Social Support and Coping Strategies as Mediators in The Relationship Between Feeling of Loneliness and Mental Health

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Abstract
Covid-19 pandemic has a direct and indirect impact on human life. Therefore, the purpose of the present study is to investigate the relationship between feelings of loneliness and mental health among single adults during the Covid-19 pandemic in addition to examining social support and coping strategies as mediators, as well as gender as moderator. A total of 399 respondents (aged 25 to 39) become respondents through convenience sampling. Spearman Correlation analysis, Multiple Regression analysis and Hayes' PROCESS Macro were used to see the relationship and influence between loneliness, mental health, social support, coping strategy and gender. Four instruments such as UCLA Loneliness Scale, General Health Questionnaire, The Multidimensional Scale of Perceived Social Support, and Brief Coping Orientation to Problems Experiences Inventory were used in this study. The results of the study through Spearman correlation analysis found that there is a significant relationship between loneliness with mental health, social support, and coping strategies. Multiple regression tests confirmed that there was an influence between social support and mental health and there was an influence between coping strategies and mental health. The results for the PROCESS macro analysis found that social support considered as a mediator between loneliness and mental health. However, coping strategies is not a mediator in the relationship between loneliness and mental health. Yet, gender is not a moderator to loneliness and mental health.
Keywords: Social Support, Coping Strategies, Loneliness, Mental Health, Covid-19

Introduction
Coronavirus diseases, also known as Covid-19 is an infection disease that was first detected in Wuhan, China in late December 2019. Within a few months, it became a global pandemic which strike Malaysia and around the world that caused a huge implication especially on mental health. The outbreak in Malaysia is alarming as Malaysia begins to record higher cases and thus the Malaysian government has taken an action by implementing a Movement Control Order (MCO 1.0) nationwide in March 2020. In addition, lockdowns and 'stay-at-home' orders has led to physical and social distancing as well as most individuals reported

experiencing long-term social isolation. According to Bu et al (2020), the social isolation that exists during the pandemic has caused individuals to lose their social relations with the people around them. Therefore, this phenomenon has also contributed to increase the rate of loneliness (Groarke et al., 2020).

Loneliness has been described as a sad feeling that an individual experiences when they do not receive adequate social relations from the people around them (Peplau & Perlman, 1982; Matthews et al., 2017). The feeling of loneliness that is felt in a short period of time may still be acceptable to any individual and they are able to control it and keep themselves busy with daily activities. However, if the social isolation occurs over a long period of time, individuals will do the same activities over and over again until some of them might not have any ideas of doing any activity plus the effects of the lockdowns such as financial problems, anxiety, fear, bored and restless will not only can cause loneliness but it also contribute to depression and if the individual is not able to control it, then it will lead to more serious mental health problems (Holmes et al., 2020; Brooks et al., 2020; Okruszek et al., 2020).

According to Berwick et al (1991) in van Tilburg et al (2020), mental health problems refer to anxiety, depression, sadness, and not feeling happy. Besides, mental health is also considered as a sensitive condition for a large-scale traumatic event such as disaster or outbreak in an individual's life that can cause disruption to their social and economic development (Goldmann & Galea, 2014; Ettman et al., 2020). Furthermore, Malaysia is one of the countries that experienced mental health problems due to the Covid-19 pandemic (Rathakrishnan, 2020). As a results of the Covid-19 outbreaks, nearly half a million Malaysians, especially individuals in the adult category (2.3%), were found to have symptoms of stress or depression (NHMS, 2019). The Covid-19 pandemic that cause loneliness and leads to such mental health problems will also affect in a lack of social support received by a person (Wang et al., 2018).

Apart from this, many previous studies have shown that individuals with high levels of social support will have less symptoms of depression and individuals with less social support are more likely to have depression symptoms, bipolar disorder, and extreme anxiety while loneliness is associated with depression and anxiety (Brummett et al., 2000; Daniels, 2000; Backs-Dermott et al., 2010; Van Beljouw et al., 2010; Holvast et al., 2015; Koenders et al., 2015; Wang et al., 2018). It is argued that social support may be one of the aspects that is closely linked to feeling of loneliness and mental health. This is because, having an adequate social support is not only important to reduce the symptoms of mental health problems but it also helps people to adapt to the new situations and norms during this pandemic.

