

## Type D Personality as a Predictor of COVID-19-Related Dysfunctional Anxiety and Psychological Trauma

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### Abstract

**Objective:** This cross-sectional study aimed to determine whether individual with Type D personality were at risk of experiencing COVID-19-related dysfunctional anxiety and psychological trauma.

**Methods:** The prevalence of COVID-19-related anxiety was measured using the Coronavirus Anxiety Scale, psychological trauma was measured using the International Trauma Questionnaire, and Type D personality was assessed using the Type D Scale-14 (DS-14). Study was comprised of 203 participants.

**Results:** Individuals with Type D personality have been affected by the COVID-19 pandemic resulting in dysfunctional anxiety and psychological trauma. An independent samples t-test indicated a significant effect  $t(172) = 6.00, p < .0001$ , a chi-square analysis indicated significantly more cases of PTSD and complex PTSD within the Type D personality group  $\chi^2(2, N = 203) = 31.07, p < .0001$ .

**Conclusion:** Type D personality is a predictor of COVID-19-related dysfunctional anxiety and psychological trauma.

**Keywords:** Coronavirus; COVID-19; Dysfunctional Anxiety; Pandemic; Psychological Trauma; Type D Personality

### Introduction

In December 2019, the first cases of a new atypical respiratory virus were detected in Wuhan, China, that eventually led to a worldwide alert [1]. During the month of January 2020, the World Health Organization (WHO) published details of this new virus, referring to it as the coronavirus or COVID-19, in a technical publication. The WHO issued guidance and advice on how to detect, test, and manage potential cases like those in Wuhan, China, confirmed that there was human-to-human transmission, and advised that there was risk of a wider outbreak and international concern [2]. In the month of February 2020, the U.S. Centers for Disease Control and Prevention announced the first outbreak of COVID-19 in a long-term care center in Washington State [3]. On March 11, 2020, the WHO declared COVID-19 a global pandemic after the number of confirmed infection cases and fatalities were growing exponentially all over the world [2]. On March 13, 2020 the United States declared a national emergency [4].

COVID-19 is triggered by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and is transmitted from human-to-human primary through respiratory droplets. It is highly contagious. Some individuals can be infected and contagious but asymptomatic [4]. Commonly reported symptoms include body aches, cough, fatigue, headache, high fever, shortness of breath, and sore throat [5]. As COVID-19 progresses, health problems may develop leading to pneumonia, gastrointestinal, and cardiovascular complications, as well as death [5]. People over the age of 65 and people with existing chronic conditions such as diabetes, hypertension, and obesity are at higher risk of COVID-19 mortality [6]. In addition to its physical manifestation, COVID-19, impacts the mental well-being as evidenced by reported levels of anxiety, depression, panic, and posttraumatic stress disorders [7]. As of July 12, 2021, in the United States, there have

been 33,857,814 confirmed cases of COVID-19 infections and 607,178 deaths while globally, there have been 186,986,396 confirmed cases and 4,034,645 deaths [8].

Research in behavioral medicine has confirmed that personality, specifically Type D personality, is a risk factor for poor outcomes in cardiovascular health and is a strong and reliable predictor of poor health in general [9]. Type D personality is a normal personality disposition derived from the personality theory and comprised of two traits: negative affectivity and social inhibition [10]. Research has found that individuals with a Type D personality, as compared to individuals who are not Type D, have a higher rate of cardiovascular mortality and nonfatal myocardial infarction [11], are four to six times more likely to report elevated levels of anxiety and depression [12], have five times higher risk of poor mental health [13], four times higher risk of recurrent cardiac episodes [14], are at a significantly higher risk of myocardial infarction and a poorer prognosis following a myocardial infarction [15], and have more cardiovascular-related health problems [16].

Overall, Type D personality is linked to the dysfunction of the most important biological systems and unfavorable health behaviors [9]. There is an established association between Type D personality and the dysfunction of the biological components of the cardiovascular system (heart, arteries, arterioles, capillaries, venules and veins) [17] as well as conditions that strain, weaken, debilitate, and damage the heart muscle: heart arrhythmias [18], chronic heart failure [19], coronary artery disease [20], hypertension [21], myocardial infarction [13], and peripheral arterial disease [22]. As Type D personality is a psychosocial risk marker for patients with cardiovascular disease, the European Heart Society now recommends screening cardiovascular patients for Type D personality [23].

