

# STRESS-PERSONALITY RELATIONSHIP DURING COVID-19 RESTRICTIONS: A REVIEW

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## **Abstract**

*The unique and uncertain nature of the COVID-19 pandemic had made life miserable for everyone, causing physical and mental health problems. Psychological stress and anxiety were among the most common psychological outcomes. Previous studies explored that stress appraisal and management significantly depend upon the personality of people. Among the big five personality traits, neuroticism and agreeableness traits make individuals vulnerable and extraversion, conscientiousness, and openness make people tough and resilient to stress and depressive symptoms. This study is to explore whether this personality-stress relationship is still applicable during this global stress crisis. Results showed that the pre-pandemic knowledge can not be generalized in full, which means that stress management interventions should be personality specific.*

**Keywords:** Stress, Personality traits, Psychological strain, COVID-19, anxiety.

## **INTRODUCTION**

In a large-scale health crisis like the COVID-19 pandemic, lives have changed dramatically, dominated by fear, uncertainty, and novelty. Due to such experiences this global health crisis has also become global stress crisis. More than one and a half years have passed since the WHO announced COVID-19 the pandemic on 11 March 2020. (WHO, 2020)

To mitigate the mass infection, the government took swift decisions like physical distancing, quarantining, partial and full lockdowns, etc. Due to these confinement measures, lives became stagnant and this stagnancy has adversely affected human beings and increased the psychological strain (Somma et al., 2021; Tang et al., 2020; Tull et al., 2020). Many studies proved that COVID-19 restrictions especially quarantine is associated with an increase in insomnia (sleep disturbance), anxiety and depression. (Brooks et al., 2020; Mazza et al., 2020).

Fear of infection, inadequate information, fear of the job, increased burden of childcare, boredom, loneliness, and financial losses also caused additional stress. Stress basically works as a defense mechanism that relocates resources and improves survival chances in a challenging environment. It sharpens our attention and motivates us. But this defense system of the body is designed to be a short-term response to last for a few minutes or hours not for days and weeks. Besides this sometimes body can overreact to stressors that are not life-threatening like family problems, work pressure, traffic jams etc. Researches show that If the stress response system stays activated for a prolonged period it starts suppressing cognitive functions because the body is always in the 'fight and flight' mode (Harvard Health Publishing, 2020). The COVID-19 pandemic represents an extreme situation causing unique physical and mental health problems. Anxiety and stress are normal responses in such extreme situations as COVID-19 according to WHO (WHO, 2021)

An individual's reaction towards factors causing stress and their management depends upon the individual's personality.

Personality is a combination of unique behavioral and mental characteristic that defines an individual and their interaction with the surrounding environment. Among several approaches of personality, the five-factor model

(extraversion, agreeableness, conscientiousness, neuroticism, and openness;(Costa Jr. et al., 1996) is one of the most recognized personality trait models. This model does not bind the traits into a particular category but individuals are ranked on a continuum between two extreme ends. The personality traits are as follows:

- 1 Openness- adventurous, easy-going
- 2 Conscientiousness- Organized and dependable
- 3 Extraversion- Social butterflies, energetic
- 4 agreeableness- Compassionate, helpful
- 5 Neuroticism- Emotionally unstable

Previous studies have proved that personality traits are significantly associated with stress appraisal and its management (Lazarus & Susan Folkman, 1984). Few personality traits are contributors and few are resilient to stress. The general hypothesis is, that people with high neuroticism and agreeableness are prone to stress while on the other hand individuals with extroversion, conscientiousness and openness are considered resilient to stress.(Lecic-Tosevski et al., 2011; van der Wal et al., 2018; Vollrath, 2001) But this notion is true in a “normal” situation. In an extreme condition like the COVID-19 pandemic, where people are scared and living under a lot of stress due to COVID-19 restrictions, can we still expect the general applicability of the “personality -stress reactivity” relationship?

The primary aim of the study is to examine the literature on stress and personality during the COVID-19 pandemic and explore this relationship in “new normal” conditions.

## METHODOLOGY

The current article is a narrative review of the existing literature showing personality and stress relationships during the COVID-19 pandemic.

To explore the literature on stress and personality during COVID-19, a wide search was done on Google scholar using the keywords “Personality”, “stress”, “ COVID-19”, “psychological distress”, “anxiety”, “depression” in various permutations and combinations. In total 11 articles were chosen from peer-reviewed journals and all articles were original research specifically on the relationship of personality traits (Big five & maladaptive) and stress during the current pandemic. Out of the 11 studies, 4 studies were longitudinal studies done in Italy and Germany, the rest 7 were cross-sectional studies done in Canada, USA, Bangladesh, Slovenia, Germany and two were global studies. Two main themes were identified for the review: (a) Studies supporting the generalizability of personality and stress reactivity relationships during the pandemic, (b) Studies opposing the generalizability of personality and stress reactivity relationships during the pandemic.

