing values. No missing values, straight-lining data, and blank response was found in this study. Furthermore, multiple linear regression (MLR) was used to assess the predictive effect of perceived risk, fear of COVID-19, and resilience on mental health. All the assumptions of MLR were studied and tested, which included multivariate outliers, variables type, multicollinearity, independence of residuals, homoscedasticity, normality of residuals, and linearity of residuals. The entire data analysis was carried out by using IBM SPSS Statistics computer software version 23.

Results

From the 182 respondents, the average age was calculated to be 23 years old. This is aligned with the age of emerging adults which is between 19 to 29 years old. Besides, most of the participants were female (58.2%) and university students (64.30%). Furthermore, slightly more than half of the participants reported low (below mean) perceived risk of COVID-19 (54.90%, n = 100) and low (below mean) resilience (51.60%, n = 94). Half of the participants reported low (below mean) fear of COVID-19 (50.00%, n = 91) and low (below mean) mental health (50.00%, n = 91; refer to Table 1).

Table 1: Frequency Distribution of Participants' Demographic Variables and Main Variables

Age	***n***	**%**	***M*** **23.04**	***SD*** **2.42**
Sex				
Male	76	41.80		
Female	106	58.20		
Race				
Malay	2	1.10		
Chinese	165	90.70		
Indians	6	3.30		
Others	9	4.90		
Employment Status				
Employed	56	30.80		
Unemployed	9	4.90		
Students	117	64.30		
Perceived risk			25.62	5.14
Low (<25.62)	100	54.90		
High (≥25.62)	82	45.10		
Fear of COVID-19			19.12	5.87
Low (<19.12)	91	50.00		
High (≥19.12)	91	50.00		
Resilience			24.82	5.32
Low (<24.82)	94	51.60		
High (≥24.82)	88	48.80		
Mental health			37.45	12.47
Low (<37.45)	91	50.00		
High (≥37.45)	91	50.00		

Besides, a normality test was conducted to determine whether the data is normally distributed. The normality indicators included a histogram, quantile-quantile plot (Q-Q plot), skewness, kurtosis, and Kolmogorov Smirnov (K-S) test. From the results, no data was removed after examining the normality test, indicating the data collected in this study is normality distributed. Moreover, univariate and multivariate outliers were performed. Two cases were detected as univariate outliers, they were not removed as it (1) is normal to have around 5% of outliers (more than two standard deviations), (2) does not affect the normality of distribution (Aguinis et al., 2013), and (3) does not damage the results of the present study (Hecht, 1991). With that said, there were no multivariate outliers detected as well.

Multiple regression analysis was used to test the predictive effects of perceived risk, fear of COVID-19, and resilience on mental health. The model was statistically significant as $F(3, 113.242) = 15.921$, $p < .001$ and accounted for 19.8% of the variance (refer to Table 2). According to Cohen (1988), the value of R^2 greater than .02, .13, and .26 indicates small, medium, and large effect size respectively. Therefore, the model showed a medium effect as the value .198 is greater than .13. Moreover, it was found that resilience significantly and positively predicted mental health ($\beta = .459$, $p < .001$). However, perceived risk ($\beta = .047$, $p = .536$) and fear of COVID-19 ($\beta = -.015$, $p = .844$) were not found as significant predictors of mental health among emerging adults. The results revealed that resilience was the only significant predictor of mental health (refer to Table 3). Therefore, it can be concluded that hypotheses 1 and 2 were not supported while hypothesis 3 was supported.

Table 2: Result of Regression Model

	df	***F***	***p***	**Adj. R^2**
Regression	3	15.921	.000	.198
Residual	178			
Total	181			

Note. Dependent Variable = Mental health. Predictors = Perceived risk, fear of COVID-19, and resilience.

Table 3: Result of Regression Coefficient

	Std. β	*t*	*p*
Perceived risk	.047	.620	.536
Fear of COVID-19	-.015	-.197	.844
Resilience	.459	6.889	.000

Note. Dependent Variable = Mental health.