Previous research during the pandemic has begun to investigate personality and various aspects related to the pandemic. For instance, Volk and colleagues demonstrated that certain personality HEXACO traits were linked to specific coping strategies. The HEXACO model of personality assesses six dimensions of personality; honest-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience [24]. Specifically, elevated emotionality and extraversion were linked to higher levels of seeking socioemotional support and higher emotionality and conscientiousness were associated with higher problem-solving strategies. Meanwhile, lower honesty-humility, higher emotionality, higher extraversion, and lower conscientiousness were associated with higher avoidance while lower extraversion, lower conscientiousness, and higher openness to experience were associated with higher negative appraisal [25]. In a study utilizing the Big Five traits, Agbaria and Mokh (2021) [26] demonstrated that emotion-focused coping was negatively related to openness, extraversion, conscientiousness, and agreeableness while being positive correlated with neuroticism. Meanwhile, problem-focused coping was associated positively with openness, extraversion, conscientiousness, and agreeableness while being negative related to neuroticism [26]. Also using the Big Five traits, Liu and colleagues (2021) demonstrated that higher neuroticism and extroversion were associated with higher levels of stress during the pandemic and a greater increase in stress levels compared to levels before the pandemic [27]. Lastly, Carvalho, Piankowski, and Goncalves (2020) demonstrated that individuals higher in extroversion engaged in less social distancing while individuals higher on conscientiousness engaged in more social distancing and higher levels of handwashing [28]. Overall, these studies are establishing a clear link between personality factors and various aspects of the impact of the COVID-19 pandemic, from day-to-day behaviors associated with risk to how an individual may be coping with the pandemic. Additional research is needed to better understand how the COVID-19 pandemic might be impacting potential psychological symptoms and associated dysfunction through a personality lens. Type D personality provides an avenue for this, as this personality type is comprised of two traits: social inhibition and negative affectivity, which are consistently linked to attributes cited above as well as other aspects related to the COVID-19 pandemic thus far such as mental distress, compromised emotional state, stigma and discrimination, and emotional vulnerability triggered by the perceived threat of infection [29,30].

The onset of COVID-19 presented several alarming and concerning traits, including human-to-human transmission, highly contagious virus, and unpredictability regarding its detection, incubation, transmission, symptomology, and fatality risk [31]. As COVID-19 spread, social distancing and isolation strategies were adopted to minimize the risk of infection and to slow the spread of the virus [32]. Mass

lockdowns, stay-at-home orders, and curfews were implemented as containment measures to restrict movement and slow the rate of virus transmission [33]. As these measures were enacted, workers considered essential to maintain critical infrastructure operations were exempted from these ordinances. These ordinances did not provide guidance on how to protect these workers. Consequently, high rates of mental distress, infection and fatality have been reported among workers where distancing and isolation cannot be maintained [29,34,35]. The essential workforce provides services in agriculture, education, food, grocery, healthcare, law enforcement, manufacturing, transportation, etc. which is consistent with the respondents to this study [35].

### Purpose of the Study

Overall, the purpose of this study was to determine whether individuals with Type D personality are at a higher risk of experiencing increased levels of COVID-19-related dysfunctional anxiety and psychological trauma that might result in dysfunctionality compared to individuals that are not Type D personality. It was hypothesized that individuals with Type D personality would experience higher levels of dysfunctional psychological stress via measures of anxiety and trauma.

### Methods

#### Study design

Similar to others (ex., Aguayo-Carreras, *et al.* 2020 [36]; Deepak, *et al.* 2019 [37]; Lin., *et al.* 2020 [38]) who have utilized a cross-sectional design examining Type D personality, this cross-sectional, causal-comparative study was conducted utilizing a web survey that was distributed through Amazon Mechanical Turk, a crowd-sourcing online platform. Previous research utilizing MTurk samples have demonstrated similar responses to in-lab participants [36]. However, MTurk appears to provide a more diverse sample [36] and have a higher level of attentiveness compared to college students completing a series of online studies [37]. The web survey was created using Qualtrics. Qualtrics is an online experience management platform. The survey was comprised of 50 questions; 13 questions related to sociodemographic, five questions designed to screen for COVID-19-related dysfunctional anxiety, 18 questions designed to screen for COVID-19-related psychological trauma, and 14 questions to determine whether a person would be classified as having Type D personality or not.