Besides that, loneliness is considered to have a strong prediction of depression compared to coping strategies that have two types of coping efforts such as emotional-focused coping and problem-focused coping as well as loneliness also plays a role as mediators of the positive or negative quality of relationships and depression (Ara et al., 2017). A problem-focused coping means an individual solves a problem or takes action to change his or her existing state while emotional-focused coping is defined as the strategy used to change the situation reducing emotional stress and stressful situations in an individual's life (Folkman & Lazarus, 1980; Huang et al., 2020). Therefore, higher levels of social support are associated with the use of a coping strategy as well as predicting lower symptoms of loneliness and depression where

those with high levels of social support are often associated with more positive coping strategies and this related can predict lower depression symptoms (Chen et al., 2019). Hence, this study was not only to examine the relationship between feeling of loneliness and mental health, but also to examine thoroughly the influence of social support and coping strategies as mediators in the relationship between feeling of loneliness and mental health among single adults during the outbreaks.

Literature Review
Loneliness and Mental Health
Feeling of loneliness is seen as having an association with an individual's mental health. This is related with the study conducted by Lee et al (2020) on 564 adults (aged between 22 to 29) during the outbreaks and it shows that the feeling of loneliness has increased from January to April/May especially among women. Same goes with respondents who received high social support in January. However, individuals with low social support reported high levels of loneliness from January to April/May. Depression and loneliness that increased over the years has led to the greater level of depression while anxiety has shown a similar level during the pandemic. Research by Hoffart et al (2020) also found that loneliness had a relationship with depression and anxiety. The study examined the potential risks and factors of loneliness during social distancing and to study the relationship between loneliness and psychopathological symptoms among single adults. Hoffart et al (2020) proved that single adults who have been diagnosed with psychiatric illness are more likely to feel lonely. In addition, rumours of the outbreaks and the anxiety that hit individuals are also the biggest contributors to the feeling of loneliness. Based on the literature above, researchers found that loneliness have a relationship with individual's mental health because study conducted by Haffort et al (2020) proved that individuals who have been diagnosed with mental health problems tend to feel lonely. However, loneliness that affect mental health also can cause by the presence of other factors such as the culture and the way of individual's life due to Covid-19 as in the study that has been done by (Lee et al., 2020).

Loneliness and Social Support
Social support is a phenomenon in which it involves social interactions between individuals with family, friends, and significant others (Marmot & Wilkinson, 2008; Harandi et al., 2017). This has been proved by the findings of Sadoughi and Hesampour (2017) who have shown that all three dimensions of family, friends and significant people was the best predictor in predicting loneliness among university students. Overall, it shows that students with high levels of social support can reduce their feeling of loneliness. Meanwhile, research by Eskimez et al (2019) on 70 elderly people found that social support among women is higher than men while their loneliness was at a moderate level. In terms of social support, respondents received high social support from significant others while social support from the family was the lowest. However, this study found that the relationship between social support and loneliness was weak. Past studies have shown that loneliness is associated with social support, yet differences in terms of respondent demographics as in the study of Eskimez et al (2019) who conducted studies on the elderly have contributed to different findings even though the studies used the same instruments such as Multidimensional Scale of Perceived Social Support (MSPSS) and UCLA Loneliness Scale to measure loneliness and social support.

Social Support and Mental Health
Social support is a factor that can reduce psychological distress when an individual is facing a stressful event and it also provides a physical and psychological advantage for the individuals (Brummett et al., 2005). Study carried out by Qi et al (2020) on 7,202 adolescents during the outbreaks found that Covid-19 pandemic was associated with a higher prevalence of depression and anxiety symptoms. The result shows that 24.6% respondents reported high levels of social support, 70% respondents reported moderate levels of social support, and 5.4% reported low levels of social support. Thus, this study also found that low and moderate levels of social support were associated with higher levels of depression and anxiety.

Studies related to social support and mental health were not only conducted by Qi et al (2020), even Alsubaie et al (2019) also conducted a study on 461 students and found that the social support received from family and friends was a major predictor of depressive symptoms. Quality of life from a psychological aspect was a predictor of social support from the family and friends. Meanwhile, quality of life in terms of social relationships was a predictor of social support especially from significant people and friends. Therefore, this study found that the source of social support is a very important resource in protecting the mental health among university students.
The levels and the source of social support received by an individual is different from others. Most of the previous study state that social support plays an important factor to mental health. This is because, if an individual received an adequate social support, then they can control their mental health status from getting worse. Qi et al (2020) proved that individuals with low social support have the potential to get higher levels of anxiety and depression.

