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## Impact of Covid-19 Quarantine on U.S. Adults

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**Impact of Covid-19 Quarantine on U.S. Adults**

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Presented to the Faculty of the  
Graduate School of Clinical Psychology

George Fox University

in partial fulfillment

of the requirements for the degree of

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**Impact of Covid-19 Quarantine on U.S. Adults**

by

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### Abstract

In 2019 a novel virus spread quickly and vastly throughout the world. The coronavirus was transmitted easily, resulting in a sudden increase in infection and death rates and overwhelmed hospitals. This sudden pandemic resulted in government and health officials mandating physical and social quarantines. These mandates were initially implemented to separate the ill from the healthy, and significantly limit physical contact between healthy and ill persons to decrease the spread of Covid-19. All these unexpected factors induced traumatic stress in populations across the world. The impact of this trauma is seen to date, as many studies reported adverse mental health effects in an array of populations and researchers speculate these effects will continue long after Covid-19 (Raker et al., 2020). This study aimed to assess the role of social quarantine as a moderating factor to these adverse mental health symptoms. In a Qualtrics sample of US adults ( $n = 596$ ) completed a survey with approximately 220 items including a demographic survey, Adverse Childhood Experiences (ACEs) Questionnaire, Covid-19 Pandemic Mental Health Questionnaire, Patient Health Questionnaire-9, Generalized Anxiety Disorder Scale-7, International Trauma Questionnaire, Brief Resiliency Scale, and the Tobacco, Alcohol, Prescription Medication and Other Substances Tool. Several three-model hierarchical regressions were run to predict social quarantine as a moderating factor for adverse mental health symptoms in United States adults. Demographic and risk factors were used as predictor variables and clusters of mental health symptoms were established as criterion variables. The results showed historical events, such as ACEs or resiliency were stronger predictors of adverse health effects. However, quarantine was a significant moderating variable, and accounted for some variance in each cluster of symptomologies. These results add to the existing literature about the long-term effects of Covid-19, as quarantine has exacerbated many adverse mental health symptoms in the

general population.

*Keywords:* Covid-19, quarantine, mental health,

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## **Impact of Covid-19 Quarantine on U.S. Adults**

### **Chapter 1**

Change of any kind creates stress in the human body. To prepare for change, a stress hormone is produced that lowers other biological functions and focuses the body's energy on addressing the stressor. Oftentimes change, and the stress that accompanies it, are easily manageable allowing the body to adjust and return to homeostasis. Sometimes the change is perceived to be unmanageable, resulting in the experience of distress. Other times, the change seemingly removes an individual's autonomy, causing a major secretion of stress hormones to prepare the individual for a traumatic experience (Briere & Scott, 2015; Russell et al., 2015).

When an individual endures traumatic stress, a neurological rewiring may occur, making it difficult for the individual to feel a sense of peace or safety. When an individual is unable to regulate that neurological change, their body is in a prolonged state of stress. Some effects of this may include decreased immune system functioning and increased health complications, increased fatigue, interpersonal distress, poor concentration and other cognitive functioning difficulties, and behavioral changes to mitigate the stress such as isolation, substance use, or hypervigilance (Briere & Scott, 2015; Kira et al., 2022). In all, living in this state of traumatic stress results in many biological, social, psychological, and spiritual problems.

In 2019 the world was exposed to a novel virus that induced traumatic stress worldwide. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) began in Wuhan, China and quickly made its way across the world (World Health Organization, 2020). Those positive with the coronavirus disease (Covid-19) filled hospital beds looking for medical relief, overwhelming many hospitals. In response, the World Health Organization issued the highest alert for infectious diseases on March 11, 2020, and the United States declared a state of

emergency on March 13, 2020. To slow the spread of the disease many health and government officials encouraged a two-week isolation period for those with mild symptoms of Covid-19 (Agha, 2021; Thakur & Jain, 2020). Many also enforced social distancing measures for uninfected individuals. Social distancing enforcement and adherence varied among jurisdictions; however, some manifestations of it included working remotely, distance learning, decreasing capacities of public places, wearing masks, limiting group gatherings, discouraging travel, curfews, and job loss (Lee et al., 2021; Shader, 2020; Thakur & Jain, 2020). For many, life as they had known it changed drastically and suddenly in the span of just a few days.

Although these protective measures have proven to be successful for their intended effect (Courtemanche et al., 2020), studies have shown many negative impacts on mental health (Agha, 2021; Lee et al., 2021; Shader, 2020; Thakur & Jain, 2020). Research indicates the general public experienced symptoms of anxiety such as panic and fear, as well as financial stressors, loss of frequent social supports, and increased isolation (Agha, 2021; Bodas & Peleg, 2020; Clair et al., 2021; Kira et al., 2021; Shader, 2020). From 2019 to 2020, self-reported substance abuse and misuse increased 13% and there has been an observed increase in opiate overdoses (Abramson, 2021; Czeisler et al., 2020). And, although United States suicide rates have significantly declined since 2018, researchers speculate the long-term effects of quarantine measures may induce an increase of suicides in the following years (Ehlman et al., 2022). Additionally, individuals positive for Covid-19 and their caregivers who engaged in a 2-week quarantine experienced post-traumatic stress disorder, anxiety, aggression, psychological distress, and implemented maladaptive coping mechanisms (Agha, 2021; Sprang & Silman, 2013). Lastly, many health care workers reported symptoms of burn-out; these results were greater in countries with greater stringency, life expectancy, literacy, and social capital (Agha,

2021; Lai et al., 2020; Lee et al., 2021; Sprang & Silman, 2013).

The traumatic stress Covid-19 created has significantly affected individuals worldwide. And, despite the development of vaccinations and a reduction in quarantine mandates, the effects of Covid-19 continue. Much like other traumatic experiences, it is likely these effects will linger long after Covid-19.

The purpose of this study is to look at the impact Covid-19 quarantine had on the general public. Due to the prolonged stress that Covid-19 created, the general public has engaged in many behaviors consistent with depression (isolation, suicidal ideation, poor concentration, lack of interest, irritability, etc...), anxiety (worrying about catching and transmitting Covid-19), trauma (nightmares, hypervigilance, interpersonal conflict), and substance use (use of illicit, legal, or prescribed substances in excess). Current research supports an observed increase in these symptoms since the onset of Covid-19. The researcher hypothesized quarantine has negatively impacted the general population's mental health.

## **Chapter 2**

### **Method**

#### **Participants**

Participants were recruited through Qualtrics, a national data collection website, where they accessed the survey electronically. Participants included 596 United States adults. Participants ranged in age from 18–85 years; 66.6% of the sample identified as female, 32.2% as male, 0.7% as transgender female, and 0.5% as non-binary. Regarding ethnicity, 68.6% of participants identified as White, 18.8% Black, 8.2% Hispanic or Latino, 2.7% Asian, 0.7% American Indian or Alaskan native, 0.2% native Hawaiian or other pacific islander, and 0.8% reported the choices of ethnicity presented did not represent their ethnic identity. Regarding

socioeconomic status, 37.9% reported they have no trouble paying bills, obtaining food, and keeping their residence, 31.7% reported difficulty paying bills, obtaining food, and worry about losing their residence, and 30.4% reported struggling to pay bills and obtain food, but do not worry about losing their residence. Of the sample, 36.9% of participants reported experiencing a Covid-19 related loss; among these, 15.9% reported loss of a family member, 15.3% loss of job, and 5.7% reported loss of another kind.

## **Instruments**

### ***Demographic Survey***

All participants answered demographic questions at the beginning of the questionnaire. These items included questions about age, gender identity, ethnic identity, employment status, number of people in their household, information about their residence, socioeconomic status (SES) during Covid-19, highest level of education, importance of religious and spiritual practices (Gorsuch & McFarland, 1972), and the impact of Covid-19 on their lives. Covid-19 impact questions included subsequent loss of job or family members. This information was used to describe participants of the study, and control for different demographic factors that could increase the risk or account for protective factors for negative mental health effects from quarantine (see Appendix A).

### ***Adverse Childhood Experiences***

Adverse childhood experiences (ACEs; Felitti et al., 1998) is a survey used to collect information about childhood maltreatment, household dysfunction, and parental substance use in families before the participant's 18<sup>th</sup> birthday. The ACEs study found higher ACEs scores impact an individual's health and well-being (Felitti, et al., 1998). This study applied the ACEs survey (see Appendix B) to assess the relationship between ACEs scores and impact of mental health

after quarantine. This self-report measure has 10 yes/no items. Each “yes” is valued at 1 point. Scores on this survey ranged from 0–10. Low scores suggested minimal traumatic experiences in childhood, while high scores suggested substantial traumatic experiences in childhood. However, it is important to note that the ACEs survey does not account for the number of such experiences, for other traumatic experiences or stressors outside of the household, or for protective factors the child may have had during childhood (American Society for the Positive Care of Children, 2021). Though originally used as a checklist, alpha for ACEs is reported as .77 (Bufford et al., 2017). ACEs alpha for this study was .89.