#### Study participants

The study utilized a total of 203 participants. The study's inclusion criteria were (1) being 18 years of age, (2) a resident of the United States, and (3) employed during the height of the COVID-19 pandemic. Participants were recruited through fee-based referral services. Monetary compensation was provided to study participants. Eligible participants were asked to complete several questionnaires that inquired about their experiences and symptoms related to anxiety, fear, coping mechanisms, stress, and trauma in the context of the COVID-19 pandemic.

#### Measures

Participants meeting the inclusion criteria completed three instruments and a data collection form; (1) the Coronavirus Anxiety Scale was used to assess COVID-19-related dysfunctional anxiety and functionality impairment, (2) the International Trauma Questionnaire was used to assess psychological trauma in the form of Post-Traumatic Stress Disorder and Complex Post Traumatic Stress Disorder in the context of the COVID-19 pandemic, (3) the Type D Scale-14 was used to assess negative affectivity and social inhibition and determine Type D personality and (4) the data collection form was used to gather sociodemographic data.

**Anxiety:** The Coronavirus Anxiety Scale (CAS; Lee, 2020) is a 5-item 5-point Likert scale used for the assessment of anxiety symptoms in the context of the COVID-19 pandemic. Individuals report how much they have been bothered by specific anxiety symptoms during the

prior two weeks. The Likert scale ranges from 0 to 4, where 0 is “not at all” and 4 is “nearly every day over the last two weeks”. A score of  $\geq 9$ , indicates probable dysfunctional coronavirus-related anxiety. The Cronbach’s alpha for the Coronavirus Anxiety Scale is 0.93. Cronbach alpha is a measure of consistency. It has diagnostic quality of 90% sensitivity and 85% specificity which is similar to that of other mental health screening questionnaires, such as the Generalized Anxiety Disorder 7 (GAD-7) which has sensitivity of 89% and specificity of 82% [38].

**Psychological trauma:** The International Trauma Questionnaire (ITQ; Cloitre., *et al.* in press) is an 18-item 5-point Likert scale used for the assessment for traumatic symptoms. Individuals report how much they have been bothered in the last month by specific problems that are at times reported in response to a traumatic event. The Likert scale ranges from 0 to 4, where 0 is “not at all” and 4 is “extremely”. The first nine questions screen for re-experiencing, avoidance, sense of current threat, and functional impairment. Individuals meeting the criteria for re-experiencing, avoidance, sense of current threat, and functional impairment meet the criteria for post-traumatic stress disorder (PTSD). The last nine questions screen for affective dysregulation, negative self-concept, disturbances in relationships, and functional impairment. Individuals meeting the criteria for affective dysregulation, negative self-concept, disturbances in relationships, and functional impairment meet the criteria for disturbance in self-organization (DSO). If the criteria for PTSD is met but the criteria for DSO are not, the diagnosis is Post-Trauma Stress Disorder. If the criteria for PTSD and the criteria for DSO are met, the diagnosis is Complex Post-Trauma Stress Disorder. If the criteria for PTSD nor the criteria for DSO are met, there is no diagnosis. The International Trauma Questionnaire internal reliability for the PTSD and DSO subscales were assessed by Cronbach’s alpha to be  $\geq 0.77$  [39].

**Type D personality:** The Type D Scale-14 is a 14-item, 5-point Likert scale standard assessment of negative affectivity and social inhibition and determination of Type D personality [40]. The Likert scale ranges from 0 to 4, where 0 is false and 4 is true, except for questions 1 and 3, where 4 is false and 0 is true. To determine Type D personality, the scores for questions 2, 4, 5, 7, 9, 12 and 13 are added to assess negative affectivity and the scores for questions 1, 3, 6, 8, 19, 11 and 14 are added to assess social inhibition. Participants were qualified as Type D personality if the negative affectivity score totaled 10 or higher and if the social inhibition score also totaled 10 or higher. Cronbach’s alpha for the negative affectivity and social inhibition subscales were demonstrated to be 0.88 and 0.86. The test-retest reliability was demonstrated at 0.72 and 0.82, with stability over a three-month period. Internal consistency for the Type D Scale-14 was 0.87 for negative affectivity and 0.86 for social inhibition [40].

**Sociodemographics:** Participants were asked to provide sociodemographic information about themselves in the form of age, biological gender, education, income, marital status, ethnicity, employment status, current job arrangement, level of fear and occupational risk of contracting COVID-19, health status in the context of high-risk medical conditions, and the industry they are employed in.

