

**RESEARCH ARTICLE**

## **COVID-19 Lockdown Worries about the Virus and Finances**

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**Abstract**

Worries about getting the virus and worrying about finances have been associated with negative mood states including anxiety and depression during COVID-19 lockdowns. In this Survey Monkey study conducted during a COVID-19 lockdown (N= 260 respondents), 88% reported worrying about getting the virus and 72% worrying about their finances. Correlation analyses suggested that worries about the virus and about finances were related to each other and were, in turn, positively related to scores on scales measuring COVID-related stress, negative mood states including anxiety and depression, fatigue, sleep disturbances, and posttraumatic stress symptoms. These problems were common to both types of worries as was the lack of health activities including exercise, self-care, and touching partners and children. Some findings were unique to each of the worries. Worrying about the virus was related to being active on social media, connecting with friends, and housekeeping and paperwork. Worrying about finances was correlated with caregiving, unemployment, less schooling, and alcohol use. The results of this survey are limited by the self-reported data from a non-representative sample that is cross-sectional. Nonetheless, they highlight the negative effects of worries about the virus and about finances during a COVID-19 lockdown.

**Keywords:** COVID-19 lockdown, worries, anxiety, depression, PTSD, sleep disturbances

## Introduction

Most of the psychologically-oriented COVID-19 lockdown research has focused on the prevalence of anxiety and depression for which standardized scales have been used. The prevalence rates for those problems have varied across countries. For example, in a sample from China, 35% reported experiencing anxiety and 20% depression.<sup>1</sup> Similar levels were reported in another lockdown sample from China for anxiety at 29% and depression at 17%.<sup>2</sup> And, in a sample from Italy, prevalence data included 33% for anxiety and 24% for depression.<sup>3</sup> A higher prevalence rate was noted for depression (33%) in a sample from Bangladesh.<sup>4</sup>

In some COVID-19 studies, relationships between these conditions have been explored. For example, in a sample from China, comorbid anxiety and depression reportedly occurred in 20% of the sample.<sup>5</sup> In a combined sample from Portugal and Brazil, the prevalence rate for anxiety was notably higher at 71%, while the prevalence of depression was similar to other countries at 25%, and for both depression and anxiety at 24%.<sup>6</sup>

More recently, research has assessed specific worries or fears related to COVID-19 inasmuch as they have appeared to be risk factors for anxiety and depression. The fears/worries have typically included “worrying about getting the virus” and “worrying about personal finances”. In a study, for example from China, worries were assessed by simple questions like “I worry about myself and my loved ones being affected by COVID”, and “I worry about my income, job, study or ability to pay the loan

being affected”.<sup>7</sup> The researchers then determined the odds ratios for the relationships between those questions and anxiety and depression. All the odds ratios were significantly greater than 1, suggesting that those worries contributed to anxiety and depression.

To further assess COVID-19 worries and fears, a seven-item scale was developed called the Fear of COVID-19 Scale. This scale was analyzed for concurrent validity using standardized anxiety and depression scales on samples from both Iran<sup>8</sup> and Israel.<sup>9</sup> The scale was also used with a sample from Greece to determine the prevalence of COVID-19 fears.<sup>10</sup> Notably, 36% of the Greek sample had high scores on the Fear of COVID-19 Scale while 23% had elevated depression scores and as many as 77% had high anxiety scores.<sup>10</sup> The Fear of COVID-19 Scale was also used in the Bangladesh study already mentioned.<sup>6</sup> The fear scores from that sample were, in turn, significantly predictive of depression.

More comprehensive scales have been developed to assess not only fears but also negative feelings, worries, and stress-related behaviors. An example is the development and initial validation of the COVID Stress Scale on both Canadian and U.S. samples.<sup>11</sup> Their data were factor analyzed and yielded a 5-factor solution including: 1) danger and contamination fears; 2) fears about economic consequences; 3) xenophobia; 4) compulsive checking and reassurance seeking; and 5) traumatic stress symptoms about COVID-19.