Loneliness and Coping Strategies
Coping strategy is a constantly changing cognitive and behavioural process in which the process is developed to address, control, or reduce certain external or internal demands that occur and are considered to exceed individual resources and abilities (Lazarus & Folkman, 1984; Folkman & Moscowitz, 2004; de la Fuente et al., 2017). This is related with the study conducted by Golemis et al (2021), to investigate the social responsibility, loneliness, adherence to guidelines and coping strategies as well as potential factors of loneliness and social. Respondents showed a relatively high sense of social responsibility and had a moderate level of loneliness. However, young women reported higher levels of loneliness than men. This is because, women create a new social media account and spend more than 5 hours a day to avoid loneliness.

Next, Vasileiou et al (2019) conduct a study to examine coping strategies used by adults to manage their loneliness while studying at university. The results found that university students used various types of coping strategies to overcome their loneliness and sadness. The most frequent strategies that they used were choosing the right residence and engaging in some activities to avoid loneliness, seeking a social support, self-reliance, and problem-solving actions. Thus, students showed the evidence of specific coping strategies where the strategies used to overcome loneliness such as environmental factors, the availability and suitability of social resources as well as individual resources and needs. Based on the results for each literature highlight in the aspects of loneliness and coping strategies, most respondents were found to have specific coping strategies to reduce the feelings of loneliness experienced by them. Researchers also found that the method that is often used to obtain

the data, is through interviews where previous researchers can identify various types of coping strategies used by respondents to reduce loneliness.

Coping Strategies and Mental Health
The used of coping strategies among individual also can help to reduce the stress (Yin et al., 2018; Martínez et al., 2020). Patias et al (2021) conducted a study to examine the relationship between coping strategies that have been used by undergraduate students with depression, anxiety, and stress during the social isolation. The results of this study found that there was a relationship between coping strategies and mental health symptoms where the strategies used were different according to the symptoms, gender, occupational status, and religion practiced. In short, the most coping that frequently used among the respondents were escape, self-control and positive re-evaluation while for the less used coping strategies were acceptance of responsibility and confrontation.

A study by Wang et al (2020) on 1,599 individuals, found that individuals who were unmarried, had a history of travel to Wuhan, individuals who received pandemic effects and who had negative coping strategies were associated with having high psychological distress in the early stages of the outbreaks. 34.2% individual has negative coping strategies while 65.8% has positive coping strategies where individuals with negative coping strategies were more likely to have psychological distress during this pandemic. Coping strategies is one of the methods that individuals need to reduce stress which can lead to symptoms of mental health problems. Based on the literature review that has been done by researchers, there are various ways that can be used as coping strategies to reduce stress, depression, or anxiety.

Methodology
Participants
This quantitative and cross-sectional study was conducted among single adults. A total of 399 respondents which consisted of 78.7% women and 21.3% men were recruited to an online questionnaire-based study via convenience sampling and advertising on social media (i.e., Facebook, Twitter, Instagram, and WhatsApp). Besides the first inclusion criterion was to select participants who were 25 to 39 years, another inclusion criterion was to include only participants who were Malaysian nationality and have the monthly income below RM 4,849 (B40 group in Malaysia). Of 420 individuals who accessed the survey, only 399 respondents met the criteria in this study, while 21 of them were removed because they didn't meet the criteria required in this study. More detailed demographic information of participant is presented in Table 1.

Procedure
This study was conducted through an online survey. The survey was available in two languages (Malay and English) and participants were approached using online platform. Links to the survey were circulated on social media such as Facebook, Instagram, Twitter, and WhatsApp to reach the target population of single adults. The instruction was given to participants and the data collection began in Jun 2021 until July 2021. The data in this study were analysed using Statistical Package of Social Sciences (SPSS).

Measures

A questionnaire comprised four sections in which one section was to identify socio-demographic of the participants while another three sections were to evaluate the feeling of loneliness, mental health, social support, and coping strategies.

Socio-demographic questions. The survey included questions concerning gender, age, race, educational level, employment sector, and monthly income to obtain a profile of the respondents' socio-demographic features.