### ***Brief Resiliency Scale***

The Brief Resiliency Scale (BRS; Smith et al., 2008) is a 6-item self-report measure assessing perceived ability to recover from stressful events. This study presented this measure (see Appendix G) to assess if resiliency correlates with outcomes of quarantine. The BRS asked participants to rate each item on a Likert Scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Items 2, 4, and 6 were reverse coded and are rated on a scale of 1 (*strongly agree*) to 5 (*strongly disagree*). Mean item scores were reported and may range from 1 to 5. Low scores indicated lower levels of resilience while higher scores indicated greater resilience in participants. Smith et al., reported an alpha of .79 (Fung, 2020). This study’s alpha level was .72.

### ***Covid-19 Pandemic Mental Health Questionnaire***

The Covid-19 Pandemic Mental Health Questionnaire (CoPaQ; Rek et al., 2020) was recently developed to assess the personal and social impact the pandemic has caused. This 66-item survey assesses overall attitudes and behaviors regarding Covid-19 and quarantine as well as socio-demographic factors. This self-report measure is a mixture of yes/no and Likert scale items (see Appendix C). Table 1 provides a breakdown of types of questions and expected

response pattern.

The CoPaQ is very extensive and covers many important areas. However, as indicated by the asterisks in Table 1, not all questions were asked for the purpose of this study. These categories of questions have been removed from the survey because other statically supported measures for anxiety, depression, trauma, substance use, and resilience are used to assess the prevalence of those symptoms. Other items about the infection status of participants’ network, antibodies, and social media usage were also excluded. These items were removed from the survey because they do not directly affect participants’ psychological presentation or are better measured in other items. Lastly, some items were adjusted to capture the duration of Covid-19 more accurately. For example, instead of stating “for the past two weeks...” items asked “for the past year...”

**Table 1**

*Covid-19 Pandemic Mental Health Questionnaire Items and Response Alternatives*

Question type		
Socio-demographics	Number of items	Responses
Infection status	6	Yes/No
Risk and protective factors	22	Yes/No
Quarantine engagement	6	Yes/No
Employment	22	Yes/No
Mental health history	13	Yes/No
Mental health treatment	4	Yes/No
Attitudes and behaviors		
*Risk perception	38	Likert Scale
*PTSD symptoms	14	Likert Scale
*Substance use	5	Likert Scale
Coping behaviors	17	Likert Scale
*Resilience assessment	11	Likert Scale
*Rumination	13	Likert Scale

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Question type		
Stress level	18	Likert Scale
Institutional trust	8	Likert Scale
Paranoia	10	Likert Scale
*Social cohesion	6	Likert Scale

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\*- Indicates categories of questions that were not asked in the survey.

This study presented the CoPaQ to measure participation in quarantine measures. In all, 172 CoPaQ items and 10 CoPaQ subscales were used in data collection. Among those subscales, 3 separate measures were created and used to establish moderating variables. These measures included risk factors for oneself, risk factors for others in one's home, and adherence to quarantine. In the present study, alpha for risk for oneself was .85, risk for others in one's home was .83, and adherence was .79.

### ***Patient Health Questionnaire-9***

Patient Health Questionnaire- 9 (PHQ-9; Spitzer, et al., 1999) is a symptom checklist used to assess symptoms of depression as defined by the Diagnostic and Statistical Manual-Fifth Edition (American Psychiatric Association, 2013). The study presented this (see Appendix D) as one of the measures to determine presence and prevalence of depressive symptoms in participants (Spitzer, et al., 1999). For the purpose of this study, instructions for the PHQ-9 were adjusted to measure the duration of Covid-19 more accurately. This scale instructed participants to "Rate on a scale from 0 (*not at all*) to 3 (*nearly every day*) how often you have been bothered by each of the following symptoms since the onset of Covid-19?" The PHQ-9 asked participants to rate 9 items on a Likert scale from 0 (*not at all*) to 3 (*nearly every day*), as noted in the instructions. Scores ranged from 0–27. Low scores indicated depressive symptoms are not present, while high scores indicated depressive symptoms are present and disrupt daily functioning. A score of greater than or equal to 10 is commonly treated as a sign of active,

moderate depression (Spitzer et al., 1999). Spitzer et al. reported an alpha of .89 (Kroenke, et al., 2001). PHQ-9's alpha for this study was .94.

### ***Generalized Anxiety Disorder Scale-7***

Generalized Anxiety Disorder Scale-7 (GAD-7; Spitzer et al., 2006) is a symptoms checklist used to assess the severity of anxiety symptoms as defined by the DSM-5. Instructions for the GAD-7 were adjusted to, "Rate on a scale from 0 (*not at all*) to 3 (*nearly every day*) how often you have been bothered by each of the following symptoms since the onset of Covid-19?" This scale asked participants to rate 7 items on a Likert scale from 0 (*not at all*) to 3 (*nearly every day*). Scores ranged from 0–21. Low scores indicated anxious symptoms are not present, while high scores indicated symptoms of anxiety are present and may disrupt daily functioning. The study presented the GAD-7 (See Appendix E) as one of the measures to determine the presence and prevalence of anxious symptoms and behaviors in participants. A score of greater than or equal to 10 is commonly treated as a sign of active, moderate anxiety (Spitzer, et al., 2006). Spitzer et al. reported an alpha of .88. The alpha level for this study was .95.

### ***International Trauma Questionnaire***

International Trauma Questionnaire (ITQ; Cloitre et al., 2018) is an 18-item, self-report diagnostic measure of posttraumatic stress disorder (PTSD) and complex PTSD (CPTSD), as defined by the World Health Organization. For this study, the ITQ instructions were adjusted, asking participants to "indicate how much you have been bothered by Covid-19 in the past year." This study presented the ITQ (see Appendix F) as one of the measures to determine the appearance and pervasiveness of posttraumatic stress in participants. The ITQ asked participants to rate each item on a Likert Scale from 0 (*not at all*) to 4 (*extremely*). The ITQ is divided into two parts. In each half, scores ranged from 0–32, with higher scores indicating an increased number of



symptoms and severity. A score greater than or equal to 8 on the first half is commonly treated as a sign of active, moderately impairing posttraumatic stress, while a score greater than or equal to 8 on the second half typically indicates moderate disturbances in self-organization, thought to be a marker of complex trauma (Cloitre, et al., 2018). Cloitre, et al. reported an alpha of .77 (2018). The ITQ's alpha for this study was .97.

### ***The Tobacco, Alcohol, Prescription Medication and Other Substances Tool***

The Tobacco, Alcohol, Prescription Medication and Other Substances (TAPS; McNeely et al., 2016) is a 4-item screening tool that asks about the prevalence of substance use in the past year. The TAPS tool was adjusted by combining items 2 and 3, as they asked the same question but required answers from different genders. This study used the TAPS tool (see Appendix H) to assess the prevalence and severity of substance use during quarantine. The TAPS tool is on a Likert Scale ranging from 1 (*never*) to 5 (*daily or almost daily*). Scores ranged from 4–20 as lower scores suggested little to no substance abuse, while high scores suggested an increased prevalence and severity of substance use. McNeely et al., reported an alpha of .74 (2016). The TAPS tool reported alpha for this study was .79.

### **Procedure**

Participants consented electronically and answered roughly 220 items from the demographic survey, ACEs, CoPaQ, PHQ-9, GAD-7, BRS, ITQ, and TAPS tool. The survey was not timed, allowing as much time as needed to complete the questionnaires. The median time to complete the survey was 11 minutes 45 seconds. Questionnaires were completed individually.

### ***Design and Analysis***

In this study demographics, identity markers, Covid-19 risk factors, ACEs, and BRS

(resilience) were used to predict the presence of mental health symptoms during the Covid-19 pandemic. Adherence to quarantine measures, as identified in CoPaQ, was used as a moderating variable. Mental health symptoms were assessed using the PHQ-9, GAD-7, ITQ, and TAPS tool. The influence of the predictor and moderator variables was examined by means of hierarchical regression analyses.

Not all collected data were used for the analyses. These data included questions regarding state of residence, importance of faith, infection status, employment status, mental health diagnoses and treatment history, perceptions of social and government-based solidarity measures, stress due to Covid-19, coping behaviors during quarantine, and paranoia. These data were excluded from analysis because, although interesting moderating factors, they did not accurately operationalize adherence to quarantine or mental health symptomology.