The Stress Scale that was used in the current study was developed for a U.S. COVID-19 lockdown survey that covered not only fears

but also negative feelings and behaviors that related to COVID-19.<sup>12</sup> A factor analysis yielded three factors on that Stress Scale.<sup>12</sup> The three factors contributed to 56 % of the variance on the Stress Scale total score including: Factor 1 which was labeled “Stimulation deprivation” that included the items Feeling Isolated, Feeling lonely, Feeling bored, Getting cabin fever and Feeling touch deprived that together explained 34 % of the variance; Factor 2 that was labeled “Worrying” that included the items Worried about finances and Worried about the virus that explained 12% of the variance; and Factor 3 that was labeled “Stress behaviors” that included the items Napping and Snacking that explained 10% of the variance.

Following this factor analysis, the survey data were analyzed for the effects of stress on sleep<sup>12</sup> as well as the relationships between individual items on the Stress Scale and the more severe psychological problems including depression, anxiety, sleep disturbances, fatigue, and PTSD symptoms. For example, feelings of isolation and loneliness<sup>13</sup>, feeling bored<sup>14</sup> and feeling touch deprived<sup>15</sup> were significantly related to scores on depression, anxiety, sleep disturbances, fatigue and PTSD scales.

For the purposes of the present analysis, the specific questions from the U.S. Covid-19 Stress Scale<sup>12</sup> about “worrying about getting the virus” and “worrying about personal finances” were analyzed for their relationships to not only depression and anxiety but also to other COVID-19 related problems including sleep disturbances, fatigue and PTSD symptoms as well as to

activities including health (e.g. exercise, touching and self-care), connecting with others, working (e.g. caregiving, housework and creative projects) and social media (e.g. texting and Facebook time) . The specific COVID-19 worries questions were expected to be significantly related to those activities as well as to the psychological problems and sleep disturbances that were measured in this COVID-19 lockdown. Documenting relationships between these worries and the more serious psychological problems as well as activities that might buffer those problems would be expected to both help identify individuals who need intervention and inform prevention/intervention protocols that might be used during lockdowns like those of COVID-19.

## **Methods**

### **Participants**

A G\* power analysis indicated that a sample size of 224 was required for an alpha of .05 and 80% power. The participants included individuals (N=260) who ranged in age from 18-82 (M=47 years). Gender was distributed 79% female, 18% male and 3% other (non-specified). Ethnicity was distributed 68% Non-Hispanic White, 21% Hispanic, 3% Black and 8% other (non-specified). Professions were distributed 35% office worker, 30% academic, 15% managerial, 12% medical and 8% labor. The average income was \$72,572, 28% were unemployed and 69% worked at home. Twenty-three per cent lived alone.

### **Procedure**

A flyer was posted on Facebook giving a brief description of the study including some

sample items and the age criterion being greater than 18 years. The Facebook flyer included a link to the survey on Survey Monkey which included 11 scales for a total of 87 items. The survey was four weeks duration (April 1-30, 2020), and the data were directly transported to SPSS for data analyses.

## Measures

The survey included several demographic items including those already mentioned (age, gender, ethnicity, profession, income, type of employment, working at home, and living alone). The following five scales were created specifically for this survey to relate to activities and stress associated with the COVID-19 lockdown.<sup>12</sup> The participants rated the items on the scales from zero meaning “not at all” to three meaning “a lot” including the:

1) **Health Scale** (15 items) (Cronbach’s alpha=.66) which included exercise (inside exercise, outside exercise and outside exercise with others as well as the types of exercise), touching (touching partner, kids and self as well as the types of touching), COVID-19-related safety practices including washing hands and social distancing, self-care, spiritual activities (meditating and feeling spiritual), and liking being at home. A factor analysis yielded three factors contributing to 47 % of the variance on the Health Scale score: Factor 1 Self/Spiritual Care that included Meditating (.74), Self-Care (.68), and Feeling Spiritual (.77) items that together explained 23 % of the variance; Factor 2 Touching that included the items Touching your kids (.75) and