The first hypothesis of the current study was not supported, indicating that perceived risk does not predict mental health negatively and significantly among Malaysian emerging adults during the COVID-19 pandemic. As such, inconsistent results were found between the current study and previous studies. Previous studies claimed that perceived risk negatively predicts mental health (Mækelæ et al., 2020; Yildirim & Güler, 2020b; Zhong et al., 2020). Nevertheless, the current finding is consistent with Germani et al. (2020) which found a non-significant predictive effect of perceived risk on psychological maladjustment (part of mental health) among emerging adults. This can be explained by the Protection-Motivation Theory which posited that people tend to participate in protective behaviour as a coping mechanism when the perceived severity or risk is high (Rogers, 1975). In other words, when people are experiencing high perceived risk, they would take preventive behaviours. In the case of COVID, these would include wearing a mask, social distancing, and frequent handwashing. These preventive behaviours serve as a coping mechanism for people to combat against the pandemic and protect their mental health by reducing anxiety and worry, which can be triggered due to high perceived risk. This explanation is supported by Mukhtar (2020) as well as Faasse and Newby (2020) which described that perceived risk on preventive behaviours is positively associated with stronger mental health.

Next, such a non-significant result can also be explained by the influence of cultural factors. People in collectivistic cultures have stronger social connectedness and a sense of belongingness. Social connectedness and a sense of belonging serve as protective factors. They provide a sense of security and increase one′s self-efficacy, which they can feel protected by the community. This finding is consistent with Kim et al. (2016) who carried out their study during the Ebola epidemic and found that collectivistic individuals have higher self-efficacy and work together to protect one another when the perceived risk increases in times of crisis. Malaysia is a collectivistic culture (Ndubisi et al., 2011). Although Malaysian emerging adults might experience higher perceived risk, the social connectedness and sense of belongingness act as a buffer against the perceived risk of infection.

In addition, the inconsistent result obtained in this current study can be due to demographic variables such as age and level of education. Most of the participants (64.3%) in this study are university students, and the mean age of the participants is 23.04 years. Past studies demonstrated that age and level of education are correlated with preventive behaviours, in which young people (Kuper-Smith et al., 2020; Wise et al., 2020) with a higher level of education tend to be more involved in preventive behaviour (Yildirim et al., 2020b). Hence, higher involvement in preventive behaviour leads to better mental health (Vally, 2020). The significant past finding with perceived risk negatively predicts mental health can be due to most of these studies were focusing only on adults (e.g., Kim et al., 2020a; Mækelæ et al., 2020; Malesza & Kaczmarek, 2020; Yildirim & Güiler, 2020b), explaining the inconsistent result of the present study.

The second hypothesis is not supported; specifically, fear of COVID-19 does not predict mental health negatively and significantly. Past studies reported a negative and significant correlation between fear of COVID-19 and mental health (Ahorsu et al., 2020; Fitzpatrick et al., 2020; Zolotov et al., 2020). According to Lang (1968), fear consists of three components: cognitive, behavioural, and physiological. The fear of COVID-19 scale used in the present study consists of two components of fear which are cognitive and physiological. The cognitive components are shown in items 1, 2, 4, and 5. For example, items such as "I am most afraid of COVID-19" require participants to self-evaluate their level of fear which involves cognition. Physiological components are shown in items 3, 6, and 7. An example of an item is "My hands become clammy when..." The data collected in the current study showed a higher average mean score in the emotional component (M=3.19, SD=1.13) and lower in physiological component (M=2.13, SD=1.02), indicating a high possibility that people are not experiencing fear but think that they are in fear. People think that they are in fear as the pandemic outbreak has lasted for nearly a year. In the past year, people were initially experiencing fear due to uncertainties about the virus itself and their future. However, the level of fear decreases over time due to the improvement in COVID-19 related knowledge and understanding (Bakioğlu et al., 2020).

Besides, the non-significant result obtained in this study can be explained by functional "fear". According to Ahorsu et al. (2020), the developer of FCV-19S, fear can inhibit individuals to think clearly and react

rationally in times of pandemic. Nevertheless, Harper et al. (2020) found that most of the items in FCV-19S measure anxiety instead of fear. Fear and anxiety are different responses as the former inhibits one to take action while the latter prepares one to take action. Anxiety refers to a preparatory response in times of ambiguity (McNaughton & Corr, 2008, p44). In this study, a high level of COVID-19 fear (should be a high level of anxiety) motivates one to participate in health-protective behaviours. Consistently, Yildirim et al. (2020b) reported a positive correlation between fear of COVID-19 and protective behaviours. According to Vally (2020), more protective behaviour leads to better mental health. Therefore, when people are experiencing a high level of "fear" (anxiety), they are encouraged to take health-protective measures, which tend to help improve their mental health.