UCLA Loneliness Scale (ULS-8). To access the feeling of loneliness among respondents, the UCLA Loneliness Scale (ULS-8; Hays & DiMatteo, 1987) was used. The 8-item of self-report scale was adapted from the previously validated UCLA Loneliness Scale (ULS; Russell, Peplau & Ferguson 1978) which consisted of 20-item. Eight items measure subjective feelings of loneliness. However, the researchers finally decided to cut one of the items which is item 7 *(I am unhappy being so withdrawn)* because the Cronbach's alpha coefficient for item 7 was 0.64 which makes the overall internal consistency for this scale was 0.43. Participants were required to rate each item on a scale of 1 *(never)* to 4 *(often)*. The total score ranges from 8 to 32 with higher score indicating higher level of loneliness. Examples of items include *I lack companionship* and *There is no one I can turn to*. In the present sample, this scale has demonstrated good internal consistency reliability with Cronbach's α of 0.79.

General Health Questionnaire (GHQ-12). General health questionnaire (GHQ-12; Goldberg & Williams 1988) is a self-assessment screening tool that measures general psychological distress. This questionnaire consists of 12 items, and the response options range from 0 *(less than usual)* to 3 *(much more than usual)*. The total scores ranged from 0 to 36, with higher scores indicative of greater psychological distress. A total score higher than 15 points indicates a tendency toward psychological problems. In our study, the Cronbach's alpha coefficient of the GHQ-12 was .76.

Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS Zimmet et al (1988) is a 12-item scale that assess social support from three distinct sources: family (items 3, 4, 8, and 11), friends (items 6, 7, 9, and 12), and significant others (items 1, 2, 5, and 10). Participants were asked to indicate their agreement with items on seven-point Likert scale, ranging from 1 *(very strongly disagree)* to 7 *(very strongly agree)*. The highest score on all sections is related to greater social support which score range from 12-35 indicate low social support, score range from 36-60 indicate moderate social support, and score range from 61-84 indicate high social support. In this present study, the overall internal consistency for this scale was 0.94. The MSPSS has four items for each sub-scales, high internal consistency was found for all three subscales: family (0.74), friends (0.73), and significant others (0.91).

Brief Coping to Problem Experiences Inventory (Brief COPE). Brief COPE Carver et al (1997) is an instrument that contain 28 items and used to assess several different behaviours and thoughts that an individual may have to response to a particular situation. The participants were asked to rate on a 4-point Likert scale with 1 *(I haven't been doing this at all)* to 4 *(I've been doing this a lot)*. A high score of Brief COPE indicates that the individual having a specific coping strategy with the score for each dimension is 2-8. In this present study, the Cronbach's alpha for Brief COPE was 0.87.

Data Analysis

Descriptive statistics, Spearman's correlation analysis, multiple regression analysis, and Hayes' PROCESS macro were used in this study. Descriptive statistics were used to examine the frequency, percentage, mean, and standard deviation for demographic variables such as gender, age, ethnicity, education level, employment sector, and monthly income. Besides that, the descriptive analysis was used to determine the levels of social support, coping strategies, feeling of loneliness, and mental health. Next, the Spearman's correlation analysis was used to test our hypothesis and examine the relationship between the variables. Besides, the multiple regression analysis was conducted to examine the influence of the variables. Lastly, the Hayes' PROCESS macro analysis was used to examine the mediator and moderator in this present study. The analysis in this study was done using Statistical Package for Social Sciences version 23.

Results

Demographic Information

Table 1

Distribution of Demographic Profile

Category		Frequency (N)	Percentage (%)
Gender	Male	85	21.3
	Female	314	78.7
Age	25	93	23.3
	26	121	30.3
	27	64	16.0
	28	32	8.0
	29	21	5.3
	30	12	3.0
	31	17	4.3
	32	10	2.5
	33	11	2.8
	34	5	1.3
	35	4	1.0
	36	3	0.8
	37	3	0.8
	38	1	0.3
	39	2	0.5
Ethnic Group	Malay	378	94.7
	Chinese	2	0.5
	Indian	0	0
	Others	19	4.8
Education Level	SPM	10	2.5
	STPM	7	1.8
	Diploma	67	16.8
	Degree	271	67.9
	Master	43	10.8
	PhD	1	0.3
Employment Sector	Government	78	19.5
	Non-government	241	60.4
	Self-employed	80	20.1
Monthly Income	B1 - Below RM2,500	271	67.9