Touching your partner or friend (.72) that explained 14% of the variance; and Factor 3 Exercise that included the items Outside exercise (-.89) and Exercise outside with someone else (-.76) that explained 10% of the variance;

2) **Media/Communications Scale** (10 items) (Cronbach’s alpha=.58) including talking on the phone, texting, on Internet, gaming, on Facebook/Instagram, spending time receiving and sending messages/media about the virus, engaging in Zoom/Skype/Facetime activities (e.g. Yoga, meditation), watching the news, watching other TV programs, and watching movies. A factor analysis yielded four factors contributing to 61 % of the variance on the Media/Communication Scale score: Factor 1 Entertainment that included the items Watching movies (.84) and TV programs (.80) that explained 23 % of the variance; Factor 2 Communication that included phone use (.80), texting (.70) and Zoom (.63) that explained 14% of the variance; Factor 3 Social Media that included being on internet (.78) and Facebook time (.60) that explained 13% of the variance; and Factor 4-COVID News that included watching the news (.79) and messaging about the virus (.60) that explained 11% of the variance;

3) **Connecting Scale** (4 items) (Cronbach’s alpha=.41) which included connecting with friends, trying to connect with old friends, helping children do homework, and receiving support from others;

4) **Working Scale** (6 items) (Cronbach’s alpha=.61) including cooking, caregiving,

housekeeping, paperwork, creative work, and working on projects/hobbies; and

5) **Stress Scale** (11 items) (Cronbach's alpha=.78) which included worrying about getting a virus, worrying about your financial status, wanting this experience to end, feeling isolated, feeling lonely, feeling bored, feeling touch deprived, snacking, drinking alcohol, napping, and getting "cabin fever". A factor analysis yielded three factors contributing to 56 % of the variance on the Stress Scale score: Factor 1 Stimulation deprivation that included the items Feeling Isolated (.86), Feeling lonely (.86), Feeling bored (.74), Getting cabin fever (.70), and Feeling touch deprived (.65) that together explained 34 % of the variance; Factor 2 Worrying that included the items Worried about finances (.67) and Worried about the virus (.47) that explained 12% of the variance; and Factor 3 Stress behaviors that included the items Napping (.68) and Snacking (.53) that explained 10% of the variance.

The standardized scales on the survey included 4 PROMIS Subscales<sup>16</sup> (each item was rated on a 5-point scale as 1= never, 2= rarely, 3= sometimes, 4= often, and 5=always) which included the: 1) **PROMIS Anxiety Subscale** (4 items) (Cronbach's alpha=.88) which included I felt fearful, I found it hard to focus on anything other than my anxiety, my worries overwhelmed me, and I felt uneasy;

2) **PROMIS Depression Subscale** (4 items) (Cronbach's alpha=.91) including I felt worthless, helpless, depressed, and hopeless;

3) **PROMIS Fatigue Subscale** (3 items) (Cronbach's alpha=.92) including I felt

fatigued, I had trouble starting things because I'm tired, and I felt run-down; and

4) **PROMIS Sleep Disturbance Subscale** (4 items) (Cronbach's alpha =.86) which included my sleep quality was bad, my sleep is not refreshing, I had a problem with my sleep, and I had difficulty falling asleep.

The second standardized scale was a PTSD Screener entitled "**PTSD-8: A short PTSD Inventory**" (8 items) (Cronbach's alpha=.92).<sup>17</sup> This inventory is introduced by the statement "If you're being reminded of a traumatic experience, please rate how much the following have bothered you during the lockdown" as: 0) not at all, 1) rarely, 2) sometimes, and 3) most of the time. The items are: recurrent thoughts and memories of the event, feeling as though the event is happening again, recurrent nightmares about the event, sudden emotional or physical reactions when reminded of the event, avoiding activities that remind you of the event, avoiding thoughts or feelings associated with the event, feeling jumpy/easily startled, and feeling on guard.

