

## **The Role of Social Support in the Incidence of Depression during the Covid-19 Quarantine Moderated by the Neuroticism Personality Type**

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**Abstract:** The outbreak and spread of the coronavirus (COVID-19) has become a global public health problem. Young adults are facing significant life changes and challenges during the COVID-19 pandemic due to changes in the world of work, the process of finding work, pursuing higher education, and taking on new social responsibilities. Overall, perceived social support is a significant predictor of life satisfaction and negative affect. Among the five personality traits, extraversion and neuroticism were shown to have a consistent relationship with depressive symptoms. This study aims to examine the relationship between social support and depressive symptoms moderated by neurotic personality in people who are undergoing COVID-19 quarantine. This research is a quantitative research with moderation analysis method. Data collection used an online questionnaire, where the questionnaires used were CES-D, Neuroticism BFI, and MSPSS. The subjects of this study were 62 subjects who were undergoing quarantine for COVID-19. The results of this study are that neurotic personality can affect the relationship between social support and depressive symptoms in people who are undergoing COVID-19 quarantine.

**Keywords:** depression, grit, neuroticism

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### **1. Introduction**

The outbreak and spread of the coronavirus (here in after referred to as “COVID-19”) has become a global public health problem [1] [2] [3]. To control transmission of COVID-19, many countries have implemented strict quarantine policies [4][5]. Although quarantine is aimed at limiting the exposure and spread of infectious diseases, there are concerns related to quarantine policies, because such isolation or quarantine can cause psychological stress, including depressive symptoms [6] [7] [8] [9].

Young adults are facing significant life changes and challenges during the COVID-19 pandemic due to various changes in the world of work, the process of finding work, pursuing higher education, and taking on new social responsibilities [10]. For young adults who are quarantined at home with their parents or relatives, the stress caused by sharp changes in their environment (as they switch from a sudden return of personal independence to limited mobility and limited socialization options), results in a degree of vulnerability. to higher psychological pressure [11]. Previous research has shown that depressive symptoms during young adulthood can reduce a person's ability to handle daily life tasks, which in turn leads to negative consequences later in life, such as low achievement, job difficulties, and social dysfunction [12].

Due to substantial scientific uncertainty about the nature of the disease and transmission of this new virus, the possible risk of infection may trigger widespread public concern which then translates into psychological distress [13]. In addition, the relationship between infection risk and depressive symptoms may further increase during quarantine, as disruption to social support networks, significant economic hardship, fear of physical safety, and experiences of illness and death among family and friends can bring additional stress leading to negative psychological outcomes [4][6][9].

Several studies have concluded the effect of the COVID-19 pandemic on psychological outcomes in adults in quarantine; for example, Ammerman et al. (2020) have revealed that experiences related to COVID-19 are positively associated with suicidal thoughts and behavior in adults. In addition, Nguyen et al. (2020) have reported that adults with suspected symptoms of COVID-19 show a higher likelihood of depression and lower health-related quality of life than those without symptoms. In quarantined people, studies have documented a high prevalence of mental health problems, including depression and anxiety [14] [15].

Social support is the perception of being cared for by others and the perception of having a reliable network to contact when needed, in daily situations or during certain crises [16]. This can be obtained from three sources: family, friends, and other important people. Social support is also referred to as the frequency of support actions provided by others, that is why, it can be understood as a subjective feeling of being supported

[17]. In addition, the type of support can be in the form of emotional, instrumental, evaluative and informative support [16]

Overall, perceived social support is a significant predictor of life satisfaction and negative affect [18][19]. In particular, emotional support has important benefits in mental health, so much research has focused on the relationship between depression and perceived social support [17][18][19]. Perceived social support and social bonds are positively related to mental and physical health [16]. Research shows a positive relationship between perceived social support and psychological well-being, which allows it to be seen as a valuable protective mechanism that can enhance psychological well-being by maintaining positive emotional feelings and reducing stress [16].