Another possible reason for the non-significant result can be due to the separation of fear of COVID-19 and fear of death. Malaysia has a lower mortality rate of COVID-19 (0.37%) in comparison to the worldwide mortality rate, which is 3%, and a high recovery rate (95.4%; updated in March 2021). The low mortality rate and high recovery rate further increase one's optimistic bias. Optimistic bias refers to the perception that one's risk is lesser than the other person's risk (Schwarzer, 1994). In the context of the pandemic, even though a person has a high perceived risk of infection and high fear of COVID-19, the low mortality rate and high recovery rate strengthen one's thinking that they would not easily die. Besides, Azlan et al. (2020) found a high level of trust in the government in handling the pandemic (90%), low level of uncertainty among Malaysians (14%) is associated with poorer knowledge about the virus. All these provide a sense of security to the people that they will not die due to the virus as they have less knowledge about the COVID-19. In addition, the non-significant result can be explained by the high level of trust in the healthcare system, indicating that people are afraid of the virus, but not scared of death (Ipsos, 2020). Thus, explaining why a high level of fear has little influence on one's mental health. Furthermore, the significant predictive effect obtained by past researchers can be due to the data collection timing, where at the beginning of the COVID-19 outbreak, people had poorer mental health due to environmental factors such as high uncertainty instead of a single factor (e.g., fear). Their mental health improves over time as the level of uncertainty reduces (Azlan et al., 2020).

The result of the present study supported the third hypothesis in which resilience was found to be significantly and positively associated with mental health. This finding suggests that individuals with higher resilience tend to have better mental health than those with lower resilience. Therefore, this finding is aligned with a number of past studies (Barzilay et al., 2020; Blackmon et al., 2017; Gao et al., 2017; Morales-Vives et al., 2020; Osofsky et al., 2011; Poudel-Tandukar et al., 2019; Rudwan & Alhashimia, 2018). Particularly, Osimo et al. (2021) found individuals with higher resilience responded well emotionally to the pandemic and suggested that resilience can protect an individual from unpleasant emotional distress as a result of the pandemic. In other words, resilience plays the role of an adaptive defence mechanism against the progression towards mental issues and helps bounce back or maintain good mental health during times of adversities (Davydov et al., 2010; Fergus & Zimmerman, 2005).

In the present study, the majority of the emerging adults might perceive themselves as someone capable, strong, optimistic, and able to handle life's challenges that go their way. These attributes contribute to one's resilience and reflect high self-esteem, which instinctively leads to good mental health (Keliat et al., 2019). This finding is further supported by Benetti et al. (2006) and Bonanno (2004), suggesting that resilience, through positive emotions, improves self-esteem and effective resistance towards unpleasant stressors, leading to successful adaptability and better mental health. Another possible explanation could be related to the collectivistic culture of Malaysia (Tan et al., 2017), where social support is a norm that promotes resilience (Southwick et al., 2016). Thus, shaping the way an individual evaluates an event determines a series of coping strategies to deal with stressful incidents and mental sufferings (Fletcher & Sarkar, 2013; Poudel-Tandukar et al., 2019). For instance, many Malaysians dealt with the pandemic, especially when the implementation of lockdown was announced, by travelling back to their hometown to be with their families as a coping mechanism (Radhi, 2020). This action suggests that family symbolises refuge for many when faced with adversities (Crocetti & Meeus, 2014). A similar finding was found among Italian emerging adults (Germani et al., 2020) who are collectivistic which is akin to the Malaysian culture (Tan et al., 2017).

The present study can contribute to the current research field by suggesting that perceived risk has little or no influence on mental health among Malaysians, which is inconsistent with many of the past findings. Hence, practitioners and policymakers are encouraged to allocate more attention to other possible factors which could affect the mental health of emerging adults. Besides, the inconsistent findings can draw more scholarly attention for further confirmation of the present findings, which serves as a new source to the literature field. This study's findings can assist in the development and enhancement of the intervention programme or therapeutic approaches. In particular, the focus of these initiatives should move away from perceived risk and fear of COVID-19 as it is less applicable in the Malaysian context. With that said, evidence was found for the significant role of resilience on mental health. This result serves as a pointer for healthcare

professionals to focus on resilience-based interventions to improve the public's mental health. For instance, Heath et al. (2020) developed a resilience-based intervention programme for frontline healthcare workers by increasing their resiliency to prevent burnout or mental health deterioration. The intervention programme summarises the available strategies to improve individuals' resilience, which includes self-care (e.g., exercise, social support, and sleep hygiene), emotional health (e.g., mindfulness practice), and meaningful work (e.g., small group sharing and reflective counselling).