## Results

### Correlation Analyses Yielding Significant Coefficients for Worrying about Getting the Virus

The Survey Monkey output indicated that 88% of the sample reported being worried about getting the virus (rated 0 (12%) none, 1 (36%), 2 (29%), 3 (23%) a lot). At the beginning of the lockdown, 50% were worried about getting the virus, and by the end of the survey period (the month of April 2020), the number of participants reporting being worried about the virus increased by

43%. Correlation analyses revealed a number of significant coefficients for worrying about the virus (at the  $p < .05$  level with most at the  $p = .0001$  level) including the correlation between worrying about the virus and worrying about other people and washing their hands and the following (see Table 1 for the correlation coefficients for the scales' total scores): 1) a positive correlation with the **Media/Communication Scale** and several of its items including phoning, texting, Facebook time, messaging about the virus, time on Zoom, watching the news and watching movies; 2) a positive correlation with the total score on the **Connecting Scale** and on the items connecting with friends, trying to connect with old friends and feeling support; 4) a positive correlation with the **Working Scale** for the total score and the items including more housekeeping and more paper work; 5) a positive correlation with the total score on the **Stress Scale** and for its items indicating more worrying about finances, more wanting the experience to end, feeling more isolated, more lonely, more bored, more touch deprived, more snacking, and more cabin fever; 6) a positive

correlation for the **PROMIS Anxiety Subscale** total score and its items indicating being more fearful, less focused on anything other than anxiety, more overwhelming worries and feeling more uneasy; 7) a positive correlation for the total score on the **PROMIS Depression Subscale**, and all its items including feeling more worthless, helpless, depressed, and hopeless; 8) a positive correlation for the total score on the **PROMIS Fatigue Subscale**, and all its items indicating feeling more fatigue, tired, and run-down; 9) a positive correlation for the total score on the **PROMIS Sleep Disturbance Subscale**, and its items including poorer quality of sleep, more problems with sleep, and more difficulty falling asleep; and 10) a positive correlation for the total score on the **PTSD-8 Inventory** and all its items including recurrent memories of the event, feeling the event is happening again, recurrent nightmares about the event, sudden emotional or physical reactions, avoiding activities and thoughts associated with the event, feeling jumpy and on guard.

**Table 1.** Correlation coefficients for significant relationships between worrying about the virus

<u>Measures</u>	<u>Correlation coefficient</u>	<u>P level</u>
Social Media Scale Score	.31	.0001
Connecting Scale Score	.13	.04
Working Scale Score	.14	.04
Stress Scale Score	.46	.0001
PROMIS Anxiety Subscale Score	.46	.0001
PROMIS Depression Subscale Score	.26	.0001
PROMIS Fatigue Subscale	.15	.02
PROMIS Sleep Disturbance Subscale Score	.18	.005
Posttraumatic Stress-8 Inventory	.31	.0001

**Correlation Analyses Yielding Significant Coefficients for Worrying about Finances**

The Survey Monkey output indicated that 72% of the sample reported “worrying about your financial status” (rated 0 (28%) none, 1 (30%), 2 (23%), 3 (19%) a lot). Worrying about your financial status increased from 43% to 72% across the one month lockdown period suggesting an increase of 40%. Correlation analyses revealed a number of significant coefficients for worrying about finances (at least at the  $p < .05$  level) including being unemployed, having less schooling, and engaging in less self-touch and less self-care and the following (see Table 2 for the correlation coefficients for the scales’ total scores): 1) a positive correlation with the **Stress Scale** total score and most of its items including worrying about the virus, wanting the experience to end, feeling more lonely and bored and more snacking and alcohol and feeling more cabin fever; 2) a positive correlation for the **PROMIS Anxiety**