### Statistical analysis

For the purposes of this cross-sectional, causal-comparative designed study, the Independent Variables (IV) were two independent groups (individuals with Type D personality versus individuals not Type D personality). The Dependent Variables included a (1) ratio-level measure of anxiety; and (2) a categorical level measure of psychological trauma. Therefore, the statistical analysis consisted of an independent sample t-test and a Chi-Square. Finally, for the purposes of this study in terms of statistical power, a sample size of 32 (16 per each independent group) was required given an alpha of .05 and power set to .80.

## Results

### Participant characteristics and sociodemographic data

The descriptive statistics and sample population characteristics are summarized in table 1 while COVID-19 related variables and type of employment are included in table 2. A total of 203 participants comprised this study. The mean participant age was 35.83, with more

than half the participants being male, two-thirds having at least a bachelor’s degree, more than half earning at least \$50,000 a year, and more than half being married. Regarding COVID-19 related variables, more than two-thirds have been safe from COVID-19 in that they have not been infected nor have had to self-isolate due to exposure, more than half report feeling apprehensive and scared of contracting the virus, more than half have no high-risk underlying conditions, and more than half are employed in the healthcare, food production and service, education or manufacturing industries.

Characteristics	Total	Type D (n = %)	Not Type D (n = %)
Participants	203	100 (49.26%)	103 (50.74%)
<b>Age</b>			
Average	35.83	34.16	37.46
Range	19-64	19-62	23-64
<b>Biological Gender</b>			
Males	124	61 (61.00%)	63 (61.17%)
Females	79	39 (39.00%)	40 (38.83%)
<b>Education</b>			
High school degree or less	13	5 (5.00%)	8 (7.77%)
Some college but not degree	18	11 (11.00%)	7 (6.80%)
Associate degree	18	7 (7.00%)	11 (10.68%)
Bachelor’s degree	96	49 (49.00%)	47 (45.63%)
Master’s degree	51	25 (25.00%)	26 (25.24%)
Doctorate degree	2	0 (0.00%)	2 (1.94)
Professional degree (JD or MD)	5	3 (3.00%)	2 (1.94%)
<b>Family income</b>			
Less than \$10,000	3	1 (1.00%)	2 (1.94%)
\$10,000-19,999	6	5 (5.00%)	1 (0.97%)
\$20,000-29,999	34	23 (23.00%)	11 (10.68%)
\$30,000-39,999	18	9 (9.00%)	9 (8.74%)
\$40,000-49,999	21	14 (14.00%)	7 (6.80%)
\$50,000-59,999	25	14 (14.00%)	11 (10.68%)
\$60,000-69,999	15	4 (4.00%)	11 (10.68%)
\$70,000-79,999	32	10 (10.00%)	22 (21.36%)
\$80,000-89,999	10	7 (7.00%)	3 (2.91%)
\$90,000-99,999	13	6 (6.00%)	7 (6.80%)
\$100,000-149,999	15	5 (5.00%)	10 (9.71%)
More than \$150,000	10	1 (1.00%)	9 (8.74%)
<b>Marital Status</b>			
Single	93	47 (47.00%)	46 (44.66%)
Married	103	53 (53.00%)	50 (48.54%)
Separated	1	0 (0.00%)	1 (1.11%)
Divorced	5	0 (0.00%)	5 (4.85%)
Widow	1	0 (0.00%)	1 (1.11%)
<b>Ethnicity</b>			
African American	18	6 (6.00%)	12 (11.65%)
Asian	24	10 (10.00%)	14 (13.59%)
Caucasian	140	75 (75%)	65 (63.11%)
Hispanic/Latino	16	7 (7.00%)	9 (8.74%)
Native American	3	(2.00%)	1 (0.97%)
Other	2	0 (0.00%)	2 (1.94%)

Table 1: Sociodemographic.