Perceived social support is defined as an individual's subjective feelings about and evaluation of the support offered by other individuals in the external environment [20]. Existing literature has shown that social support is critical for adaptive psychological functioning in young adults. Although research has shown that social support is an important protective factor for depressive symptoms [21][22], it is unclear under which conditions social support works for this purpose. In particular, the buffering effect model shows that the positive impact of social support in reducing psychological distress only occurs when under stress [23][24]. Indeed, when individuals face obstacles or experience negative emotions in their daily lives, they are more likely to seek the support of others they perceive as helpful [25]. Dumitrache et al. (2017) found that social support had an effect on health status and life satisfaction in adults. More precisely, when it comes to being negative about health status, social support can significantly increase adult life satisfaction. These findings suggest that when a person's risk of infection with COVID-19 is high, social support can help that person avoid generating negative emotions, such as depressive symptoms.

Attention has long been given to exploring the role of personality in psychopathology. The Five Factor Personality Model (FFM), known as the "Big Five Personality Traits" model, is the most well-known model of personality. The five personality traits of FFM are neuroticism, extraversion, openness, agreeableness, and conscientiousness. Neuroticism refers to susceptibility to emotional instability and self-consciousness. Openness is characterized by cognitive sensitivity to creativity and aesthetics. Agreeableness and extraversion focus on interpersonal relationships: Extraversion reflects tendencies to be gregarious, enthusiastic, assertive, and playful, whereas agreeableness refers to tendencies to be warm, kind, gentle, confident, and reliable. Conscientiousness is understood as a tendency toward responsibility and competence. These five personal characteristics are seen as the most basic dimensions of personality [26].

Among the five personality traits, extraversion and neuroticism were shown to have a consistent relationship with depressive symptoms. For example, in one study, neurotic personality had greater rates of depression among a group of older adults. Likewise, Elliot et al. (2019) showed that a high score on neuroticism was associated with a high score on depressive symptoms in a community sample of older adults. Nuri et al. (2019) also provides evidence that high neuroticism is a significant risk factor for depressive manifestations. Conversely, research shows that extraversion is a buffer against depression. Extraversion not only predicts lower depression scores, but also plays an important role in reducing the influence of neuroticism on depressive symptoms [27]. Extraversion and neuroticism are protective factors and risk factors for depression, respectively, but the effects of neuroticism can go beyond extraversion [26].

As a personality trait that is relatively stable in the long term, neuroticism is most closely associated with negative emotions. People with higher levels of neuroticism usually have stress reactions and negative emotions when experiencing a traumatic event. Several studies have confirmed that neuroticism is closely related to symptoms of depression and anxiety. For example, Hankin et al. argues that neuroticism can effectively predict depressive symptoms in adults and minors. The neuroticism score is directly proportional to the severity of individual depressive symptoms [26]. Similar findings were obtained by Steca et al., who confirmed that the severity of depressive symptoms correlated with individual neurotic behavior scores in clinical studies of depressive symptoms in groups of adults [26]. Neuroticism also plays an important role in the development of depression. In particular, experts have found that neuroticism is not only significantly associated with depressive symptoms but also has a significant predictive effect on depressive symptoms. In short, existing research clearly shows that neuroticism is a risk factor for experiencing depressive symptoms [26].

This study focuses on examining the relationship between social support and depressive symptoms moderated by neuroticism personality types during the COVID-19 quarantine. The formulation of the problem in this study is whether the neuroticism personality type affects the relationship between social support and depressive symptoms. The purpose of this study was to determine whether neuroticism personality type can affect the relationship between social support and depressive symptoms. The benefit of this research is that the general public, especially those who are undergoing COVID-19 quarantine, know that the relationship between social support and depressive symptoms can be influenced by neuroticism personality types, so that the incidence of depression during the COVID-19 pandemic can be reduced to a lower level.

## 2. Methods

### 2.1 Research design

This research is a quantitative research, in which researchers are able to analyze variables scientifically, as well as make predictions and analyzes. The research process was carried out by giving questionnaires online. This study uses a moderation analysis approach. The moderational analysis approach in this study aims to determine the extent to which the influence of social support on depressive symptoms is moderated by the neuroticism personality type.

### 2.2 Research subject

The subjects of this study were 62 people who were undergoing quarantine due to the COVID-19 pandemic. Taking research subjects using purposive sampling technique. This technique is used to determine the research sample through the existence of certain considerations and criteria. The goal is to obtain more representative data. The criteria for research subjects include; (1) Research subjects are undergoing COVID-19 independent quarantine (2) Research subjects are able and able to use smartphones and fill out questionnaires online.