## RESULTS

### (a) Studies supporting the generalizability of personality and stress relationships during the pandemic

Seven studies from Italy, USA, Germany(2), Slovenia and Bangladesh explored the impact of personality traits ( Big five traits/ maladaptive personality) on perceived stressfulness, anxiety, depression, sleep pattern and coping measures during the COVID-19 pandemic.(Ahmed et al., 2021; Kroencke et al., 2020; Modersitzki et al., 2021; Nikčević et al., 2021; Somma et al., 2021; Zager Kocjan et al., 2021). (shown in table1)

**Table 1**

Studies supporting the generalizability of personality traits and stress relationships during the pandemic

S. No.	Author Name	Country of Origin	Population Studied	Methodology	Study Instruments	Findings
1	(Somma et al., 2021)	Italy	General Public N= 304	Online Survey Longitudinal Study (beginning and end of	Self-rated Anxiety, depression and acute stress symptoms and	43% of participants reported anxiety and stress, maladaptive Personality predicts acute stress.

				lockdown)	personality	
2	(Zager Kocjan et al., 2021)	Slovenia	General Public N=2722	Online Survey Cross-sectional study	BFI, PSS, Connor-Davidson resilience scale	Neuroticism as a strong predictor of stress and depression, resilience also significant
3	(Ahmed et al., 2021)	Bangladesh	General Public N=521	Online Survey Cross-sectional	BFPI-10, PSS, FCV-19s, Pittsburgh sleep quality index	highly adaptive personality profile exhibited lower COVID-19 fear and perceived stress as well as better sleep quality
4	(Modersitzki et al., 2021)	Germany	General Public N=1320	Online Survey cross-sectional study	Personality inventory (combined) perceived restrictiveness of COVID scale	Psychological consequences during COVID strongly depends on Extroversion, openness and Neuroticism
5	(Nikčević et al., 2021)	USA	General Public N=502	Online Survey Cross-sectional study (early stage of pandemic)	BFT-10, Coronavirus anxiety scale, Anxiety syndrome scale	Extroversion, agreeableness, conscientiousness and openness were associated with lower anxiety and depressive symptoms
6	(Kroencke et al., 2020)	Germany	General public N=1609	Online Survey Longitudinal Study Early-stage of pandemic	Self-composed questionnaire on Covid-19 information, personality, the record of daily activities of participants	*Neuroticism is strongly related to the negative affective responses and maladjustment
7	(Wijngaards et al., 2020)	Global	General Public N=93125	Online survey Cross-sectional Study (early stage of COVID-19)	Government response Stringency index, Personal health questionnaire, Personality Inventory	Extraversion moderates the relationship between stringency protective measures and depressive symptoms

A longitudinal study done in Italy at the beginning and end of the lockdown found that 43% of participants reported having high stress, anxiety and depressive symptoms. Results showed that maladaptive personality (highly neurotic) predicted stress and anxiety among participants. (Somma et al., 2021). People with high neuroticism react strongly and negatively to any stressful event due to their emotional instability characteristic. (Ebstrup et al., 2011; Hoyle, 2006). In one study, 38,000 momentary reports provided by 1609 participants found that neurotic (less emotionally stable) individuals experienced more negative affect during the pandemic and paid more attention to news related to the pandemic. (Kroencke et al., 2020). Neuroticism trait is the individual difference in emotional instability and predicts a range of physical and mental health problems like anxiety, depression, insomnia, negative well-being, stress, burnout etc. (Kroencke et al., 2020; Somma et al., 2021; van der Wal et al., 2018)

However, highly adaptive personality traits like conscientiousness, extraversion, openness were reported to adapt to COVID-19 restrictions better and handled the stress well (Wijngaards et al., 2020).

(Ahmed et al., 2021) found that individuals with high extraversion, conscientiousness and openness have better sleep quality and low psychological outcomes than people with high neuroticism and agreeableness. One study was done in the USA also found similar results that people with high conscientiousness, extraversion and openness experienced less stress and showed less depressive symptoms during the pandemic. (Nikčević et al., 2021) Another study explored that, personality domains of negative affects and detachment (neuroticism) experienced more stress. (Mazza et al., 2020)

All the above studies (shown in table 1) clearly indicates that personality- stress reactivity relationship still hold good in COVID-19 restrictions despite all panic and extreme environment.