Data analysis involved a series of stepwise regressions in which demographic variables were entered in Model 1, moderators of ACEs and BRS were entered, then Quarantine was entered in Model 3 to assess incremental variance of Quarantine in predicting dependent measures of psychological symptoms.

### **Chapter 3**

#### **Results**

Prior to running the hierarchical regression analyses, assumptions of independence, linearity, collinearity, normality, and equal variance were tested and met. Results showed that all measures had good internal consistency. One outlier was identified. This outlier identified as the single native Hawaiian or other pacific islander in the sample. Due to the uniqueness of this outlier, they were excluded from the following analyses. Descriptive statistics were computed for the predictor variables (ACEs, resilience, and risk factors of self and others), moderating

variables (adherence to quarantine mandates), and criterion variables (PHQ-9, GAD-7, ITQ; PTSD and CPTSD, and TAPS). Table 2 illustrates this data.

### Hierarchical Regression Results

The research hypothesis that quarantine has negatively impacted the general population's mental health was tested by means of several three-model hierarchical regressions. The effects of demographics, risk and protective factors, and quarantine on each cluster of mental health symptoms were examined. Regressions were computed to predict depression, anxiety, simple and complex PTSD symptoms, and substance abuse.

**Table 2**

*Descriptive Data for Scores on Predictor, Criterion, and Outcome Variables*

Variable	$\alpha$	<i>M</i>	<i>SD</i>	Skew	Skew/SE-skew	Kurtosis	Kurtosis/SE-kurtosis
ACEs	0.89	2.82	2.94	.87	0.10	-0.33	0.20
Risk factors	--	--	--	--	--	--	--
Self	0.85	7.36	3.55	2.27	0.10	4.89	0.20
Others	0.83	6.87	3.04	2.49	0.10	6.91	0.20
BRS	0.72	3.21	0.78	0.20	0.10	0.68	0.20
Quarantine	0.79	8.20	3.43	-0.76	0.10	-0.09	0.20
PHQ-9	0.94	11.21	8.18	0.17	0.10	-1.10	0.20
GAD-7	0.95	9.20	6.99	0.12	0.10	-1.27	0.20
ITQ	0.97	--	--	--	--	--	--
PTSD	--	4.98	5.42	0.90	0.10	-0.26	0.20
CPTSD	--	6.18	6.10	0.53	0.10	-1.08	0.20
TAPS	0.72	9.23	4.66	0.49	0.10	-0.79	0.20

*Note.* SES = socioeconomic status; ACEs = Adverse Childhood Experiences; BRS = Brief Resiliency Scale; PHQ-9 = Patient Health Questionnaire; GAD-7 = Generalized Anxiety Disorder Scale; ITQ = International Trauma Questionnaire; PTSD = posttraumatic stress disorder; CPTSD = complex posttraumatic stress disorder; TAPS = The

Tobacco, Alcohol, Prescription Medication, and Other Substances Tool.

### ***Depression***

Regarding depressive symptoms, demographic factors showed significant contribution to Model 1 and accounted for 15.00% of the variance in PHQ-9 scores ( $R^2 = 0.15$ ;  $F_{5,213} = 7.36$ ,  $p < 0.001$ ). Significant predictor variables included age ( $\beta = -0.185$ ;  $t = -2.80$ ,  $p = 0.006$ ) and SES ( $\beta = -0.292$ ;  $t = -4.50$ ,  $p < .001$ ) as negative predictors of PHQ-9 scores.

When risk and protective factors were entered in Model 2, there was a significant increase in  $R^2$  ( $R^2 = 0.37$ ,  $\Delta R^2 = .22$ ;  $F_{4,209} = 17.92$ ,  $p < .001$ ). Demographic factors lost their significance; ACEs was a positive predictor of PHQ-9 scores ( $\beta = 0.390$ ;  $t = 5.55$ ,  $p \leq .001$ ), while BRS was a negative predictor ( $\beta = 0.360$ ;  $t = -6.28$ ,  $p \leq .001$ ).

In Model 3, Covid-19 quarantine was added and predictive power increased ( $R^2 = 0.43$ ,  $\Delta R^2 = .06$ ;  $F_{1,208} = 22.52$ ,  $p < .001$ ). SES regained its significance, and again was inversely related to PHQ-9 scores (SES:  $\beta = -0.129$ ,  $t = -2.20$ ,  $p = .029$ ). Risk factors remained significant predictors (ACEs:  $\beta = 0.367$ ,  $t = 5.47$ ,  $p < .001$ ; BRS:  $\beta = -0.363$ ,  $t = -6.65$ ,  $p \leq .001$ ). Quarantine became a significant predictor of PHQ-9 scores ( $\beta = 0.257$ ,  $t = 4.75$ ,  $p \leq .001$ ). Together, these five predictors accounted for 43.00% of the variance. Of these predictors, ACEs had the highest effect size ( $\beta = -0.367$ ), followed by BRS ( $\beta = 0.363$ ), then quarantine ( $\beta = 0.257$ ), and SES ( $\beta = -0.129$ ). The effect size for quarantine alone was small, while together demographic factors, moderators and quarantine had a large effect on depression scores. These results are detailed in Table 3.

### ***Anxiety***

Regarding anxiety symptoms, demographic factors showed significant contribution to

Model 1 and accounted for 14.00% of the variance in GAD-7 scores ( $R^2 = 0.14$ ;  $F_{5,213} = 6.81$ ,  $p < .001$ ). Significant predictor variable included SES ( $\beta = -0.253$ ;  $t = -3.87$ ,  $p \leq .001$ ) and age ( $\beta = -0.204$ ;  $t = -3.07$ ,  $p = .002$ ) as negative predictors of GAD-7 scores, and ethnicity ( $\beta = 0.140$ ;  $t = 2.12$ ,  $p = .036$ ) as a positive predictor.

When risk and protective factors were entered in Model 2, there was a significant increase in  $R^2$  ( $R^2 = 0.33$ ,  $\Delta R^2 = 0.19$ ;  $F_{4,209} = 14.52$ ,  $p < .001$ ), accounting for an additional 19.00% of variance. Age and SES lost significance, while ethnicity maintained its significance ( $\beta = 0.120$ ;  $t = 2.02$ ,  $p = .045$ ); ACEs was a positive predictor of GAD-7 scores ( $\beta = 0.328$ ;  $t = 4.52$ ,  $p \leq .001$ ), while BRS was a negative predictor ( $\beta = -0.356$ ;  $t = -6.02$ ,  $p \leq .001$ ).

In Model 3, Covid-19 quarantine was added and predictive power increased ( $R^2 = 0.39$ ,  $\Delta R^2 = .06$ ;  $F_{1,208} = 20.96$ ,  $p < .001$ ). Age regained significance ( $\beta = -0.138$ ;  $t = -2.29$ ,  $p = .023$ ), and again was inversely related to GAD-7 scores. Ethnicity lost its significance. Risk factors remained significant predictors (ACEs:  $\beta = 0.304$ ,  $t = 4.38$ ,  $p \leq .001$ ; BRS:  $\beta = -0.359$ ,  $t = -6.36$ ,  $p \leq .001$ ), and quarantine became a positive predictor of GAD-7 scores ( $\beta = 0.257$ ;  $t = 4.58$ ,  $p \leq .001$ ). Together, these five predictor variables accounted for 39.00% of the variance. Of these predictors, BRS had the highest effect size ( $\beta = -0.359$ ), followed by ACEs ( $\beta = 0.304$ ), then quarantine ( $\beta = 0.257$ ), and age ( $\beta = -0.138$ ). Detailed results are seen in Table 4.

**Table 3**

*Predicting Depressive Symptoms (Patient Health Questionnaire- 9) Through Hierarchical Regression of Demographic Variables, ACEs, BRS, and Risk Factors for Oneself and Others*

Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Model 1	7.36	5, 213	<.001	0.38	0.15	0.15			

Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Age							-0.185	-2.80	0.006
Gender							0.089	1.39	0.166
Ethnicity							0.117	1.79	0.076
SES							-0.292	-4.50	<.001
Covid-19 loss							-0.010	-0.15	0.883
Model 2	17.92	4, 209	<.001	0.60	0.37	0.22			
Age							-0.066	-1.09	0.278
Gender							0.052	0.94	0.348
Ethnicity							0.096	1.66	0.099
SES							-0.119	-1.93	0.055
Covid-19 loss							-0.031	-0.55	0.581
Risk to self							-0.089	-1.02	0.310
Risk to other							-0.123	-1.45	0.149
ACEs							0.390	5.55	<.001
BRS							-0.360	-6.28	<.001
Model 3	22.52	1, 209	<.001	0.65	0.43	0.06			
Age							-0.107	-1.84	0.068
Gender							0.029	0.54	0.593
Ethnicity							0.086	1.56	0.120
SES							-0.129	-2.20	0.029
Covid-19 loss							0.015	0.28	0.782
Risk to self							-0.064	-0.77	0.442
Risk to other							-0.142	-1.75	0.081
ACEs							0.367	5.47	<.001
BRS							-0.363	-6.65	<.001
Quarantine							0.257	4.75	<.001

Note. *N* = 595; SES = socioeconomic status; ACEs = Adverse Childhood Experiences; BRS = Brief Resiliency Scale.

