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Correlation Between Psychological Resilience and Health Perception in Terms of Some Variables in Pandemic Outbreaks: The Covid-19 Case

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Abstract

Background: In the face of this threatening epidemic, the health behaviors of people gain great importance in terms of both minimizing the prevalence and reducing possible life losses. perception of health affects health behavior. Psychological resilience is key in combating a challenging situation that threatens both physical and psychological health. Objective: This study was aimed to examine the correlation between psychological resilience and health perception in terms of some variables in the case of the COVID-19 pandemic. Methods: This cross-sectional study was carried out using quantitative and general screening models. In data collection, an Individual Information Form, the Brief Resilience Scale (BRS) and the Perception of Health Scale (PHS) were used. Results: The participants had a mean age of 33.24 ± 10.95, with 35.7% males. Mean scores were 52.68 ± 6.80 for PHS and 20.11 ± 4.24 for BRS. We found that the health perceptions of the participants increased in parallel with their psychological resilience ($p<0.05$). Conclusion: The participants were found to have moderate levels of health perception and psychological resilience. Their measures against the epidemic and certain socio-demographic characteristics led to differences in their psychological resilience and health perceptions. Knowing the psychological resilience and health perceptions of individuals can improve the quality of treatment and care.

CORRELATION BETWEEN PSYCHOLOGICAL RESILIENCE AND HEALTH PERCEPTION IN TERMS OF SOME VARIABLES IN PANDEMIC OUTBREAKS: THE COVID-19 CASE

ABSTRACT

Background: In the face of this threatening epidemic, the health behaviors of people gain great importance in terms of both minimizing the prevalence and reducing possible life losses. perception of health affects health behavior. Psychological resilience is key in combating a challenging situation that threatens both physical and psychological health.

Objective: This study was aimed to examine the correlation between psychological resilience and health perception in terms of some variables in the case of the COVID-19 pandemic.

Methods: This cross-sectional study was carried out using quantitative and general screening models. In data collection, an Individual Information Form, the Brief Resilience Scale (BRS) and the Perception of Health Scale (PHS) were used.

Results: The participants had a mean age of 33.24 ± 10.95, with 35.7% males. Mean scores were 52.68 ± 6.80 for PHS and 20.11 ± 4.24 for BRS. We found that the health perceptions of the participants increased in parallel with their psychological resilience ($p<0.05$).

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Conclusion: The participants were found to have moderate levels of health perception and psychological resilience. Their measures against the epidemic and certain socio-demographic characteristics led to differences in their psychological resilience and health perceptions. Knowing the psychological resilience and health perceptions of individuals can improve the quality of treatment and care.

Keywords: Pandemic, COVID-19, psychological resilience, health perception

What's already known about this topic?

- COVID-19 pandemic actively affected most countries in the world for more than 1 year so far.
- The infection continues to adversely influence the world in numerous aspects from economic to psychological.
- Each individual's reactions to negative situations, stressful life events, or strategies to deal with these situations are different.

What does this article add?

The current study showed that the participants to have a moderate level of psychological resilience in COVID-19 pandemic and psychological resilience increased in parallel with the health perceptions of individuals

1| INTRODUCTION

Coronaviruses (CoV) were identified in the 1960s, and different pandemics originating from CoV have occurred in the past. The first pandemic threat of a novel and deadly coronavirus that emerged in late 2002, called SARS-CoV (Severe Acut Respiratuar Sendrom-CoV), with higher pathogenicity and severe respiratory infection outcomes originated in China and quickly spread around the world. This virus affected 8098 people, causing 774 deaths. It had a fatality rate of 9.7 %. The SARS-CoV originated in bats and spread through the intermediate hosts, civet cats. Nine years later, 2012 saw the emergene of another deadly coronavirus, the MERS-CoV (Middle East Respiratory Syndrome-CoV), which caused 2494 reported cases and 858 deaths from 27 different countries and has a very high case fatality rate of 34.4%. MERS-CoV began in Saudi Arabia and was thought to have spread from camels.[1-3]