Characteristics	Total	Type D (n = %)	Not Type D (n = %)
<b>COVID-19 Status</b>			
Tested positive or exposure	25	23 (23.47%)	2 (1.94%)
Not infected, no exposure	176	75 (76.53%)	101 (98.05%)
<b>Emotions during pandemic</b>			
Unsafe	47	31 (10.20%)	16 (7.02%)
Insecure	65	39 (12.83%)	26 (11.40%)
Hopeless	30	26 (8.55%)	4 (1.75%)
Very concerned	79	47 (15.46%)	32 (14.04%)
Safe	95	44 (14.47%)	51 (22.37%)
No worries	41	11 (3.62%)	30 (13.16%)
High level of stress and anxiety	64	41 (13.49%)	23 (10.09%)
On the edge	49	30 (9.87%)	19 (8.33%)
Panic	29	23 (7.57%)	6 (2.63%)
Relaxed	33	12 (3.95%)	21 (9.21%)
<b>Health Status - High-risk Conditions</b>			
Diabetes	22	17 (17.00%)	5 (4.85%)
Heart disease	3	3 (3.00%)	0 (0.00%)
Hypertension	10	5 (5.00%)	5 (4.85%)
Kidney disease	1	1 (1.00%)	0 (0.00%)
Liver disease	4	4 (4.00%)	0 (0.00%)
Obesity	22	15 (15.00%)	7 (6.81%)
Sickle cell anemia	1	1 (1.00%)	0 (0.00%)
Weaken immune system	9	4 (4.00%)	5 (4.85%)
No high-risk condition	131	50 (50.00%)	47 (45.63%)
<b>Field or Industry of Employment</b>			
Front line healthcare	13	11 (11.00%)	2 (1.94%)
Second line healthcare	7	4 (4.00%)	3 (2.91%)
Transportation	8	4 (4.00%)	4 (3.88%)
Food and Service	35	20 (20.00%)	15 (14.56%)
Education	25	10 (10.00%)	15 (14.56%)
Manufacturing	33	17 (17.00%)	16 (15.53%)
Law Enforcement	2	1 (1.00%)	1 (0.97%)
Other	80	33 (33.00%)	47 (45.63%)

**Table 2:** COVID-19 experience, health status and field of employment.

**COVID-19-related anxiety and psychological trauma**

First, the correlations between COVID-19-related dysfunctional anxiety, psychological trauma, and Type D personality were calculated (See table 3). Overall, Type D personality is positively correlated with both increased dysfunctional anxiety about COVID-19 and with increased psychological trauma scores with medium effect sizes. Anxiety was largely correlated with trauma. When broken down into its

two traits, negative affectivity was moderately related to anxiety and trauma while social inhibition was still significantly related but to a much smaller effect.

	Type D	SI	NA	Anxiety	Trauma
Type D	---	.59**	.85**	.39**	.39**
SI		---	.63**	.23**	.17*
NA			---	.47**	.42**
Anxiety				---	.77**
Trauma					---
Mean (SD)	.49 (.51)	14.80 (6.35)	10.77 (8.12)	4.84 (5.46)	1.53 (.79)

**Table 3:** Correlations, means, and standard deviations of study variables.  
 Note. SI = Social Inhibition; NA = Negative Affectivity; \*p < .05; \*\*p < .01.

Next, an independent samples t-test was conducted to compare individuals categorized as Type D personality versus those who were not, on their level of COVID-19-related anxiety (See table 4). The Levine’s test for equality of variance indicated that equal variances should not be assumed. The results indicated a significant effect  $t(172) = 6.00, p < .0001$ , demonstrating differences between Type D and not Type D on the anxiety scale, with individuals categorized as Type D personality endorsing significantly higher anxiety scores.

	N	Mean	SD	t-test	df	P
Type D	100	7.00	5.93	6.00	172.43	<.0001.
Not Type D	103	2.74	3.98			

**Table 4:** T-test results of differences in COVID-19 Anxiety in individuals with and without Type D personality.

Finally, a chi-square analysis was conducted to assess for differences on the psychological trauma scale. The results indicated significantly more cases of PTSD and complex PTSD within the Type D personality group compared to the not Type D personality group,  $\chi^2(2, N = 203) = 31.07, p < .0001$ . Table 5 illustrates the crosstabulation of the groups.

	No PTSD	PTSD	Complex PTSD	Total
Type D No	85	13	5	103
Type D Yes	49	18	33	100
Total	134	31	38	203