B2 - RM2,501 – RM3,169	67	16.8
B3 - RM3,170 – RM3,969	31	7.8
B4 - RM3,970 – RM4,849	30	7.5

Descriptive Analysis

Summary of the 399 respondents who completed the demographics section is presented in Table 1 above. The majority respondents (78.7%) identified as female, while 21.3% were represented by male. Most of the respondents were in their 20's, which exactly most of them were 26 (30.3%), 25 (23.3%), 27 (16%), 28 (8%), and 29 (5.3%) followed by those aged 30-39 with 30 (3%), 31 (4.3%), 32 (2.5%), 33 (2.8%), 34 (1.3%), 35 (1%), 36 and 37 both having the same percentage (0.8%), 38 (0.3%), and 39 years old with 0.5%. 378 respondents were Malay (94.7%), 19 from other ethnicities (4.8%), only 2 respondents were Chinese (0.5%), and none of the respondents were Indian. The respondents were highly educated, with 95.8% having a college degree or higher level of education. Meanwhile, majority of the respondents 241 (60.4%) working in non-government sector, 78 (19.5%) working in government sector, and the rest 80 (20.1%) were self-employed. In addition, monthly income shows that 271 (67.9%) respondents have income below RM2,500, 67 (16.8%) respondents reported having an income between RM2,501-RM3,169, 31 of them (7.8%) have income between RM3,170-RM3,969, and another 30 (7.5%) respondents having an income in the range between RM3,970-RM4,849.

This study also used a descriptive analysis for all three variables. 399 respondents completed the feeling of loneliness section. For the feeling of loneliness, respondents showed their level of loneliness was in the normal to moderate level (mean = 18.69, SD = 4.74). The level of psychological distress among respondents during the outbreaks was at moderate level (mean = 19.23, SD = 7.53). However, respondents received a low level of social support from family (mean = 19.37, SD = 6.51), friends (mean = 19.69, SD = 5.79), and significant other (mean = 19.12, SD = 7.51). Even though they received a low level of social support, but the respondents in this study have coping strategies to cope with the problems using PFC and EFC. Most of the dimensions that respondents used as their coping strategies in domain PFC were religion (mean = 6.88, SD = 1.34), acceptance (mean = 6.64, SD = 1.18), planning (mean = 6.35, SD = 1.35), positive reframing (mean = 6.60, SD = 1.62), active coping (mean = 6.35, SD = 1.29), instrumental support (mean = 5.80, SD = 1.66), emotional support (mean = 5.63, SD = 1.66), and humour (mean = 4.50, SD = 1.81). Dimensions for denial (mean = 3.95, SD = 1.67) and substance abuse (mean = 2.26, SD = 0.96) in the domain of EFC were less used by respondents as their coping strategies and the other dimension were used by the respondents as their coping strategies such as self-distraction (mean = 6.68, SD = 1.36), behavioural disengagement (mean = 4.24, SD = 1.73), venting (mean = 5.79, SD = 1.45), and self-blame (mean = 5.70, SD = 1.84).

Correlation Analysis

Hypothesis 1: *There is a significant relationship between loneliness and mental health.*
Hypothesis 2: *There is a significant relationship between loneliness and social support.*
Hypothesis 3: *There is a significant relationship between loneliness and coping strategies.*

Results of Spearman's correlation shown in Table 2. Result shows that there is a significant moderate relationship between loneliness and mental health (r = .60, p < .01). It also showed

that the lower the level of loneliness, the lower the level of psychological distress among single adults during the outbreaks.

Table 2
Spearman Correlation between the variables

Variables	Loneliness	
	r	**p**
Mental health		
Psychological distress	0.60	.00
Social support		
Family	0.57**	.00
Friends	0.51**	.00
Significant other	0.47**	.00
Coping strategies		
Problem-focused coping (PFC)		
Religion	0.27**	.00
Acceptance	0.19**	.00
Planning	0.27**	.00
Positive reframing	0.37**	.00
Active coping	0.29**	.00
Instrumental support	0.38**	.00
Emotional support	0.44**	.00
Humour	0.00	.94
Emotion-focused coping (EFC)		
Self-distraction	0.01	.90
Denial	-0.24**	.00
Substance abuse	-0.13*	.01
Behavioural disengagement	-0.44**	.00
Venting	0.02	.70
Self-blame	-0.38**	.00

Note: **$p < .01$ *$p < .05$

The results for the second Spearman analysis were significant moderate relationship between loneliness and social support from family (r = .57, p < .01), friends (r = .51, p < .01), and significant other (r = .47, p < .01). Thus, it showed that if the loneliness is low among respondents, then they had sufficient social support during the pandemic.