Like any other study, the present research has its own set of limitations that need to be addressed. Firstly, the focused population of the present study included only emerging adults. As such, the current study's findings cannot be generalised to all populations across other life stages. This is because individuals from different backgrounds of life experience display different approaches to negative situations (Charles & Carstensen, 2008). Thus, the generalisability of the finding is constrained to only emerging adults. Secondly, the present study was conducted in a Malaysian setting which limits the generalisability across countries due to the differences in culture (Tew et al., 2021). This can be observed through the lens of the 6-D model of national culture, proposed by a social psychologist called Geert Hofstede. The model is made up of six dimensions of culture, namely, power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence. For example, when compared to Malaysia with the United States, Malaysia showed greater power distance, collectivism, and a long-term orientation, while the United States showed higher individualism, masculinity, uncertainty avoidance, and indulgence (Hofstede Insights, n.d.). The differences in culture can also be seen when compared to other countries.

Next, this study employed a cross-sectional research design that records the responses among emerging adults at one point in time (Loh et al., 2021b). However, the predictors (perceived risk, resilience, and fear of COVID-19) and dependent variable (mental health) in the present study may be influenced by the instability of COVID-19 cases when the data was collected. For instance, the absence of the COVID-19 vaccine in the year 2020 and the presence of vaccine in the year 2021, may influence the participants' responses. Lastly, the results from the present study showed that only 19.8% of the predictors accounted for the variances of mental health. The potential explanation of slightly low variances accounted for is because two out of three predictors (i.e., perceived risk and fear of COVID-19) were found to be non-significant. This indicates that there are still other factors that could influence Malaysian emerging adults' mental health during the COVID-19 pandemic.

There are a few recommendations for future studies to address the limitations of the present study. Firstly, the constricted generalisability of findings to only emerging adults can be addressed by conducting another study involving a balanced ratio of individuals from different stages of life. This allows the sample of future studies to be more wholesome, which increases the generalisability of results. Secondly, the issue of limited generalisability across countries due to differences in culture can be tackled by conducting cross-country research (Lau et al., 2021). This involves the collection of data from various countries to take into account each country's unique characteristics (e.g., culture) which may influence the response of participants. Therefore, conducting cross-country research may widen the scope of the finding's generalisability. Thirdly, to address the limitation of cross-sectional research design where it shows the opinion of respondents from one specific point of time (Mann, 2003), the present study suggests that future studies adopt a longitudinal approach. This is because a longitudinal study allows researchers to collect data repeatedly over a period of time to make a comparison of data and follow changes (e.g., number of COVID-19 cases). In addition, a longitudinal study also allows researchers to determine the sequence of events, eliminate recall bias, and increase flexibility with cohort effect (Caruana et al., 2015). Finally, it is undeniable that the COVID-19 pandemic has affected millions of lives worldwide and plays a significant role in influencing one's mental health through various ways (e.g., loss of job, deteriorating health, and quarantine). Since the COVID-19 outbreak occurred, there is limited literature on the COVID-19 pandemic, specifically among emerging adults in Malaysia. As such, future studies should consider other contributing factors to mental health as variables presented in the current study yielded limited findings. Other potential predictors include social support, hope, self-esteem, positivity, and perceived knowledge.

Conclusion

In summary, resilience was found to be a significant antecedent of mental health among Malaysian emerging adults during the COVID-19 pandemic. However, perceived risk and fear of COVID-19 had no significant effect on mental health. More specifically, the findings of this study indicated that higher levels of resilience resulted in better mental health. In other words, it suggests that resilience plays a protective role in determining mental health during the pandemic. Thus, this study provided a more precise understanding on the predictor for better mental health. This would undeniably be valuable when developing intervention programs to build better mental health among emerging adults in the future. Lastly, the present study can

serve as a reference for future researchers examining perceived risk, fear of COVID-19, resilience, and mental health in a collectivistic and multi-cultural society

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