**Table 5:** Crosstabulation of trauma categories between type D and not type D personality.

## Discussion

To the best of our knowledge, this is the first study that examined the relationship between Type D personality and increased levels of COVID-19-related dysfunctional anxiety and psychological trauma. Overall, the goal of this study was to investigate whether Type D personality has a relationship with increased dysfunctional anxiety surrounding COVID-19 and with potential psychological trauma. The results demonstrated that Type D personality was associated moderately with both COVID-19-related dysfunctional anxiety and psychological trauma. Fifty-nine participants (29.06%) met the criteria for dysfunctional anxiety, of these 72.88% were Type D personality. Sixty-

nine participants (33.99%) met the criteria for psychological trauma, of these 73.81% were Type D personality. Thirty-eight participant (18.72%) met the criteria for complex post-traumatic stress disorder, of these 86.84% were Type D personality. Additionally, ninety-two percent (92.00%) of the individuals who reported testing positive for COVID-19 or being exposed to the coronavirus were Type D personality, individuals with Type D personality reported having 69.44% of all reported high-risk medical conditions, and of the reported emotions of despair experienced during the pandemic, 62.29% of these were reported by individuals with Type D personality. Therefore, individuals with Type D personality traits (i.e. negative affective and social inhibition) have been particularly affected by the COVID-19 pandemic as it has resulted in a significant increase in dysfunctional anxiety and psychological trauma about the pandemic.

The current study is in line with previous research demonstrating a link between negative affectivity with other negative aspects of COVID-19 such as negative coping strategies [26,27]. The results expand upon previous research by demonstrating a clear link between these personality traits and psychological symptoms that are resulting from living in a pandemic. Specifically, this study demonstrates a clear link between Type D personality and the influence of the pandemic on functioning during the past few months. This personality type is linked to increased anxiety and trauma symptoms, including impairment. Therefore, this study has implications for any potential outreach and treatment recommendations for dealing with the stress associated with being in a pandemic. Specifically, Type D individuals may benefit from training in emotion regulation skills and other coping skills that may alleviate the increased negative affect. Additionally, providing further support or skills in building support would be potentially beneficial for this group. Further research is needed to better understand which clinical tools may be most useful for this population.

Similar to previous recommendations, medical professionals should pay particular attention to patients showing signs of negative affectivity, social inhibition, dysfunctional anxiety, and psychological distress as this study has demonstrated that individuals with Type D personality have been particularly affected by the COVID-19 pandemic and prior studies have shown that Type D personality is a risk factor for poor cardiovascular and mental health outcomes and people infected with COVID-19 have a higher risk of developing cardiovascular complications [11,16]. Type D personality may exacerbate a COVID-19-related cardiovascular scenario.

The prevalence of Type D personality in the general population ranges from 20% to 40% [41]. The prevalence of Type D personality for this study was 49.26%. Further research is needed to examine whether the higher prevalence rate reflected in this study is driven by the dynamism of life span or whether individuals have experienced a change in personality after living through the COVID-19 pandemic, a negative and unpleasant life event that threaten the existential nature of life with illness and death. Personality change has been attributed to significant life events in young and older age [42] and a circular relationship exists where a perceived threat can prompt a negative mood and the negative mood elevates the sense of the threat [30].

### Limitations and Future Directions

The results of the current study should be understood through the lens of potential weaknesses and limitations. First, the data is cross-sectional in nature, which limits the ability to draw causal inferences. While the hypothesized models were theory driven, additional models should be tested in future prospective investigations. Specifically, future research utilizing longitudinal data would provide further evidence for the potential link between underlying personality traits and behavioral outcomes.

Second, the study utilized self-report measures to assess personality and current COVID-19-related dysfunctional anxiety and psychological trauma symptoms. Given the face valid nature of the assessments, participants may have tempered their responses to show a more socially acceptable or positive personality style. Notably, there is empirical support for the validity of self-report personality measures [43]. Regardless, future studies should investigate self-report with informant-reported personality assessments of individuals. Furthermore, utilizing interviews would provide an additional method of assessment and greatly strengthen the understanding of personality and how it may be influencing a person's functioning during the global pandemic.

A final consideration is that the current study did not include other potential confounds within the data collection process. For example, other factors that might impact the relationship between personality and symptoms are perceived threat and efficacy [27]. Future research should continue to investigate risk factors that were not included in the current study or in previous research to better understand the interrelations between many of these variables that are all impacting a person's functioning. For instance, there may be some mediating and moderating variables between personality and symptom presentation or between personality and day-to-day functioning.

### Conclusion

The current study investigated the potential relationship between Type D personality with dysfunctional anxiety and psychological trauma symptoms resulting from the COVID-19 pandemic. Consistent with our hypotheses, individuals with a Type D personality were more likely to report elevated levels of COVID-19-related dysfunctional anxiety dysfunction and psychological trauma symptoms. Future research should continue to investigate how personality may influence a person's ability to cope as well as potential dysfunction that may be more likely to occur as a result of specific personality styles.