The results of this analysis also found that the relationship between loneliness with PFC through the religious dimension (r = .27, p < .01), planning dimension (r = .27, p < .01), active coping dimension (r = .29, p < .01), instrumental support (r = .38, p < .01), and positive reframing (r = .37, p < .01) had a significant low relationship. Loneliness and emotional support dimension have a significant moderate relationship (r = .44, p < .01) while loneliness and acceptance dimension (r = .19, p < .01) had a significant but almost no relationship and loneliness and humour dimension (r = .00, p = .94) have no significant relationship. In addition,

loneliness with EFC through the behavioural disengagement dimension (r = -.44, p < .01) has a significant moderate relationship, while denial dimension (r = -.24, p < .01) and self-blame dimension (r = -.38, p < .01) had significant low relationship with loneliness. Substance abuse dimension (r = -.13, p < .05) has a significant but almost no relationship with loneliness while self-distraction dimension (r = .01, p = .90) and venting dimension (r = .02, p = .70) had no significant relationship with loneliness. Thus, hypotheses 1, 2, and 3 were accepted even though there were three dimension that was insignificant.

Multiple Regression Analysis
Hypothesis 4: *There is a significant relationship between loneliness and mental health.*
Hypothesis 5: *There is a significant relationship between social support and mental health.*
Hypothesis 6: *There is a significant relationship between coping strategies and mental health.*

The next analysis focused on which variables was the strongest predictor to psychological distress. By using the multiple regression analysis, it can be seen in Table 3 that loneliness has a positive coefficient which significantly predict psychological distress (β = 0.61, t (397) = 15.26, p < .05). Social support from family (β = 0.45, t (397) = 10.06, p < .05), friends (β = 0.35, t (397) = 7.42, p < .05), and significant other (β = 0.33, t (397) = 6.86, p < .05) also have a positive coefficient which significantly predict the psychological distress.

In addition, PFC with dimension religion (β = 0.30, t (397) = 6.22, p < .05), acceptance (β = 0.19, t (397) = 3.86, p < .05), planning (β = 0.33, t (397) = 6.89, p < .05), positive reframing (β = 0.42, t (397) = 9.11, p < .05), active coping (β = 0.39, t (397) = 8.44, p < .05), instrumental support (β = 0.34, t (397) = 7.28, p < .05), and emotional support (β = 0.31, t (397) = 6.56, p < .05) have a positive coefficient which significantly predict the psychological distress. However, EFC was found to have a significant negative coefficient and does predict psychological distress for all dimensions which were denial (β = -0.25, t (397) = -5.05, p < .05), substance abuse (β = -0.13, t (397) = -2.61, p < .05), behavioural disengagement (β = -0.55, t (397) = -13.19, p < .05), and self-blame (β = -0.49, t (397) = -11.24, p < .05). According to beta coefficient from Table 3, loneliness (β = 0.61, p < .05), social support from family (β = 0.45, p < .05), and PFC with positive reframing (β = 0.42, p < .05) have the strongest predictive value on psychological distress. Hence, hypotheses 4, 5, and 6 were accepted.

Table 3
Regression predicting the contribution of the variables towards mental health

Variables	Mental health (Psychological distress)		
	B	β	Sig.
Loneliness	0.97	0.61	.00
Social support			
Family	0.52	0.45	.00
Friends	0.45	0.35	.00
Significant other	0.33	0.33	.00
Coping strategies			
Problem-focused coping (PFC)			
Religion	1.68	0.30	.00
Acceptance	1.21	0.19	.00
Planning	1.82	0.33	.00
Positive reframing	2.46	0.42	.00
Active coping	2.27	0.39	.00
Instrumental support	1.56	0.34	.00
Emotional support	1.42	0.31	.00
Emotion-focused coping (EFC)			
Denial	-1.11	-0.25	.00
Substance abuse	-1.02	-0.13	.01
Behavioural disengagement	-2.40	-0.55	.00
Self-blame	-2.01	-0.49	.00

Note: $p < .05$

Mediator Analysis

Hypothesis 7: *Social support is a mediator in the relationship between loneliness and mental health.*

Hypothesis 8: *Coping strategies is a mediator in the relationship between loneliness and mental health.*