The current infection is identified as COVID-19 (SARS-CoV-2 Infection), starting with the first suspicious cases in China (Hubei-Wuhan) in mid-November 2019. Having actively affected most countries in the world for more than 1 year so far, the infection continues to adversely influence the world in numerous aspects from economic to psychological [3]. According to data from the WHO on January 9th, 2021, the number of people infected with SARS-CoV-2 has reached approximately 90 million, with more than 1899 440 people losing their lives to the virus.[4] Turkey currently has 2307 581 infected cases.[5]

Coronaviruses are very small in size, so they can spread among humans by hanging in the air and through droplets while sneezing-coughing. Another important mode of spreading the virus is people who touch surfaces or objects that patients have contacted and then touching their face/eyes with their hands or contacting other people by shaking hands. A contact range of 1.8-2 meters is generally enough for the virus to be transmitted from person to person. One person infected with COVID-19 can infect 2 - 3.11 people around them. Therefore, it is key to strictly implement measures of isolation. [6]

In the face of this threatening epidemic, the health behaviors of people gain great importance in terms of both minimizing the prevalence and spread of the epidemic and reducing possible life losses.[7] Health behaviors may differ based on a wide variety of factors, including health perception and socio-demographic characteristics. [8] Health perception can be defined as the overall picture of a person's feelings, expectations, concerns and prejudices regarding their own health. [9] It is a strong determinant that includes health status and outcomes (premature death, psychiatric disease, use of health care, etc.), treatment planning and patient follow-up. [10] Individual differences in subjective health perception also have a crucial role in psychological well-being later in life, as individual attitudes, motivations and beliefs affect perceptions regarding disease and disability. [11]

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Each individual's reactions to negative situations, stressful life events, or strategies to deal with these situations are different. While it may take a long time for some people to get back to their normal life by getting rid of the effects of these negative situations or stressful events, some people may get out of the negative mood in a short time. People's ability to recover and return to their normal lives is defined psychological resilience. [12] Psychological resilience is to act in adaptive behaviors while struggling and experiencing intense fear, anxiety, or grief. It is not the absence of negative emotions that matters, but our reaction to them. Increased anxiety, loneliness and sadness are normative experiences during a pandemic and do not preclude psychological resilience. [13] Being psychologically resilient is important to effectively deal with negative life events. This behavior can be learned and improved. It has been determined that people with high psychological resilience can stand better through difficulties and can effectively cope with them, that they are mentally healthier, more optimistic and have high sense of self and self-esteem and that they get more satisfaction from life.[14]

This study was conducted with the aim of determining the differences caused by some variables in terms of pandemic outbreaks in the case of COVID-19 and examining the correlation between health perception and psychological resilience.

2 | MATERIAL AND METHODS

2.1. Type of Study

This cross-sectional study was carried out using quantitative and general screening models.

2.2. Population and Sample of the Study

The first case of the COVID-19 epidemic in Turkey was identified on March 11th, 2020, and implementations for social isolation were started as of this date. Social isolation is based on social distance restrictions, where close contact with other individuals is limited. 31 cities in the country are kept in quarantine. Considering there are 81 cities in Turkey, the rate of quarantine is about 37.03%. Therefore, the data for the study were collected from individuals aged 20 and over in a digital environment. The data were collected on the coastline of the Black Sea, with all the neighboring cities under quarantine. The city that was designated as the target population of the study is not currently under quarantine, which led us to examine the health behaviors of the people residing there, as they are naturally included in the scope of risk. Participation was ensured through social media, and the participants were selected using the snowball sampling method. In this context, since the whole target population is not known, the data were collected by improbable sampling and easy sampling methods for both speed and ease. The data were collected in 18 days. The participants were informed through an information text placed at the top of the study form in accordance with the criteria of the Declaration of Helsinki.

2.3. Data Collection Tools For data collection, we used an Individual Information Form, the Brief Resilience Scale (BRS) and the Perception of Health Scale (PHS).

Personal Information Form: This form determines certain characteristics of the participants (age, gender, educational status, employment, perception of income, family structure, habits, chronic disease, persons in the risk group in the household – diagnosed/suspected persons - behaviors regarding personal protective measures for the epidemic – perception of information about the epidemic, etc.).