**Table 4**

*Predicting Anxiety Symptoms (Generalized Anxiety Disorder Scale-7) Through Hierarchical Regression of Demographic Variables, ACEs, BRS, and Risk Factors for Oneself and Others*

Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Model 1	6.81	5, 213	<.001	0.37	0.14	0.14			
Age							-0.204	-3.07	0.002
Gender							0.102	1.59	0.113
Ethnicity							0.140	2.12	0.036
SES							-0.253	-3.87	<.001
Covid-19 loss							-0.009	-0.15	0.885
Model 2	14.52	4, 209	<.001	0.57	0.33	0.19			
Age							-0.097	-1.55	0.122
Gender							0.068	1.18	0.238
Ethnicity							0.120	2.02	0.045
SES							-0.093	-1.46	0.146
Covid-19 loss							-0.030	-0.51	0.609
Risk to self							-0.049	-0.54	0.588
Risk to other							-0.107	-1.23	0.221
ACEs							0.328	4.52	<.001
BRS							-0.356	-6.02	<.001
Model 3	20.96	1, 208	<.001	0.62	0.39	0.06			
Age							-0.138	-2.29	0.023
Gender							0.044	0.80	0.425
Ethnicity							0.110	1.94	0.054
SES							-0.103	-1.69	0.092
Covid-19 loss							0.016	0.29	0.772
Risk to self							-0.024	-0.27	0.780
Risk to other							-0.126	-1.51	0.133
ACEs							0.304	4.38	<.001
BRS							-0.359	-6.36	<.001
Quarantine							0.257	4.58	<.001

*Note.* *N* = 595; SES = socioeconomic status; ACEs = Adverse Childhood Experiences; BRS = Brief Resiliency Scale.

**Posttraumatic Stress**

As depicted in Table 5, the effects of demographics, risk and protective factors, and quarantine on PTSD symptoms were examined. In Model 1, demographic factors contributed significantly and made up 10.00% of variance in PTSD symptoms, as identified in the ITQ ( $R^2 = 0.10$ ;  $F_{5,213} = 4.56$ ,  $p < .001$ ). Significant predictor variables included SES ( $\beta = -0.212$ ;  $t = -3.18$ ,  $p = .002$ ) and age ( $\beta = -0.214$ ;  $t = -3.14$ ,  $p = .002$ ) as negative predictors of PTSD scores.

There was a significant increase in  $R^2$  when risk and protective factors were added in Model 2 ( $R^2 = 0.29$ ,  $\Delta R^2 = .19$ ;  $F_{4,209} = 14.27$ ,  $p < .001$ ), accounting for an additional 19.00% of the variance in PTSD scores. Demographic variables lost their significance; ACEs ( $\beta = 0.403$ ;  $t = 5.42$ ,  $p \leq .001$ ) was a positive predictor of PTSD scores, while BRS ( $\beta = -0.313$ ;  $t = -5.16$ ,  $p \leq .001$ ) and risk factors for oneself ( $\beta = -0.209$ ;  $t = -2.27$ ,  $p = .024$ ) were negative predictors.

**Table 5**

*Predicting Posttraumatic Stress Symptoms (International Trauma Questionnaire; Posttraumatic Stress Disorder) Through Hierarchical Regression of Demographic Variables, ACEs, BRS, and Risk Factors for Oneself and Others*

Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Model 1	4.56	5, 213	<.001	0.31	0.10	0.10			
Age							-0.214	-3.14	0.002
Gender							0.048	0.73	0.469
Ethnicity							0.041	0.60	0.546
SES							-0.212	-3.18	0.002
Covid-19 loss							0.055	0.83	0.408
Model 2	14.27	4, 209	<.001	0.54	0.29	0.19			
Age							-0.080	-1.26	0.210
Gender							0.018	0.31	0.754



Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Ethnicity							0.033	0.53	0.594
SES							-0.037	-0.57	0.568
Covid-19 loss							-0.036	0.60	0.547
Risk to self							-0.209	-2.27	0.024
Risk to other							0.034	0.38	0.707
ACEs							0.403	5.42	<.001
BRS							-0.313	-5.16	<.001
Model 3	28.46	1, 208	<.001	0.61	0.38	0.09			
Age							-0.129	-2.12	0.035
Gender							-0.010	-0.17	0.863
Ethnicity							0.021	0.37	0.715
SES							-0.049	-0.81	0.424
Covid-19 loss							0.090	1.58	0.115
Risk to self							-0.180	-2.08	0.039
Risk to other							0.012	0.14	0.891
ACEs							0.376	5.36	<.001
BRS							-0.316	-5.55	<.001
Quarantine							0.302	5.34	<.001

Note. *N* = 595; SES = socioeconomic status; ACEs = Adverse Childhood Experiences; BRS = Brief Resiliency Scale.

In Model 3, Covid-19 quarantine was added and predictive power increased ( $R^2 = 0.38$ ,  $\Delta R^2 = .09$ ;  $F_{1,208} = 28.46$ ,  $p < .001$ ). Age and risk factors regained significance as inversely related predictors (age:  $\beta = -0.129$ ,  $t = -2.12$ ,  $p = .035$ ; BRS:  $\beta = -0.316$ ,  $t = -5.55$ ,  $p \leq .001$ ; Risk to self:  $\beta = -0.180$ ,  $t = -2.08$ ,  $p = .039$ ), while ACEs (ACEs:  $\beta = 0.376$ ,  $t = 5.36$ ,  $p \leq .001$ ) remained a positive predictor. Quarantine became a positive predictor of PTSD scores ( $\beta = 0.302$ ;  $t = 5.34$ ,  $p \leq .001$ ). Together, these five variables accounted for 38.00% of the total variance. Of these predictors, ACEs had the highest effect size ( $\beta = 0.376$ ), followed by BRS ( $\beta = -0.316$ ), then quarantine ( $\beta = 0.302$ ), risk to oneself ( $\beta = -0.180$ ), and age ( $\beta = -0.129$ ).

### ***Complex Posttraumatic Stress***

Regarding complex trauma symptoms as identified in the ITQ, demographic factors displayed significant contribution to Model 1 and accounted for 13.00% of the variation in CPTSD scores ( $R^2 = 0.13$ ;  $F_{5,213} = 6.06$ ,  $p < .001$ ). Significant predictor variables included SES ( $\beta = -0.241$ ;  $t = -3.67$ ,  $p \leq .001$ ) and age ( $\beta = -0.187$ ;  $t = -2.79$ ,  $p = .006$ ) as negative predictors.

When risk and protective factors were added in Model 2, there was a significant increase in  $R^2$  ( $R^2 = 0.34$ ,  $\Delta R^2 = .21$ ;  $F_{4,209} = 16.60$ ,  $p < .001$ ), accounting for an additional 21.00% of the variance of CPTSD scores. Demographic factors lost their significance; ACEs ( $\beta = 0.313$ ;  $t = 4.35$ ,  $p \leq 0.001$ ) became a positive predictor of CPTSD scores, while BRS ( $\beta = -0.392$ ;  $t = -6.68$ ,  $p \leq .001$ ) was a negative predictor.

Covid-19 quarantine was added in Model 3 and predictive power increased ( $R^2 = 0.40$ ,  $\Delta R^2 = .05$ ;  $F_{1,208} = 18.67$ ,  $p < .001$ ). Risk and protective factors remained significant (ACEs:  $\beta = 0.291$ ,  $t = 4.20$ ,  $p \leq .001$ ; BRS:  $\beta = -0.395$ ,  $t = -7.01$ ,  $p \leq .001$ ). Quarantine became a positive predictor of CPTSD scores ( $\beta = 0.242$ ;  $t = 4.32$ ,  $p \leq .001$ ). These predictor variables accounted for 49.00% of the total variance in CPTSD scores. Of these predictors, BRS had the highest effect size ( $\beta = -0.395$ ), followed by ACEs ( $\beta = 0.291$ ), and quarantine ( $\beta = 0.242$ ). These results are detailed in Table 6.