In hypothesis 7 and 8, social support (SS) and coping strategies (CS) are assumed to mediate the relationship between loneliness (LO) and mental health (MH). To examine this hypothesis, a simple mediation process was conducted using the PROCESS macro for SPSS. As shown in Table 4, we found that loneliness has a positive significant predictor of social support (b = 2.132, s.e. = 0.123, $p < .001$). This coefficient reflects the direct effect of loneliness on social support.
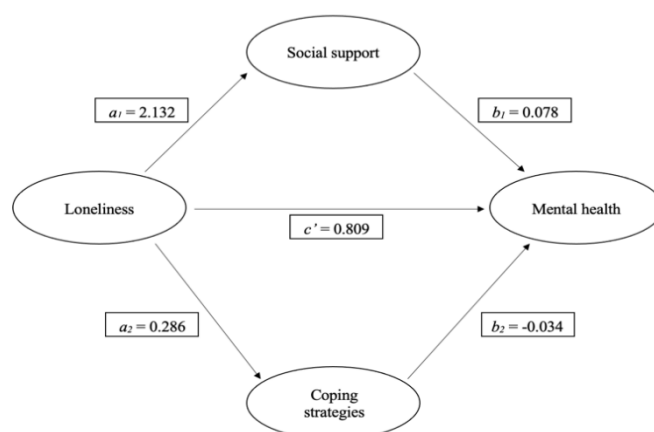
Fig. 1. Social support and coping strategies as mediator

Loneliness is also having a positive significant predictor of coping strategies (b = 0.286, s.e. = 0.098, p < .001). In addition, we also found that loneliness has a positive significant predictor of mental health (b = 0.809, s.e. = 0.084, p < .001), as is social support (b = 0.078, s.e. = 0.027, p < .001). However, coping strategies is not a significant predictor of mental health (b = -0.034, s.e. = 0.033, p = .309), not supporting hypothesis 8. Hence, this result indicate that social support was a partial mediation (Baron & Kenny, 1986) in the relationship between loneliness and mental health, supporting H7.

Table 4
Mediator analysis for social support and coping strategies

Antecedent		Consequent										
		M_1 (SS)				M_2 (CS)				Y (MH)		
		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p
X (LO)	a_1	2.132	0.123	<.001	a_2	0.286	0.098	<.001	c'	0.809	0.084	<.001
M_1 (SS)		-	-	-		-	-	-	b_1	0.078	0.027	<.001
M_2 (CS)		-	-	-		-	-	-	b_2	-0.034	0.033	.309
Constant	i_{M_1}	18.348	2.367	<.001	i_{M_2}	72.037	1.899	<.001	i_Y	2.199	2.607	.399
		$R^2 = 0.432$				$R^2 = 0.021$				$R^3 = 0.383$		

Discussions

Discussions related to the results of this study were conducted to strengthen the findings of this study that have been obtained by researchers. This study was conducted to examine the relationship between feelings of loneliness and mental health among single adults during the Covid-19 pandemic in addition to examining social support and coping strategies as mediators while gender as moderator in this study.

Hypothesis 1. Pertaining the relationship between loneliness with mental health, social support, and coping strategies, was supported. The results showed that loneliness has a significant relationship with mental health. This is in line with previous research that indicates loneliness has led to a greater increase in depression (Lee et al., 2020). Loneliness can occur with a various factor. This coupled with the current condition which is Covid-19 pandemic, the presence of rumours of a Covid-19 outbreak contributes to the feelings of loneliness and affecting an individual's mental health (Hoffart et al., 2020).

Hypothesis 2. In terms of social support, single adults who's having low level of loneliness usually having an adequate social support. Furthermore, informal social support can be obtained from family, friends, neighbours, or social group (Savage & Bailey 2004; George et al., 2020). Results in this study shows that having an adequate social support especially from family can help to reduce the loneliness. This result is similar with the finding in past studies that found high level of social support can reduce the feeling of loneliness (Sadoughi & Hesampour, 2017; Adamczyk, 2016).

Hypothesis 3. Even if and individual has high social support to reduce the feeling of loneliness, coping strategies are also needed to help an individual overcome those feelings. In this present study, loneliness is seen having a significant relationship with coping strategies (PFC and EFC) specially for emotional support in PFC. A study by Vasileiou et al (2019) proved that individuals used various types of coping strategies to overcome their feeling of loneliness and sadness. This is because, people have their own coping strategies to cope with problems i.e., create a new social media account, having a sports training, share their thoughts and feelings, put a kind set to adapt with the new norms, and work can distract them to feel lonely (Golemis et al., 2021; Morlett et al., 2021; Amzat & Jayawardena, 2016).