### 2.3 Research Variables and Instruments

Depressive symptoms were measured by the Center for Epidemiological Studies-Depression (CES-D) scale [28], which is considered one of the most widely used assessment tools for depressive symptoms in adults [29]. Participants were asked to rate this 20-item scale, measuring the frequency with which a symptom occurs, ranging from 0 (rarely) to 3 (very often). One example item is, "I am bothered by things that normally don't bother me." All of these items are summed up to produce a total score, with higher scores indicating symptoms of major depression.

Social support is measured by 12 items from the Multidimensional Scale of Perceived Social Support (MSPSS) [20]. The MSPSS assesses three sources of support: family, friends, and a significant other. One example of an item is, "I have a friend with whom I can share my ups and downs (in the friends domain)." Participants were asked to rate each item from 1 (strongly disagree) to 7 (strongly agree). These items are averaged to obtain an overall score, with a higher score indicating higher social support. Previous studies have shown good internal consistency of MSPSS in a group of university students in China [30][31].

The neuroticism personality score was measured using the neuroticism aspect of the Big Five Inventory scale (BFI) with a total of 10 items. An example item is "I notice myself getting tense easily". Measurement using a Likert scale consists of 5 answer choices, namely, 1 = Strongly Disagree, 2 = Disagree, 3 = Doubtful, 4 = Agree, and 5 = Strongly Agree. All of these items are added together to get an overall score, with a higher score indicating a higher level of neuroticism.

### 2.4 Data analysis

Researchers will use regression analysis which is analyzed using SPSS with the PROCESS version 4.0 method released by Hayes. PROCESS is a special method of multiple linear regression for research where there is interaction of two or more independent variables (Hayes, 2013).

## 3. Results

### 3.1 Description of Research Variables

The normality test uses the Kolmogorov-Smirnov Z method using SPSS 26. The results of the normality test in this study are as follows. The Kolmogorov-Smirnov Z results on the social support variable were  $.26 > .05$ , then the value on the depression variable was  $.19 > .05$ . The Kolmogorov-Smirnov Z value on the neuroticism personality variable is  $.183 > .05$ . These results show all normality test values above  $.05$ , so it can be concluded that the data of all variables in this study are normally distributed. The subjects in this study were 62 people who were undergoing quarantine for COVID-19. Based on Table 2, it can be seen that the subjects in this study were 62 people with a social support variable value (Mean = 57.32; SD = 18.64), depression score variable (Mean = 40.88; SD = 16.07) and on neuroticism personality variable (Mean = 23.40; SD = 6.51).

Table 1 : Mean, Standard Deviation and Relations between Variables

Variabel	N	Mean	Std. Deviation	Social support	Depression	Neuroticism
<b>Social support</b>	62	57,32	18,64	1		
<b>Depression</b>	62	40,88	16,07	-.699	1	
<b>Neuroticism</b>	62	23,40	6,51	-.335	.651	1
<b>Valid N (listwise)</b>	62					

### 3.2 Hypothesis test

Based on the acquisition of research data, the results of the research hypothesis test are as follows.

Table 2 : Effects between variable

Variabel	$\beta$	t	Sig.
Social Support	-.023	-.097	.023
Neuroticism	2.20	4.26	.000
Social Support x Neuroticism	.020	2.18	.002

Hypothesis 1 states that there is a relationship between social support and depressive symptoms. The results showed that social support had a negative effect on depressive symptoms ( $\beta = -0.023$ ,  $p = 0.023 < 0.05$ ), so H1 was accepted. These results indicate a regressive correlation between social support and depressive symptoms. So if social support increases, depressive symptoms will decrease and vice versa if social support decreases, depressive symptoms increase.

Hypothesis 2 states that neurotic personality is able to moderate social support relationships on depressive symptoms. The results showed that neurotic personality had a positive and significant effect on the relationship between social support and depressive symptoms ( $\beta = 0.02$ ,  $p = 0.002$ ), so that H2 was accepted. So it can be concluded that neuroticism personality can moderate the relationship between social support and depressive symptoms.