**Table 6**

*Predicting Complex Posttraumatic Stress Symptoms (International Trauma Questionnaire; Complex Posttraumatic Stress Disorder) Through Hierarchical Regression of Demographic Variables, ACEs, BRS, and Risk Factors for Oneself and Others*

Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Model 1	6.06	5, 213	<.001	0.35	0.13	0.13			

Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Age							-0.187	-2.79	0.006
Gender							0.123	1.90	0.059
Ethnicity							0.100	1.48	0.142
SES							-0.241	-3.67	<.001
Covid-19 loss							-0.011	-0.17	0.865
Model 2	16.60	9,209	<.001	0.58	0.34	0.21			
Age							-0.074	-1.20	0.233
Gender							0.089	1.56	0.121
Ethnicity							0.084	1.42	0.157
SES							-0.066	-1.04	0.298
Covid-19 loss							-0.033	-0.56	0.574
Risk to self							-0.015	-0.17	0.862
Risk to other							-0.068	-0.78	0.436
ACEs							0.313	4.35	<.001
BRS							-0.392	-6.68	<.001
Model 3	18.67	10,208	<.001	0.63	0.39	0.06			
Age							-0.113	-1.88	0.062
Gender							0.066	1.21	0.230
Ethnicity							0.075	1.31	0.190
SES							-0.075	-1.24	0.216
Covid-19 loss							0.011	0.20	0.845
Risk to self							0.008	0.09	0.928
Risk to other							-0.086	-1.03	0.306
ACEs							0.291	4.20	<.001
BRS							-0.395	-7.01	<.001
Quarantine							0.242	4.32	<.001

Note. *N* = 595; SES = socioeconomic status; ACEs = Adverse Childhood Experiences; BRS = Brief Resiliency Scale.

**Substance Use**

As depicted in Table 7, the effects of demographics, risk and protective factors, and quarantine have on substance use were examined. In Model 1, demographic factors contributed significantly, accounting for 15.00% of the variance in substance use ( $R^2 = 0.15$ ;  $F_{5,213} = 7.40$ ,  $p$

< .001). Significant predictors included SES ( $\beta = -0.269; t = -4.15, p \leq .001$ ) and age ( $\beta = -0.229; t = -3.47, p \leq .001$ ) as negative predictors of TAPS scores.

In Model 2 risk and protective factors were entered and there was a significant increase in  $R^2$  ( $R^2 = 0.19, \Delta R^2 = .04; F_{4,209} = 2.83, p = .026$ ), making up an additional 4.00% of the variance in TAPS scores. Demographic factors maintained their significance (SES:  $\beta = -0.197, t = -2.82, p = .005$ ; age:  $\beta = -0.193, t = -2.82, p = .005$ ). ACEs ( $\beta = 0.253; t = 3.19, p = .002$ ) became a positive predictor of TAPS scores.

**Table 7**

*Predicting Substance Use (Tobacco, Alcohol, Prescription Medication and Other Substances) Through Hierarchical Regression of Demographic Variables, ACEs, BRS, and Risk Factors for Oneself and Others*

Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Model 1	7.40	5, 213	<.001	0.39	0.15	0.15			
Age							-0.229	-3.47	<.001
Gender							-0.077	-1.21	0.229
Ethnicity							-0.076	-1.16	0.246
SES							-0.269	-4.15	<.001
Covid-19 loss							0.004	0.06	0.953
Model 2	2.83	4, 209	0.026	0.44	0.19	0.04			
Age							-0.193	-2.82	0.005
Gender							-0.080	-1.28	0.203
Ethnicity							-0.077	-1.18	0.239
SES							-0.197	-2.82	0.005
Covid-19 loss							-0.001	-0.02	0.987
Risk to self							0.005	0.05	0.959
Risk to other							-0.110	-1.15	0.251
ACEs							0.253	3.19	0.002
BRS							-0.007	-0.15	0.917

Variable	<i>F</i>	<i>df</i>	<i>sig</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\beta$	<i>t</i>	Sig.
Model 3	14.69	1, 208	<.001	0.50	0.25	0.05			
Age							-0.231	-3.45	<.001
Gender							-0.103	-1.68	0.095
Ethnicity							-0.086	-1.36	0.174
SES							-0.206	-3.05	0.003
Covid-19 loss							0.042	0.67	0.505
Risk to self							0.028	0.29	0.769
Risk to other							-0.128	-1.38	0.171
ACEs							0.232	3.01	0.003
BRS							-0.009	-0.15	0.880
Quarantine							0.238	3.83	<.001

Note. N = 595; SES = socioeconomic status; ACEs = Adverse Childhood Experiences; BRS = Brief Resiliency Scale.

Model 3 added Covid-19 quarantine, and predictive power increased ( $R^2 = 0.25$ ,  $\Delta R^2 = .05$ ;  $F_{1,208} = 14.69$ ,  $p < .001$ ). Demographic and risk factors maintained their significance (SES:  $\beta = -0.206$ ,  $t = -3.05$ ,  $p = .003$ ; age:  $\beta = -0.231$ ,  $t = -3.45$ ,  $p \leq .001$ ; ACEs:  $\beta = 0.232$ ,  $t = 3.01$ ,  $p = .003$ ). Quarantine became a positive predictor ( $\beta = 0.238$ ;  $t = 3.83$ ,  $p \leq .001$ ). These four variables accounted for 24.00% of the variance in TAPS scores. Of these predictors, quarantine was ordinally highest ( $\beta = -0.238$ ), followed by ACEs ( $\beta = 0.232$ ), age ( $\beta = 0.231$ ), and SES ( $\beta = -0.206$ ).

In all, risk and protective factors were the biggest predictors of adverse mental health effects during Covid-19. Demographic factors such as age and socioeconomic status were significant predictors and inversely related to the measured symptoms. Lastly, quarantine was a significant moderating factor that added significant predictive variance with small effect sizes for all dependent measures of mental health symptoms.

#### Chapter 4

### Discussion

It was the researcher's hypothesis that engagement in quarantine measures during Covid-19 resulted in adverse mental health effects in United States adults. Results suggested that although quarantine had a significant effect as a moderating variable, and accounted for some of the variance, historical events were bigger predictors of these adverse mental health effects. The effect size of quarantine was small ( $\Delta R^2$  ranged from .05 to .09). These results were consistent across all criterion variables.

The trend stated above was seen when predicting symptoms of depression, anxiety, trauma, and substance use, which were identified in their respective instruments. The data indicated that an individual's level of resiliency was the strongest predictor of anxiety and CPTSD symptoms. Level of resiliency was also a strong predictor in symptoms of depression and PTSD, although ACEs scores were stronger for both. The analyses showed an inverse relationship between resiliency and the above mental health symptoms; the stronger one's ability to cope with and recover from stressful situations, the less likely they were to experience adverse mental health effects. These findings were consistent with and support resiliency research (e.g., Kira, 2021). An interesting finding in this study was that resiliency was not a predictor of substance use. Prior studies found acquired resiliency is a better predictor of substance use recovery, instead of innate resiliency (Yamashita, 2021; Hirano, 2010). Current literature used the BRS and it is unclear what type of resiliency the BRS measures; however, the subcategorization may be important for interpretation of this study's results.

The analyses also identified ACEs as a strong predictor of all adverse mental health effects measured in this study. This study found a positive relationship between ACEs and each indicator of mental health symptoms. This suggested that individuals with high amounts of

distressful experiences in their childhood were more likely to experience some sort of mental health symptomology, specifically during Covid-19. ACEs scores were the strongest predictor of depression and PTSD symptomology, and the second strongest predictor of anxiety, and CPTSD symptoms, and substance use. This study's findings supported the extensive existing literature about effects of ACEs, and how higher ACE scores are correlated with mental and physical health complications (e.g., Oh et al., 2018; Petruccelli et al., 2019).

Although pre-existing events and characterological traits (ACEs and resiliency) accounted for most of the variance in each outcome measure, the data supported the researcher's hypothesis that quarantine had a significant adverse effect on mental health symptoms across clusters. The data found quarantine as the strongest predictor of substance use, and the third strongest predictor of depression, anxiety, and both simple and complex trauma symptoms. The relationship between quarantine and mental health symptoms was positive, indicating that quarantine is a significant moderating factor that may exacerbate the experience of the symptoms stated above. These findings supported and added to the expanding literature about the adverse mental health effects of Covid-19 (Agha, 2020; Clair et al., 2021; Lee et al., 2021; Mousavi et al., 2020; Shader, 2020; Thakur & Jain, 2020).