Brief Resilience Scale (BRS): As a self-report form to measure individuals' psychological resilience levels, the original form of the scale was created by Smith et al. in 2008 and adapted to Turkish by Dogan in 2015. [15] It is a five-point Likert type scale consisting of 6 questions. It is single-factored. The possible answers are "not suitable at all" (1), "not suitable" (2), "somewhat Suitable" (3), "suitable" (4) and "completely Suitable" (5). The 2nd, 4th and 6th items are coded in reverse. After the reverse-coded items are adjusted accordingly, high scores indicate a high level of psychological resilience. The internal consistency coefficient of the scale was found to be.83 in the study of Dogan and.78 in our study.

Perception of Health Scale (PHS): This scale was developed by Diamond et al. in 2007 and adapted to

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Turkish by Kadioglu and Yildiz in 2011. [16] The PHS is a five-point Likert type scale consisting of 15 items and 4 factors. The factors are Center of Control (CC: Items 2, 3, 4, 12 and 13), Certainty (C: Items 6, 7, 8 and 15), Importance of Health (IH: Items 1, 9 and 11) and Self-Awareness (SA: Items 5, 10 and 14). Items 1, 5, 9, 10, 11 and 14 indicate positive attitudes, while items 2, 3, 4, 6, 7, 8, 12, 13 and 15 indicate negative attitudes. The positive statements are scored as "strongly agree=5", "agree=4", "neither=3", "disagree=2" and "strongly disagree=1". The negative statements are scored in reverse. The scale has a minimum score of 15 and a maximum score of 75. Kadioglu and Yildiz found the scale to have an internal consistency coefficient of .77 for PHS,.90 for CC,.91 for SA,.91 for C and.82 for IH. In the current study we found the scale to have an internal consistency coefficient of.67 for PHS,.71 for CC,.65 for SA,.91 for C and.61 for IH.

Cronbach's Alpha coefficient was used to test the reliability of the data in the research. When the criteria in evaluating Cronbach's Alpha coefficient are considered, 0.00 [?] α <0.40 indicates the scale is not reliable, 0.40 [?] $\alpha < 0.60$ shows the scale has low reliability, 0.60 [?] $\alpha < 0.80$ demonstrates the scale is quite reliable, and 0.80 [?] $\alpha < 1.00$ means the scale is highly reliable.[17] In our study, it was found that both BRS and PHS were "quite reliable".

The suitability of the data and the adequacy of the sample size were examined with the Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett's Test of Sphericity. KMO values of 0.80 and above are excellent, values between 0.70-0.80 are good, values between 0.60-0.70 are moderate, values between 0.50-0.60 are bad, and values below 0.50 are unacceptable. [18] In our study, we found both scales to have a Kaiser-Meyer-Olkin (KMO) coefficient of.76. These results suggest that the study has a "good" sample size for analysis. Considering the p values in Bartlett's test for both scales, we see that correlations between variables are statistically significant at $p < 0.001$.

2.4. Evaluation of Data

The data obtained from the research were evaluated using the SPSS-22 software, and error checks, tables and statistical analyzes were done. Number and percentage values are presented in statistical evaluations. Before analyzes for normality, lost data and extreme value analyzes were performed. Then, we made histogram drawings for conformity to normal distribution, checked the skewness and kurtosis values and conducted Kolmogorov-Smirnov analyzes. Since the data were not normally distributed, logarithmic transformations were used. However, the total scale scores and the factor scores did not show normal distribution even after this procedure. Therefore, we used non-parametric tests testler [Mann Whitney U (MWU) ve Kruskall Wallis (KW)] and included mean rank values instead of mean and standard deviations in the tables. The correlations between descriptive variables and scale scores were evaluated using a Bivariate Correlation Analysis, and $p<0.05$ was accepted as the statistical significance level.

3 | RESULTS

We found that the participants had a mean age of 33.24 ± 10.95 (Median:32, Min:20, Max:68). 35.7% were male, and 84.1% had higher education. The participant characteristics are given in Table 1. 26.1% were government employees, 16.4% were workers, 4.1% were education personnel (teachers and academicians), 1.3% were health personnel, and 8.1% were unemployed. The others include housewives, private sector employees, legal staff, retired persons and students.