### Disclosure Statement

No potential conflict of interest was reported by the authors.

### Bibliography

1. Wang C., *et al.* "A novel coronavirus outbreak of global health concern". *Lancet* 395.10223 (2020): 470-473.
2. WHO. Coronavirus disease 2019 (COVID-19) (2020).
3. Centers for Disease Control and Prevention. 2020. COVID-19 in a long-term care facility - King County, Washington, February 27-March 9, 2020. Atlanta, GA: US Department of Health and Human Services, CDC (2020a).
4. Centers for Disease Control and Prevention. Coronavirus disease 2019 (COVID-19). Atlanta, GA: US Department of Health and Human Services CDC (2020b).
5. Tu Y-F., *et al.* "Review of SARS-CoV-2 and the ongoing clinical trials". *International Journal of Molecular Sciences* 21.7 (2020): 2657.
6. Yanez ND., *et al.* "COVID-19 mortality risk for older men and women". *BMC Public Health* 20 (2020): 1742.
7. Jakovljevic M., *et al.* "COVID-19 pandemic and public and global mental health from the perspective of global health security". *Danubian Psychiatric* 32.1 (2020): 6-14.
8. Dong E., *et al.* "An interactive web-based dashboard to track COVID-19 in real time". *The Lancet Infectious Diseases* (2021).
9. Rodriguez L and Shriner M. "Type D Personality as a Risk Factor for Repeated Episodes of Coronary Artery Spasm". *Journal of Coronary Artery Diseases* 2.103 (2018): 1-9.
10. Denollet J., *et al.* "Personality as independent predictor of long-term mortality in patients with coronary heart disease". *The Lancet* 347 (1996): 417-421.
11. Grande G., *et al.* "Association between type D personality and prognosis in patients with cardiovascular disease: A systematic review and meta-analysis". *Annals of Behavioral Medicine* 43 (2012): 299-310.
12. Spindler H., *et al.* "Increased anxiety and depression in Danish cardiac patients with a type D personality: Cross-validation of the type D scale (DS14)". *International Journal of Behavioral Medicine* 16 (2009): 98-107.

13. Williams L., *et al.* "Type D personality and illness perceptions in myocardial infarction patients". *Journal of Psychosomatic Research* 70 (2011): 141-144.
14. Nyklicek I., *et al.* "Type D personality and cardiovascular function in daily life of people without documented cardiovascular disease". *International Journal of Psychophysiology* 80 (2011): 139-142.
15. Mols F and Denollet J. "Type D personality in the general population: A systematic review of health status, mechanisms of disease, and work-related problems". *Health and Quality of Life Outcomes* 8.9 (2010): 1-10.
16. Dannemann, S., *et al.* "Is type D a stable construct? An examination of type D personality in patients before and after cardiac surgery". *Journal of Psychosomatic Research* 69 (2010): 101-109.
17. Denollet J., *et al.* "A general propensity to psychological Distress affects cardiovascular outcomes: Evidence from research on the type D (distressed) personality profile. Circulation Cardiovascular Quality and Outcomes". *Journal of the American Heart Association* 3 (2010): 546- 557.
18. Denollet J., *et al.* "Age-related differences in the effect of psychological distress on mortality: type D personality in younger versus older patients with cardiac arrhythmias". *Bio Med Research International* (2013): 1-7.
19. Widdershoven J., *et al.* "How are depression and type D personality associated with outcomes in chronic heart failure patients?" *Current Heart Failure Reports* 10 (2013): 244-253.
20. Vukovic O., *et al.* "Type D personality in patients with coronary artery disease". *Psychiatria Danubina* 26.1 (2014): 46-51.
21. Denollet J. "DS 14: Standard assessment of negative affectivity, social inhibition and Type D personality". *Psychosomatic Medicine* 67.1 (2005): 89-97.
22. Aquarius AE., *et al.* "Type D personality and mortality in peripheral arterial disease". *Journal of American Medical Association Archives of Surgery* 144.8 (2009): 728-733.
23. Leu H., *et al.* "Impact of type D personality on clinical outcomes in Asian patients with stable coronary artery disease". *Journal of the Formosan Medical Association* 118 (2019): 721-729.
24. Garbe L., *et al.* "Influence of perceived threat of Covid-19 and HEXACO personality traits on toilet paper stockpiling". *PLOS ONE* 15.6 (2020): e0234232.
25. Volk AA., *et al.* "The influence of demographics and personality on COVID-19 coping in young adults". *Personality and Individual Differences* 168 (2021): 110398.
26. Agbaria Q and Mokh AA. "Coping with Stress During the Coronavirus Outbreak: The Contribution of Big Five Personality Traits and Social Support". *International Journal of Mental Health and Addiction* (2021): 1-19.
27. Liu S., *et al.* "Personality and perceived stress during COVID-19 pandemic: Testing the mediating role of perceived threat and efficacy". *Personality and Individual Differences* 168 (2021): 110351.
28. Carvalho LDF, *et al.* "Personality differences and COVID-19: are extroversion and conscientiousness personality traits associated with engagement with containment measures?" *Trends in Psychiatry and Psychotherapy* 42.2 (2020): 179-184.
29. Chu IY, *et al.* "Social consequences of mass quarantine during epidemics: a systematic review with implications for the COVID-19 response". *Journal of Travel Medicine* 27.7 (2020): taaa192.
30. Pérez-Fuentes MdC., *et al.* "Threat of COVID-19 and emotional state during quarantine: Positive and negative affect as mediators in a cross-sectional study of the Spanish population". *PLoS ONE* 15.6 (2020): e0235305.