The data also indicated demographic information such as age, socioeconomic status, and Covid-19 risk factors as predictors of mental health symptoms. Age was a significant predictor of anxiety, PTSD symptoms, and substance use. Other findings about demographic information indicated that socioeconomic status was a predictor of depressive symptoms and substance use, and an individual's Covid-19 risk factors were predictors of PTSD symptoms.

Results from this study should be interpreted with its limitations in mind. Limitations for this study included unstandardized language in instruments. As discussed in the methodology,

many of the questionnaire's instructions were altered to better measure the entirety of Covid-19 and quarantine. Additionally, the researcher used "I do not feel well represented, I identify as \_\_\_\_," instead of "other" as an option for gender and ethnicity in the demographic survey. These deviations from standardization and normal data collection may have altered effects of these measurements, thus altering the results of this study. Other limitations may include access to the survey. The survey was distributed with respect to social distancing standards and accessed only online. This may have excluded transient and other populations with limited access to computer or the internet. Lastly, this study did not assess the amount and kind of subsidies participants received, if at all, during the pandemic.

The advantage this study has over other emerging research about the effects Covid-19 has on mental health, is that it differentiated the concept of quarantine from the overall traumatic stress of the pandemic. By measuring compliance with quarantine mandates, such as social distancing, masking, working remotely, and limiting the number of social contacts, this study was able to assess how adherence to such measures exacerbated stress and mental health conditions during Covid-19. The findings of this study indicated no severe diagnostic concerns as a result of quarantine per se. However, it did support the hypothesis that quarantine exacerbated mental health symptoms, especially in adults who have had adverse childhood experiences and less ability to cope with and recover from stressful experiences. Much like the effects of a traumatic experience, the traumatic stress Covid-19 induced on many populations will likely continue after the pandemic subsides (Raker et al., 2020). The findings of this study are important because they examined contextual factors during Covid-19 and confirmed quarantine as a significant moderating factor.

This study also had several implications for future research and clinical practice. Due to



the significant predictor of resiliency, future research may focus on best practices for resiliency building, especially in populations with adverse childhood experiences or communities disproportionately impacted by Covid-19. Clinically, this may include increasing access to mental health care through group therapy, practicing social engagement, increasing distress tolerance, and advocating for better subsidies for these populations. Furthermore, because the psychological effects of Covid-19 may linger after the pandemic, continued research and clinical practice may include early intervention in these populations to assist in altering the cycle of intergenerational trauma. Lastly, future research may examine the prevalence of these symptomologies in the coming years and determine if there is an increase in certain symptoms, thus supporting professional opinion of Covid-19's lingering effects.

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## Appendix A

### Informed Consent and Demographic Questionnaire

#### Informed Consent

You are invited to participate in a research survey to assess the effects participating in quarantine measures has on mood. During this study you will be asked to answer a few demographic questions, followed by a questionnaire about your experiences. The amount of time required for your participation will be approximately 25 minutes.

There are no known risks associated with this research project. Some participants may experience low mood as reflection on their experience of quarantine is required. There are no direct benefits for your participation in this research.

Your participation in this survey is entirely voluntary, and you may choose not to participate in or withdraw your consent at any time. You will not be penalized in any way should you choose not to participate or withdraw.

Because this study is completely voluntary and does not require intervention or treatment of any kind. However, if you begin to feel suicidal or other mental health emergencies arise, please call the suicide hotline number at 800-273-8255.

We will do everything we can to protect your privacy. As part of this effort, please do not include any personally identifying information in your responses. Only aggregated responses will be reported. Therefore, your identity will not be revealed in any publication that may result from this study.

If you have any questions or concerns regarding this study please contact Shelby Rubino at [rubino19@georgefox.edu](mailto:rubino19@georgefox.edu) or Dr. Roger Bufford at [rbufford@georgefox.edu](mailto:rbufford@georgefox.edu).

## Demographic Questions

1. Age:

---

2. Gender:

- a. male
- b. female
- c. transgender male
- d. transgender female
- e. non-binary
- f. I am not well represented, I identify as \_\_\_\_\_.

3. Ethnicity:

- a. American Indian or Alaskan Native
- b. Asian
- c. Black or African American
- d. Hispanic or Latino
- e. Native Hawaiian or Other Pacific Islander
- f. White
- g. I am not well represented, I identify as \_\_\_\_\_.

4. State of residence during COVID-19:

---



5. During COVID-19 did you suffer from significant loss?

a. yes

b. no

5.1 If yes, what kind of loss?

a. job

b. family member

c. other: \_\_\_\_\_

6. Level of living comfort:

a. I have a difficult time paying my bills, obtaining food, and I worry about losing my residence.

b. I struggle to pay my bills and obtain food, but I do not worry about losing my residence.

c. I have no trouble paying my bills obtaining food and keeping my residence.

7. How important are your religious beliefs and practices?

No importance;  
have no religion

Extremely important; religious  
faith is the center of my life

1      2      3      4      5      6      7

**Appendix B****Adverse Childhood Experiences Questionnaire**

## Adverse Childhood Experience Questionnaire

This Questionnaire will be asking you some questions about events that happened during your childhood; specifically, the first 18 years of your life.

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household often swear at you, insult you, put you down, or humiliate you? Or act in a way that made you afraid that you might be physically hurt?

a. yes

b. no

2. Did a parent or other adult in the household often push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?

a. yes

b. no

3. Did an adult or person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way? Or attempt to actually have oral, anal, or vaginal intercourse with you?

a. yes

b. no

4. Did you often feel that no one in your family loved you or thought you were important or special? Or your family didn't look out for each other, feel close to each other, or support each other?

a. yes

b. no

5. Did you often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? Or your parents were too drunk or high to take care of you or take you to the doctor if you needed it?

a. yes

b. no

6. Were you parents ever separated or divorced?

a. yes

b. no

7. Were any of your parents or other adult caregivers often pushed, grabbed, slapped, or had something thrown at them? Or sometimes or often kicked, bitten, hit with a fist, or hit with something hard? Or ever repeatedly hit over at least a few minutes or threatened with a gun or knife?

a. yes

b. no

8. Did you live with anyone who was a problem drinker or alcoholic, or used street drugs?

a. yes

b. no

9. Was a household member depressed or mentally ill, or did a household member attempt suicide?

a. yes

b. no

10. Did a household member go to prison?

a. yes

b. no

**Appendix C****COVID-19 Pandemic Mental Health Questionnaire**

With the following questions we would like to learn about the personal and social consequences of the COVID-19 pandemic.

1. Have you suffered from COVID-19 symptoms such as fever, dry cough, breathing problems, sore throat, loss of smell/taste, headaches or diarrhea?

- a. yes
- b. no
- c. don't know

2. Have you been tested positive for SARS-CoV-2?

- a. yes
- b. no
- c. don't know

3. Has someone close to you been infected with COVID-19?

- a. yes
- b. no
- c. don't know

4. Has a person close to you died in the course of a COVID-19 disease?

- a. yes
- b. no

c. don't know

5. Please indicate which of the following risk factors for a severe course of COVID-19 apply to you.

a. Older than 60 years

i. yes ii. no

b. Cardiovascular disease

i. yes ii. no

c. Diabetes

i. yes ii. no

d. Immunodeficiency, or taking medication that suppresses the immune system

i. yes ii. no

e. Chronic disease of the respiratory system (e.g. asthma, chronic bronchitis)

i. yes ii. no

f. Chronic liver disease

i. yes ii. no

g. Chronic kidney disease

i. yes ii. no

h. Acute cancer

i. yes ii. no

i. Cancer during past 5 years

i. yes ii. no

j. Long-standing heavy cigarette consumption

i. yes ii. no

6. Please indicate which of the following risk factors for a severe course of COVID-19 apply to people living with you in a household.

a. Older than 60 years

i. yes ii. no

b. Cardiovascular disease

i. yes ii. no

c. Diabetes

i. yes ii. no

d. Immunodeficiency, or taking medication that suppresses the immune system

i. yes ii. no

e. Chronic disease of the respiratory system (e.g. asthma, chronic bronchitis)

i. yes ii. no

f. Chronic liver disease

i. yes ii. no

g. Chronic kidney disease

i. yes ii. no

h. Acute cancer

i. yes ii. no

i. Cancer during past 5 years

i. yes ii. no

j. Long-standing heavy cigarette consumption

i. yes ii. no

7. Please indicate whether you are currently in quarantine.

a. yes

b. no

8. Please indicate the number of days you have been in quarantine.

---

9. Since the onset of COVID-19, please indicate whether you were under a state-imposed curfew.

a. yes

b. no

10. Please indicate how many days you were under the state-imposed curfew.

---

11. Please indicate if you are currently working from home.

a. yes

b. no

12. Please indicate how long you have been working remotely from home.

---



13. Please indicate whether you are engaged in an essential activity for the maintenance of critical infrastructure in accordance with the emergency plan.