**(b) Studies opposing the generalizability of personality traits and stress relationships during the pandemic.**

Four studies (two longitudinal & two cross-sectional) exploring the effect of personality traits on perceived stressfulness, biological stress, coping responses and resilience during the COVID-19 pandemic were included (Engert et al., 2021; Liu et al., 2021; Robillard et al., 2020; Zacher & Rudolph, 2021) shown in table 2.

Table 2 Studies opposing the generalizability of personality traits and stress relationships during the pandemic.

S. No.	Author Name	Country of Origin	Population Studied	Methodology	Study Instruments	Findings
1	(Zacher & Rudolph, 2021)	Germany	General Public N=588 full-time Employees	Online Survey Longitudinal Study (during the lockdown, easing restrictions and Summer vacations)	Big Five personality Inventory, Stress appraisal measure	*Emotional Stability was associated with lower stressfulness *Extraversion associated with the high and average level of perceived stressfulness
2	(Engert et al., 2021)	Germany	General Public N=80	Online Survey Longitudinal Study	BFT, Stress, resilience, Hair Cortisol & Cortisone Concentration	Extraversion and neuroticism were associated with High biological Stress level
3	(Liu et al., 2021)	Canada	General Public N=1055	Online Survey Cross-sectional Study	NEO-FFI EPPM perceived threat and perceived efficacy	High Stress among Neurotic and extroversion people

4	(Robillard et al., 2020)	-	General Public N=6060	Online Survey 24 languages Cross-sectional	NEO. PSS	Neuroticism, Extroversion, Conscientiousness reported higher Stress
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Extroversion is generally considered a resilient trait, connected with a low level of stress. However, given the COVID restrictions generalizability of this assumption may be doubtful or limited (Brooks et al., 2020). For individuals with a high level of activity and sociability, it may be very difficult to stay indoors all the time due to COVID restrictions. Few studies show that pandemic was a difficult and stressful time for extroverts too due to the absence of social connectedness. In recent longitudinal studies done in Germany, revealed the same results, where extroverts were reported to have average to high levels of stress. The main causes were unable to socialize, the uncertainty of the virus and the high mortality rate. Another study exploring personality and resilience as predictors of biological stress found that people with high extraversion and neuroticism had higher hair cortisone levels, which means a high level of stress. (Engert et al., 2021; Zacher & Rudolph, 2021).

Some psychologists hypothesised that the “pandemic is a golden age for introverts” as they may be accustomed to or comfortable with spending time alone (Brooks et al., 2020). But all studies done during the pandemic claimed that individuals with neuroticism suffered more than others. (Kroencke et al., 2020; Wijngaards et al., 2020) Neuroticism was also found, positively associated with mood disorders, cardiovascular diseases, anxiety, insomnia and autoimmune diseases. An online global survey (n=6060) done during the pandemic found individuals with high neuroticism, extraversion and conscientiousness were stressed (Robillard et al., 2020). All the above studies (table 2) claimed that people with the high protective trait (extraversion) were found stressed and questioning the generalizability of personality-stress relationships during the pandemic.

## CONCLUSION

Pandemic is a unique situation causing unique physical and mental health problems. The uncertain and deadly nature of the pandemic is causing psychological strain and distress. The personality traits and stress relationship hold its applicability in the pandemic also, except few situations where extraverts were stressed. Although many studies were questioning extraversion as a resilient trait, still it can not be ignored that personality is a multi-faceted term containing varying degrees of all five traits. If any individual has a highly extraversion personality, it does not mean that other personality traits are zero or absent. It might be a possibility that the other traits may have played a dominating role in the case of an extreme situation like the COVID-19 pandemic, which still needs to be researched further.

Besides this, almost all the studies were done in the very early stage of the pandemic (mostly during the first wave) when the virus was unique and lots of uncertainty existed. The mortality rate was very high and there was no vaccine available. All these factors may elevate the anxiety and stress level of participants of the studies. The second and third waves of the current pandemic were more fatal, but no study covered that period.

Increased stress seems to be a temporary and short-term phase because according to transition theory people increasingly adapt to strong events and over time perceive them as less stressful as people learn to cope with stressful events (Schlossberg, 1981). The same results were also found in one longitudinal study, participants were less stressed in the second lockdown, as they were adapted to the lifestyle of the COVID-19 pandemic (Zacher & Rudolph, 2021). Finally, the central conclusion is that personality is immensely important in the identification of stress-prone people therefore stress management interventions should be personality specific.

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