The behavior trends of the participants on personal protective measures for the epidemic can be seen in Table 2.

The mean scores from the scales and the factors were as follows: 20.11 ± 4.24 for BRS (Median:20, Min:7, Max:30), 52.68 ± 6.80 for PHS (Median:52, Min:36, Max:75), 17.70 ± 3.61 for CC (Median:18, Min:5, Max:25), 13.48 ± 3.37 for C (Median:14, Min:4, Max:20), 10.90 ± 2.33 for IH (Median:11, Min:1, Max:15) and 10.59 ± 2.34 for SA (Median:11, Min:3, Max:15). Table 3 shows the distribution of BRS and PHS scores on some characteristics and whether they made a difference.

We found no differences in scale scores and factor scores in terms of who the participants currently lived with, the risk groups of other residents, the presence of a person diagnosed with COVID-19 in the household,

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whether they thought the media and healthcare professionals were exaggerating the situation or whether they took care to frequently wash their hands ($p > 0.05$). We found differences between BRS scores in terms of the variables of gender, marital status, perception of income, chronic disease, health perception, the presence of persons in risk groups in the household, avoiding contact with risky people and not touching one's face/eyes with their hands ($p < 0.05$). We found differences between PHS scores in terms of the variables of perception of income, current accommodation, habits, health perception, whether they thought both masks and gloves were necessary outside the household, whether they took care to not admit to a health institution unless necessary, whether they paid attention to social distancing and not touching one's face/eyes with their hands ($p < 0.05$). We determined that education level created a difference in both CC and SA and that those with higher education levels had higher scores in these factors. We observed that the perception that both masks and gloves were necessary outside the household increased both C and IH factor scores ($p < 0.05$).

Table 4 shows the correlation between the ages and BRS and PHS scores of the participants.

It was seen that the psychological resilience of the participants increased in parallel with their health perceptions ($p < 0.05$). In addition, there was a positive correlation between age and psychological resilience ($p < 0.05$), but this correlation was not seen in perception of health ($p > 0.05$).

4 | DISCUSSION

Considered as a new virus, COVID-19 has spread to almost all countries in the world and still continues to rapidly spread in some countries. In Turkey, the number of deaths is 22.631 today (January 9th, 2021).[5] According to the European Centre for Disease Prevention and Control (ECDC, 2020), it is key to implement and maintain certain measures to slow down the spread of the virus within the society. Because this is the only way to avoid exceeding the capacities of healthcare systems to respond to the health needs of both serious COVID-19 patients and those not infected. [19] In the management of this process in Turkey, the Ministry of Health has ensured contact and isolation measures for the society within the scope of the strategies to combat COVID-19 in accordance with the recommendations of the scientific committee. The aim of this study was to examine the correlation between psychological resilience and health perception in terms of a number of variables in pandemic outbreaks in the case of COVID-19.

While most individuals in the study had no chronic diseases, half of the participants had family members who were in risk groups for COVID-19 those who had to go out of the house for their jobs. All age groups are susceptible to the COVID-19 infection, but the disease is more likely to be seen as severe and fatal in elders. The severity and course of mortality of the disease were revealed to be associated with cardiovascular diseases, diabetes, hypertension, chronic lung and kidney diseases and cancers. [20] Considering the fact that one infected person can infect 2-3.11 other people, strict isolation and protection measures constitute the most important step against the infection, particularly in risky groups. [6]

The participants in our study were found to have highly compliant behaviors in terms of the protective measures against the COVID-19 infection. Nearly all participants stated that they applied protection behaviors such as avoiding contact with other people, not admitting to health institutions unless for emergencies, washing their hands frequently and paying attention to social distancing. However, using both masks and gloves and not touching one's face and eyes were practiced relatively less· In their study in Hong Kong, Kwok et al. reported that most of their participants adopted personal hygiene measures (wearing masks and gloves, paying attention to coughing and sneezing, etc.) and travel restrictions and that they thought social distancing was beneficial in preventing the spread of the COVID-19 infection, albeit at low rates. [21]