a. doctors

i. yes ii. no

b. nurses

i. yes ii. no

c. clinical psychologists

i. yes ii. no

d. public safety and national security guards

i. yes ii. no

e. staff or local and national government

i. yes ii. no

f. supermarket vendors

i. yes ii. no

g. bakers

i. yes ii. no

h. professional cleaners

i. yes ii. no

i. other: \_\_\_\_\_

14. Please indicate your employment status

a. employed

a-1. *if yes:*

- i. full-time employed
  - ii. part-time employed
  - iii. self-employed
  - iv. other: \_\_\_\_\_
- b. not employed
- c. student
- d. retired
- e. other: \_\_\_\_\_

15. Please indicate your health insurance coverage.

- a. none
- b. partial coverage
- c. full coverage (without psychiatric/psychotherapeutic care)
- d. full coverage (with psychiatric/psychotherapeutic care)

16. Please indicate whether you receive welfare benefits.

- a. yes
- b. no

17. Have you ever been diagnosed by a doctor or therapist with each of the following?

- a. depression
  - i. yes    ii. no
- b. mania/bipolar disorder

i. yes ii. no

c. psychotic disorders (including schizophrenia)

i. yes ii. no

d. anxiety disorder

i. yes ii. no

e. posttraumatic stress disorder

i. yes ii. no

f. eating disorder

i. yes ii. no

g. compulsive disorders (OCD)

i. yes ii. no

h. substance abuse or addiction disorder

i. yes ii. no

i. attention disorder (ADHD)

i. yes ii. no

j. somatoform disorder

i. yes ii. no

k. personality disorder

i. yes ii. no

l. autism spectrum disorder

i. yes ii. no

m. cognitive disorder/dementia

i. yes ii. no

18. Are you currently receiving psychotherapy?

- a. yes
- b. no
- c. I have never been in therapy

18A. *if no*: Was your psychotherapy suspended due to the COVID-19 pandemic?

- a. yes
- b. no

18B. *if yes*: Does the psychotherapy currently take place in face-to-face contact?

- a. yes
- b. no

18B-1. *if no*: How satisfied are you with the psychotherapeutic treatment via telephone or video platforms compared to face-to-face contact?

0- Not at all            1            2            3            4- Very much

How necessary and useful do you consider the following behavior since the COVID-19 pandemic?

19. Hygiene measures, such as

- a. keeping at least 1.5 meters distance from other people

0- Not at all            1            2            3            4- Very much

- b. coughing or sneezing into the crook of your arm or into a handkerchief

0- Not at all	1	2	3	4- Very much
c. not touching mouth, eyes or nose with hands				
0- Not at all	1	2	3	4- Very much
d. regular washing of hands				
0- Not at all	1	2	3	4- Very much
e. washing hands extensively (for at least 30 seconds)				
0- Not at all	1	2	3	4- Very much
f. increased disinfection of hands and objects				
0- Not at all	1	2	3	4- Very much

20. Reduction of social contacts, e.g.

a. cancelling private meetings and family visits				
0- Not at all	1	2	3	4- Very much
b. cancelling trips to other cities				
0- Not at all	1	2	3	4- Very much
c. avoiding visits to canteens and restaurants				
0- Not at all	1	2	3	4- Very much
d. avoiding touching when greeting or saying goodbye to other people				
0- Not at all	1	2	3	4- Very much
e. moving you work to home office				
0- Not at all	1	2	3	4- Very much

21. Build up stocks, such as

a. soap, detergent, cleaning products, washing powder, etc.

0- Not at all            1            2            3            4- Very much

b. food (vegetable, lentils, rice, pasta...)

0- Not at all            1            2            3            4- Very much

c. water (20 liters per person)

0- Not at all            1            2            3            4- Very much

d. toilet paper

0- Not at all            1            2            3            4- Very much

e. cash

0- Not at all            1            2            3            4- Very much

22. Political measures, such as

a. temporary closures of kindergartens, schools, and universities

0- Not at all            1            2            3            4- Very much

b. temporary border closures

0- Not at all            1            2            3            4- Very much

c. temporary closure of playgrounds

0- Not at all            1            2            3            4- Very much

d. temporary closures of bars, pubs, theatres, cinemas, etc.

0- Not at all            1            2            3            4- Very much

e. temporary curfews

0- Not at all            1            2            3            4- Very much

23. Solidarity-based behaviors, such as

a. donating blood

0- Not at all            1            2            3            4- Very much

b. supporting people at risk, such as shopping for them or staying at home to protect people at risk

0- Not at all            1            2            3            4- Very much

c. supporting people who are experiencing existential hardship due to the current situation

0- Not at all            1            2            3            4- Very much

d. offering help to close friends and family members

0- Not at all            1            2            3            4- Very much

e. getting involved in neighborhood assistance

0- Not at all            1            2            3            4- Very much

24. To what extent have you adhered to the following COVID-19 pandemic measures over the past year?

a. hygiene measures

0- Not at all            1            2            3            4- Very much

b. reduction of social contacts

0- Not at all            1            2            3            4- Very much

c. curfews

0- Not at all            1            2            3            4- Very much

The following is a list of statements that deal with the handling and impact of the COVID-19 pandemic. Please indicate the extent to which the following statements have applied to you in the past year.

25. "Because of the COVID-19 pandemic, over the past year I have felt stressed or burdened by..."

a. the current pandemic

0- Not at all      1                      2                      3                      4- Very much

b. living in a small accommodation

0- Not at all      1                      2                      3                      4- Very much

c. being in quarantine

0- Not at all      1                      2                      3                      4- Very much

d. childcare

0- Not at all      1                      2                      3                      4- Very much

e. taking over school lessons

0- Not at all      1                      2                      3                      4- Very much

f. the curfew

0- Not at all      1                      2                      3                      4- Very much

g. being in home office

0- Not at all      1                      2                      3                      4- Very much

h. customer service

0- Not at all      1                      2                      3                      4- Very much

i. worries about my health

0- Not at all      1                      2                      3                      4- Very much

j. worries of not being able to get medical care



0- Not at all            1            2            3            4- Very much

k. worries about being sick with COVID-19 when I noticed first signs of symptoms such as fever, dry cough, breathing problems, sore throat, loss of smell/taste, headache, or diarrhea.

0- Not at all            1            2            3            4- Very much

l. increased conflicts with people close to me

0- Not at all            1            2            3            4- Very much

m. financial worries

0- Not at all            1            2            3            4- Very much

n. uncertainties regarding my job, training, place, studies, or school

0- Not at all            1            2            3            4- Very much

o. concerns for my own personal safety

0- Not at all            1            2            3            4- Very much

p. concerns for the integrity of family members of friends

0- Not at all            1            2            3            4- Very much

q. fears of what the future will bring, or that I won't be able to cope with everything.

0- Not at all            1            2            3            4- Very much

26. "Over the past year I have been able to distance myself from the stress/burden due to..."

a. worries about my health

0- Not at all            1            2            3            4- Very much

b. worries of not being able to get medical care.

0- Not at all            1            2            3            4- Very much

c. worries about being sick with COVID-19 when I noticed first signs of symptoms such as fever, dry cough, breathing problems, sore throat, loss of smell/taste, headache or diarrhea

0- Not at all            1            2            3            4- Very much

d. increased conflicts with people close to me.