Hypothesis 4. Furthermore, the findings revealed that loneliness can predict mental health. Results showed that loneliness has a positive coefficient which significantly predict mental health. Loneliness is seen to be related with mental health and it increased since Covid-19 pandemic (Horigian et al., 2021). Ausin et al (2017) also found that loneliness influenced mental health where it is related with socio-demographic factors. There are so many factors that influenced loneliness with mental health and demographic factors is one of them i.e., living alone, marital status, frequency of economic problems occurs, living in a rural area that less socialize and interaction with others, and having a mental disorder (Ausin et al., 2017; Domènech-Abella et al., 2017).

Hypothesis 5. Based on the results in this study, we found that social support also can predict mental health. Finding from El-Zoghby et al (2020) showed that social support either from family, friends, or significant other play an important role on individual's mental health. Moreover, previous study also found a similar findings where social support protects an individual's mental health and predict depression among the respondents (Alsubaie et al., 2019).

Hypothesis 6. Coping strategies and mental health also having a prediction in this present study. It is because, people will have their own coping strategies to cope with the problems. This would make them overcome their problems and to make sure that their mental health will not be affected as in the previous study where their respondents have their own coping strategies (Balaron, 2020). Strategies used among individuals is different based on their gender, employee status, and religion (Patias et al., 2021).

Hypothesis 7. Next, we also found that social support is a mediator of the relationship between loneliness and mental health. Social support is partial mediation between loneliness and mental health. Social support during the pandemic is much needed by the individuals (Xu et al., 2020). Thus, George et al (2020) also proved that having an adequate social support reduced the feeling of loneliness and mental health. Indeed, a study by Harandi et al (2017)

are in line with the results of this study which social support was placed as mediator between loneliness and mental health.

Hypothesis 8. However, coping strategies is not a mediator in this study. Coping strategies is not a significant predictor of loneliness and mental health. This may be caused by respondents in this present study have their own ways to cope with the problems that might be different from the dimension that have been used in this study which is using a Brief COPE questionnaire. Each previous studies also showed a different coping strategy that have been used by the individuals to overcome their problems such as motivate their self, being independent, and find a support from others (Morlett et al., 2021; Vasileiou et al., 2019).

Conclusion

In Malaysia, studies related to loneliness and mental health is a well-known study but less focused during the pandemic. Therefore, researchers want to conduct this study and examine at both aspects specifically to single adults during the outbreaks where everyone knows that the outbreak gives a huge impact on everyone's life from various angles, especially economic and social. As such, researchers conducted this study to fill up the research gap. As we know, mental health becomes even more important during this pandemic as individuals will tend to feel anxious, scared and depressed with this new norm life where the social activities are limited and people can't meet their family, friends, or spouses as before, individuals who are fired, and the pressure of working from home. With the presence of various factors and unhealthy environmental conditions, it can contribute to loneliness that affects the psychological distress in individual's life. In conclusion, this study proves that feelings of loneliness, social support, and coping strategies plays an important role in an individual's mental health where if the individual has low feelings of loneliness due to the received of high social support and they have their own coping strategies to cope with problems, their mental health will not be affected.

Limitations and Future Studies

This study has several limitations. To complete the entire study, researchers faced several challenges and limitations throughout the conduct of this study. Among the limitations of the study that have been identified by researchers in completing this study, is to start with the search for previous studies that are appropriate to the context of Malaysia, especially during the Covid-19 pandemic. This is because, studies in Malaysia conducted during the outbreaks are more focused on mental health conditions with other factors and less associated with loneliness, especially among single adults. Future research could be focused on this kind of studies and can be conducted on more individuals who do not remarry after divorce or the death of their partner and are linked to their emotional development. Thus, it will be able to provide a more comprehensive picture related to various aspects in the development of their lives and can increase the number of studies related to loneliness and mental health. Furthermore, this study also has limitations in terms of the demographic profile of the respondents. The demographic profile is very important to the researcher so that we can identify the additional factor to the feeling of loneliness such as where the respondent live, either in urban or rural areas, and closed-ended questions such as with whom the respondent live, does the respondent have mental illness or whether the respondent has other chronic diseases. Preferably in a future study to have a variety of demographic profile so that future researchers can identify the other internal or external factors that may lead to loneliness and

can cause their mental health conditions to be affected especially during the Covid-19 pandemic.

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