Perceived health is a multifactorial indicator that provides information about the health of individuals, both physically and mentally, and is considered an important predictor of morbidity, mortality, quality of life, well-being and health. [22] Individual health perception is one of the most important factors affecting health protective behaviors. [23] Wise et al were highlighted that engagement in protective behaviours such as social distancing and hand washing are vital to protect health. Given the importance of human psychological and behavioral factors in managing pandemics, it is very important to evaluate psychological and behavioral responses to the situation. [24] People can contribute to their own health and well-being by adopting certain

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health behaviors or by avoiding certain behaviors. [25] Evaluation of health perceptions and health behaviors includes not only the biological dimension of health, but also the perceived well-being in physical, mental, social and functional aspects. [26]

As shown in studies on the SARS outbreak, individual beliefs and perceptions play a key role in making the desired behavioral changes. A higher perception regarding the effectiveness of the measures taken and a higher perception of threat regarding the disease both lead to higher positive behavioral change. Also, more information on the pandemic increases the probability of taking preventive measures. Studies on the influenza pandemic have shown that the emotional states of individuals brought along behavioral responses. [27]

In our study, the participants were found to have an above average mean perception score. In terms of health perception factors, the highest mean score was found to be in CC factor Özdelikara et al. (2018) conducted a study on the health perception of university students and found similar results. [28] Perception of health is a concept that is based on self-assessment and that reflects the multidimensionality of health. [29] CC determines whether individuals attribute their health to factors other than themselves (luck, fate, religious beliefs, etc.) and their self-confidence in terms of changing their health. We can safely say that the participants in our study assumed their responsibilities regarding their health.

PHS scores were found to be higher among individuals living in the district center, those who did not have harmful health habits, those who perceived their health as perfect, those who used masks and gloves outside the household and those who adopted social distancing. One other study also found that those living in the district had higher health perception scores, although the same study marked lower scores in individuals who perceived their health as "very good".[30] In a study on factory workers, university graduates and alcohol users had a higher perception of health, while the variables of gender, marital status, smoking and chronic disease did not make a difference in mean perception of health scores. [31]This result may have been due to the fact that those with a high responsibility for their health showed more adaptation to the measures to be taken for the epidemic.

In our study, we found those in the older age group, those who perceived their income as inadequate and those who used masks and gloves outside the household to have higher C scores. C determines whether individuals have a clear idea of what to do to stay healthy and to improve their health. [26] If individuals believe that a certain disease can easily spread and that high-risk behaviors will deteriorate their health and they live according to this belief, they develop preventive behaviors and avoid actions that they perceive as a danger to their health. [28] We thought that it can be effective to encourage the use of masks and gloves as an effective protection, to make it a rule to wear masks in public places and gloves in shopping centers and to apply criminal sanctions for those who do not. The fact that the media constantly mentions the protective measures and how the pandemic affects older individuals more severely may have contributed to the positive behaviors of our participants in this age group in terms of maintaining their health. Beside affecting individuals biologically, socially and psychologically, the pandemic also leads to negative economic outcomes. Those who perceived their income as inadequate avoid risky behaviors regarding their health and act more carefully in taking measures, which may be because they believe their financial status will be further damaged if they get ill.

Those with higher education level were found to have higher mean scores in both CC and SA factors. Bademli and Lok (2018) found that those with higher education levels had higher CC and SA scores, similar to our study. It is stated that education level is an important determinant of overall perception of health and that higher education levels may therefore create more intellectual perceptions regarding health. However, unlike our resuts, it was stated that mean C scores were higher in those with a good economic status. [32]

The COVID-19 outbreak is a unique process in that it is uncertain when it will end, has widespread and serious effects on daily life, and creates a complex source of stress. In this stressful and traumatic period, some people are trying to recover from COVID-19 or cope with the fear of illness and death. Many people are forced to adapt to the new situation dominated by the fear of viral spread and transmission. In the

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face of COVID-19, the person needs to cope with ongoing stress factors and keep psychological distress to a minimum. [33]Psychological resilience is the ability to successfully adapt to adversity, trauma or major stressors and refers to a dynamic process.[34] Psychological resilience is not a fixed feature, the psychological resilience of the individual may decrease over time or increase. For this reason, psychological resilience is a form of behavior that can be developed and learned. [14] It is stated that individuals with high psychological resilience experience positive emotions more, show less symptoms of depression, have higher resistance to stress, manage stress better, get old in a healthy way and cope better with traumatic events. [35] In our study, we found the participants to have a moderate level of psychological resilience. In another study conducted during the COVID-19 pandemic, it was found that, different from our finding, the psychological resilience of the participants was low. [36] The difference may be due to the fact that our study was conducted in the early period of the epidemic.