0- Not at all            1            2            3            4- Very much

e. childcare

0- Not at all            1            2            3            4- Very much

f. financial worries

0- Not at all            1            2            3            4- Very much

g. uncertainties regarding my job, training place, studies or school

0- Not at all            1            2            3            4- Very much

h. concerns for my own personal integrity

0- Not at all            1            2            3            4- Very much

i. concerns for the integrity of family members or friends

0- Not at all            1            2            3            4- Very much

j. fears of what the future will bring, or that I will not be able to cope with everything

0- Not at all            1            2            3            4- Very much

27. "Over the past year I..."

a. have maintained a regular daily routine

0- Not at all            1            2            3            4- Very much

b. have planned the day as detailed as possible

- |  |   |   |   |              |
|--|---|---|---|--------------|
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| c. have integrated sports and exercise into my daily life  |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| d. have had the opportunity to retreat to a private place  |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| e. have reduced any contact with fellow human beings   |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| f. have maintained my social contacts (telephone, visits or video chats)                                       |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| g. have had more conflicts with people close to me   |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| h. have had more verbal arguments with people close to me  |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| i. have experienced becoming a victim of verbal abuse (e.g. threats, humiliation) with people close to me      |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| j. have experienced becoming a victim of physical abuse (e.g. beating, boxing, kicking) by people close to me. |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| k. have enjoyed the time together with people close to me  |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |
| l. have felt more hopeful that the corona-crisis will soon be over   |   |   |   |              |
| 0- Not at all  | 1 | 2 | 3 | 4- Very much |

m. have sought stability in faith and/or religion

0- Not at all            1            2            3            4- Very much

n. have focused on my inner strengths, resources, abilities, and talents

0- Not at all            1            2            3            4- Very much

o. have changed my attitudes about what is really important to me in life

0- Not at all            1            2            3            4- Very much

p. have acknowledged and accepted the COVID-19 pandemic as reality

0- Not at all            1            2            3            4- Very much

28. “Over the past year I...”

a. have had the feeling that the political leadership was standing up for me

0- Not at all            1            2            3            4- Very much

b. have had the feeling that the rules we now need to follow are there to make my life miserable

0- Not at all            1            2            3            4- Very much

c. have perceived democracy as an effective form of government

0- Not at all            1            2            3            4- Very much

d. have had the feeling that public institutions (e.g. police, judiciary) can be relied upon

0- Not at all            1            2            3            4- Very much

e. have worried about our economic development

0- Not at all            1            2            3            4- Very much

f. have had feeling that news and reports on the COVID-19 pandemic are being deliberately withheld

0- Not at all            1            2            3            4- Very much

g. have perceived politicians as trustworthy

0- Not at all            1            2            3            4- Very much

h. have had the feeling that false reports or untruths about the COVID-19 pandemic are being deliberately disseminated on public broadcasting (e.g. radio and television stations)

0- Not at all            1            2            3            4- Very much

i. have had the feeling that people looked at me as if I have got corona-virus

0- Not at all            1            2            3            4- Very much

j. have had the feeling that people kept a greater distance from me specifically and more than was necessary

0- Not at all            1            2            3            4- Very much

k. have had the belief that there are alternative or secret explanations for current events

0- Not at all            1            2            3            4- Very much

l. have had the belief that the virus is targeting me more than anyone else irrespective of my health

0- Not at all            1            2            3            4- Very much

m. have had the belief that there is a relation between what is happening and the production and testing of biological weapons

0- Not at all            1            2            3            4- Very much

n. have had the belief that what is happening is the effect of a struggle or competition between different superpowers.

0- Not at all            1            2            3            4- Very much

o. have had the belief that this infection serves to deliberately reduce the world population, since there are no longer enough resources for everyone

0- Not at all            1            2            3            4- Very much

p. have had the belief that the corona-virus was introduced to get people like me

0- Not at all            1            2            3            4- Very much

q. that the crisis is not real, I am caught in a bad dream and just need to wake up

0- Not at all            1            2            3            4- Very much

The following statement is used by people to describe themselves. Please indicate whether the following statement applies to you.

29. I'm convinced there's a conspiracy behind many things in the world.

a. true

b. false

**Appendix D****Patient Health Questionnaire - 9**

Rate on a scale from 0 (not at all) to 3 (nearly every day) how often you have been bothered by each of the following symptoms since the onset of COVID-19?

1. Little interest or pleasure in doing things?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

2. Feeling down, depressed, or hopeless?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

3. Trouble falling or staying asleep, or sleeping too much?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

4. Feeling tired or having little energy?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

5. Poor appetite or overeating?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

6. Feeling bad about yourself- or that you are a failure, or that you have let yourself or your family down?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

7. Trouble concentrating on things, such as work, reading, or watching TV?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

8. Moving or speaking so slowly that other people could have noticed? Or the opposite- being so fidgety or restless that you were moving around a lot more than usual?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

9. Thoughts that you would be better off dead, or of hurting yourself in some way?

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day



**Appendix E****Generalized Anxiety Disorder Questionnaire - 7**

Rate on a scale from 0 (not at all) to 3 (nearly every day) how often you have been bothered by each of the following symptoms since the onset of COVID-19?

1. Feeling nervous, anxious, or on edge

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

2. Not being able to stop or control worrying

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

3. Worrying too much about different things

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

4. Trouble relaxing

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

5. Being so restless that it's hard to sit still

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

6. Becoming easily annoyed or irritable

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

7. Feeling afraid as if something awful might happen

0-Not at all    1- Several days    2-More than half the days    3-Nearly every day

**Appendix F****International Trauma Questionnaire**

Below are a number of problems that people sometimes report in response to traumatic or stressful life events. Please read each item carefully, then select one of the numbers to indicate how much you have been bothered by COVID-19 in the past year.

1. Having upsetting dreams that replay part of the experience or are clearly related to the experience?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

2. Having powerful images or memories that sometimes come into your mind in which you feel the experience is happening again in the here and now?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

3. Avoiding internal reminders of the experience (for example, thoughts, feelings, or physical sensations)?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

4. Avoiding external reminders of the experience (for example, people, places, conversations, objects, activities, or situations)?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

5. Being “super-alert,” watchful, or on guard?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

6. Feeling jumpy or easily startled?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

In the past year have the above problems:

7. Affected your relationships or social life?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

8. Affected your work or ability to work?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

9. Affected any other important part of your life such as parenting, or school or college work, or other important activities?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

Below are problems that people who have had stressful or traumatic events sometimes experience.

The questions refer to ways you typically feel, think about yourself and relate to others. Answer

the following thinking about how true each statement is of you.

How true is this of you?

1. When I am upset, it takes me a long time to calm down.

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

2. I feel numb or emotionally shut down.

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

3. I feel like a failure.

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

4. I feel worthless.

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

5. I feel distant or cut off from people.

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

6. I find it hard to stay emotionally close to people.

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

In the past year, have the above problems in emotions, beliefs about yourself and relationships:

7. Created concern or distress about your relationship or social life?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

8. Affected your work or ability to work?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

9. Affected any other important parts of your life such as parenting, or school or college work, or other important activities?

0-Not at all    1-A little bit    2-Moderately    3-Quite a bit    4- Extremely

**Appendix G****Brief Resilience Scale (BRS)**

Please respond to each item by marking one box per question.

1. I tend to bounce back quickly after hard times.

1-Strongly Disagree   2- Disagree   3-Neutral   4-Agree   5-Strongly Agree

2. I have a hard time making it through stressful events.

5-Strongly Disagree   4- Disagree   3-Neutral   2-Agree   1-Strongly Agree

3. It does not take me a long to recover from a stressful event.

1-Strongly Disagree   2- Disagree   3-Neutral   4-Agree   5-Strongly Agree

4. It is hard for me to snap back with something bad happens.

5-Strongly Disagree   4- Disagree   3-Neutral   2-Agree   1-Strongly Agree

5. I usually come through difficult times with little trouble.

1-Strongly Disagree   2- Disagree   3-Neutral   4-Agree   5-Strongly Agree

6. I tend to take a long time to get over set-backs in my life.

5-Strongly Disagree   4- Disagree   3-Neutral   2-Agree   1-Strongly Agree

## Appendix H

### The Tobacco, Alcohol, Prescription medication, and other Substance Tool

Each of the four multiple-choice items has five possible responses to choose from.

Select your answer.

1. In the past 12 months, how often have you used any tobacco products (for example, cigarettes, e-cigarettes, cigars, pipes, or smokeless tobacco)?

1-Never    2- Less Than Monthly    3-Monthly    4-Weekly    5-Daily or Almost Daily

2. In the past 12 months, how often have you had 4 or more drinks (if you identify as female) OR 5 or more drinks (if you identify as male) containing alcohol in one day? One standard drink is about 1 small glass of wine (5 oz), 1 beer (12 oz), or 1 single shot of liquor.

1-Never    2- Less Than Monthly    3-Monthly    4-Weekly    5-Daily or Almost Daily

3. In the past 12 months, how often have you used any drugs including marijuana, cocaine, or crack, heroin, methamphetamine (crystal meth), hallucinogens, ecstasy/MDMA?

1-Never    2- Less Than Monthly    3-Monthly    4-Weekly    5-Daily or Almost Daily

4. In the past 12 months, how often have you used any prescription medications just for the feeling, more than prescribed, or that were not prescribed for you? Prescription medications that may be used this way include: Opiate pain relievers (OxyContin, Vicodin, Percocet, Methadone), medications for anxiety or sleeping (Xanax, Ativan, Klonopin), medications for ADHD (Adderall or Ritalin).

1-Never    2- Less Than Monthly    3-Monthly    4-Weekly    5-Daily or Almost Daily