An overview of the relationship between social support and depressive symptoms moderated by the neuroticism personality type can be explained in the figure below:

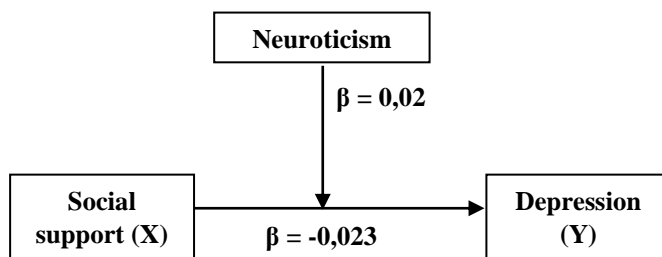


Figure 1. The results of the social support analysis test for depression is moderated by the Neuroticism Personality Type

### 4. Discussion

This research was conducted to find out how the relationship between social support and depressive symptoms is moderated by neuroticism in people who are undergoing quarantine for COVID-19. The results of this study indicate that there is a relationship between social support and depressive symptoms and neuroticism personality is able to strengthen the relationship between social support and depressive symptoms in people who are undergoing COVID-19 quarantine.

The first hypothesis of this study states that there is a relationship between social support and depressive symptoms in people who are undergoing COVID-19 quarantine, so that it can be seen that the higher the social support, the lower the symptoms of depression, and vice versa, the lower the social support, the higher the symptoms of depression. The results of this study are in line with the research of Liu et al. (2021) which states that the higher the social support, the lower the symptoms of depression, and vice versa, the lower the social support, the higher the symptoms of depression in people undergoing COVID-19 quarantine.

In this COVID-19 pandemic, the relationship between infection risk and depressive symptoms may be further enhanced during quarantine, as disruption to social support networks, significant economic hardship, fear for physical safety, and experiences of illness and death among family and friends can lead to additional stress leading to negative psychological outcomes (Brooks et al., 2020; Liu et al., 2020; Ransing et al., 2020). Several studies have concluded the effect of the COVID-19 pandemic on psychological outcomes in adults in quarantine; for example, Ammerman et al. (2020) have revealed that experiences related to COVID-19 are positively associated with suicidal thoughts and behavior in adults.

The second hypothesis in this study states that neuroticism personality can strengthen social support relationships with depressive symptoms in people undergoing COVID-19 quarantine. The results of this study indicate that neurotic personality can strengthen the relationship between social support and depressive symptoms in people undergoing COVID-19 quarantine. This is supported by research conducted by Elliot (2018) which says that neuroticism has a significant influence on a person's level of depression.

The impact of personality on affective states such as depression can be attributed to the influence of dynamic, stable and overarching traits on temperament and character (Olawa, 2020). Among the five personality traits, extraversion and neuroticism were shown to have a consistent relationship with depressive symptoms. For example, in one study, neurotic personality had greater rates of depression among a group of older adults. Likewise, Elliot et al. (2019) showed that a high score on neuroticism was associated with a high score on depressive symptoms in a community sample of older adults. Nuri et al. (2019) also provides evidence that high neuroticism is a significant risk factor for depressive manifestations.

## 5. Conclusion

The results of this study concluded that social support can influence depressive symptoms in people who are undergoing COVID-19 quarantine, while neuroticism personality types can increase the effect of social support on depressive symptoms. Increasing social support causes depressive symptoms to decrease and conversely if social support decreases, depressive symptoms will increase or be inversely proportional between the two and the neuroticism personality type is able to moderate the relationship between social support and depressive symptoms in people who are undergoing COVID-19 quarantine.

The implications of this study have shown that social support and neurotic personality play an important role in the emergence of depressive symptoms in people who are undergoing COVID-19 quarantine. Social support increases, the level of depression decreases and vice versa if social support decreases, the level of depression increases. But having a neuroticism personality is more prone to causing depressive symptoms. The results of this study provide information to people who are undergoing COVID-19 quarantine that social support has an influence on the level of depression, and neuroticism personality can affect the relationship between social support and depressive symptoms in people who are undergoing COVID-19 quarantine.

The advice that researchers can give to future researchers is that future researchers can increase the number of research subjects so that the results obtained will be more accurate. In addition, future researchers are also expected to be able to examine whether other personality types also affect or moderate the relationship between social support and depressive symptoms in people who are undergoing COVID-19 quarantine.

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