31. Alshehri FS., *et al.* "Prevalence of post-traumatic stress disorder during the COVID-19 pandemic in Saudi Arabia". *Saudi Pharmaceutical Journal* 28.12 (2020).
32. Shen K., *et al.* "Diagnosis, Treatment, And Prevention Of 2019 Novel Coronavirus Infection In Children: Experts' Consensus Statement". *World Journal of Pediatrics: WJP*; 2020. Global Pediatric Pulmonology Alliance (2019): 1-9.
33. Singh S., *et al.* "Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations". *Psychiatry Research* 293 (2020): 113429.
34. Larochelle MR. "Is it safe for me to go to work? Risk stratification for workers during the Covid-19 pandemic". *New England Journal of Medicine* 1-3.383 (2020): e28.
35. Guasti N. "The plight of essential workers during the Covid-19 pandemic". *The Lancet* 1587.395 (2020): 10237.
36. Aguayo-Carreras P., *et al.* "Type D personality is associated with poor quality of life, social performance, and psychological impairment in patients with moderate to severe psoriasis: A cross-sectional study of 130 patients". *Indian Journal of Dermatology, Venereology and Leprology* 86.4 (2020): 375-381.
37. Kumar Deepak., *et al.* "A cross sectional study to find out the prevalence of Type D personality and its associated factors among undergraduate students of a dental college in western Uttar Pradesh". *International Journal Of Community Medicine And Public Health* 6.8 (2019): 3444-3448.
38. Lin YH., *et al.* "Type D Personality Is Associated with Glycemic Control and Socio-Psychological Factors on Patients with Type 2 Diabetes Mellitus: A Cross-Sectional Study". *Psychology Research and Behavior Management* 13 (2020): 373-381.
39. Casler K., *et al.* "Separate but equal? A comparison of participants and data gathered via Amazon's MTurk, social media, and face-to-face behavioral testing". *Computers in Human Behavior* 29 (2013): 2156-2160.
40. Hauser DJ and Schwarz N. "Attentive Turkers: MTurk participants perform better on online attention checks than do subject pool participants". *Behavior Research Methods* 48 (2016): 400-407.
41. Lee SA. "Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety". *Death Studies* 44.7 (2020): 393-401.
42. Cloitre M., *et al.* "The International Trauma Questionnaire: development of a self-report measure of ICD-11 PTSD and complex PTSD". *Acta Psychiatrica Scandinavica* 138 (2018): 536-546.
43. Denollet J. "DS14: Standard assessment of negative affectivity, social inhibition and Type D personality". *Psychosomatic Medicine* 67.1 (2005): 89-97.
44. Conraads VM and Denollet J. "Type D personality and vulnerability to adverse outcomes in heart disease". *Cleveland Clinic Journal of Medicine* 78.1 (2011): S13-S19.
45. Specht J., *et al.* "Stability and change of personality across the life course: the impact of age and major life events on mean-level and rank-order stability of the Big Five". *Journal of Personality and Social Psychology* 101.4 (2011): 862-882.
46. Widiger TA and Boyd SE. "Personality disorders assessment instruments". In: J. N. Butcher (Ed). "Oxford library of psychology". Oxford handbook of personality assessment (2009): 336-363.

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