Those who had no chronic disease, those who perceived their income as adequate, those who perceived their health as perfect, males, married individuals, those who had no one in a risk group in their household, those who had no one in their household having to go outside for their job, those who stated that it is necessary to avoid close contact with other people during the epidemic and those who paid attention not to touch their face and eyes had higher mean scores. In patients who face various stressors during chronic diseases have their psychological resilience significantly affected. In the study of Ejder (2019), hemophilia patients had lower psychological resilience compared to healthy individuals. [37] Some of the social determinants affecting psychological resilience and health include socio-economic status, psychosocial and emotional factors, environment, education, culture and gender. [35] The effect of gender on psychological resilience may be attributed to the gender roles of women and men in assuming different responsibilities and thus experiencing different stressful events in various aspects.[38] In the study of Tosun et al. (2019), men were found to have higher psychological resilience. [39]Considering that psychological resilience comes to the fore when stressful life events are encountered, social support may affect psychological resilience. [38] Lok and Bademli showed that there is a positive relationship between perceived social support and psychological resilience. They also found that married individuals were psychologically more resilient. [40] The higher psychological resilience of married people may be due to their higher social support. Considered as a protective ability, psychological resilience defines individuals' positive harmony under life-threatening conditions. [38] In this context, it is expected for those who comply with the measures to have a high psychological resilience.

In this study, we determined a positive and significant correlation between age and psychological resilience. In a study conducted with healthcare professionals, it was shown that age, having children, profession and gender variables significantly predicted psychological resilience. Older age and being a man increased resilience, and having more children lowered psychological resilience. Moreover, higher levels of negative emotional state lower the level of psychological resilience.[41] Psychological resilience can be acquired later on in life. Individuals can carry this ability in proportion to time and their experiences. Individuals who have psychological challenges and difficult times in their childhood gain this resilience thanks to their struggle to survive, becoming stronger and gaining psychological resilience with advancing age. [42]

In our study, we observed that psychological resilience increased in parallel with better perceived health. COVID-19 can be described as a first pandemic with serious psychological, social and economic consequences. To control the risk of COVID-19 on public health, it has been recommended that some measures be implemented at both individual levels (eg, frequent hand washing, wearing medical masks) and at the country level strict lockdowns restricting movement of people, restricted entering of foreigners). [43] Pandemics that reach life-threatening levels increase anxiety levels and avoidance behaviors and bring social life to a halt. [7] · The recent coronavirus (COVID-19) pandemic is not different, in that it threatens not only physical health, but also psychological health. In the literature, it has been reported that there is a relationship between psychological resilience and psychological health, and worse perception of health has been reported in those with low psychological resilience. [44] Defined as the process of adaptation when significant sources of stress such as trauma, threat and serious health problems are encountered, psychological resilience is key in combating a challenging situation that threatens both physical and psychological health. This finding demonstrates individuals' ability to take care of their own health responsibilities, both in complying with the protection

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measures and in overcoming the situation psychologically.

5 | CONCLUSION

This research was determined that most participants applied protective measures to combat the epidemic and that they had moderate levels of perception of health and psychological resilience. Among the PHS factors, the highest mean score was in CC, while the lowest mean score was in SA. We determined a positive and significant correlation between age and psychological resilience and that psychological resilience increased in parallel with the health perceptions of individuals

Continuing education through social media during the epidemic process will support the increase of individuals' perceptions of health. More information and awareness should be provided in order to ensure the implementation of protection measures for individuals, which are very important in controlling the epidemic. Health, which is defined as a complete well-being, there must be mental / psychological well-being as well as physical well-being. Therefore, professional counseling can be provided to increase the psychological resilience of individuals in order to adapt to the stressful epidemic period.

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