**Subscale** total score and all its items including more fearful, less focus on anything but anxiety, feeling more overwhelmed and uneasy; 3) a positive correlation for the **PROMIS Depression Subscale** total score and all its items including feeling more worthless, helpless, depressed and hopeless; 4) a positive correlation for the **PROMIS Fatigue Subscale** total score and all its items including feeling more fatigue, tired and run down; 5) a positive correlation for the **PROMIS Sleep Disturbance Subscale** total score and all its items including poorer quality of sleep, less refreshed sleep, more problems with sleep and more trouble falling asleep; and 6) a positive correlation with the **PTSD-8 Inventory** total score and all its items including recurrent memories of the event, feeling that the event is happening again, having more nightmares, having sudden emotional and physical reactions, and feeling more jumpy.

**Table 2.** Correlation coefficients for significant relationships between worrying about finances and scores on COVID-19 Lockdown Activities Survey scales and subscales.

<u>Measures</u>	<u>Correlation coefficient</u>	<u>P level</u>
Stress Scale Score	.44	.0001
PROMIS Anxiety Subscale Score	.25	.0001
PROMIS Depression Subscale Score	.26	.0001
PROMIS Fatigue Subscale Score	.19	.01
PROMIS Sleep Disturbance Subscale	.25	.0001
Posttraumatic Stress-8 Inventory	.19	.01

## Discussion

Worrying about the virus increased significantly from 50 to 88% (a 43% increase) across one-month in this U.S. COVID-19 lockdown period. Worrying about financial status significantly increased from 43 to 72% (a 40% increase) over the same lockdown period. The increases in these primary worries over this relatively short period of time are worrisome especially because of their significant relationships to the more serious psychological and sleep problems.

Both the worries about the virus and the worries about finances were significantly related to scores on the stress, anxiety, depression, fatigue, sleep disturbances and PTSD scales. The associations between these worries and anxiety and depression are consistent with previous literature.<sup>6,7,10</sup> The associations between these worries and stress, fatigue, sleep disturbances, and PTSD are unique to this study. Although the correlation coefficients for worries about the virus and finances were similar for stress (highest for stress), depression (moderate for depression) and fatigue (lowest for fatigue), their coefficients differed on other problems. Higher coefficients were noted for

correlations between the virus worry and anxiety and PTSD in contrast to higher coefficients being noted for the correlation between the finances worry and sleep disturbances.

Although the virus worry was not associated with demographic variables, the finance worry was significantly related to being unemployed and having less schooling, associations that were not surprising. Although the virus worry was related to worrying about more people and not surprisingly to washing hands more frequently, the finance worry was related to less self-touching and less self-care.

Surprisingly, neither worrying about the virus nor worrying about finances was related to healthy activities like exercise, meditation and touching partners or touching kids. But, the different worries differed in their relationship to other activities. Worrying about the virus was related to engaging in every form of social media including phoning, texting, Facebook time messaging about the virus, time on Zoom, watching the news and movies. This relationship may have contributed to the related psychological problems, as being on social media has been



related to psychological problems in other samples.<sup>18,19</sup> But being connected with others and engaging in housework and paper work may have ameliorated at least sleep disturbances. In contrast, while worries about finances were related to more caregiving, which may have contributed to financial worries, finance worries were not related to any other activities except greater consumption of alcohol.

That the two types of worries were related to each other and to the psychological and sleep problems highlights the significance of both worrying about the virus and worrying about finances. The differences in the correlations between the two types of worries and the problems, i.e. the virus worry being more related to anxiety and to PTSD and the finances worry being more related to sleep disturbances, suggest slightly different profiles for the worries. Different profiles are also suggested by the virus worry being associated with more positive activities (connecting, housework, and paper work) and negative activities (social media) and the finances worry being associated with positive activity (caregiving) and negative activity (alcohol consumption). Profile analysis of these different associations for virus and finances worries might help identify individuals needing intervention and further inform intervention protocols for the different worries.

Methodological limitations of these data have included sampling and assessment issues. Being a predominantly non-Hispanic, white female sample suggests that these data may not be generalizable to the larger population. Even though worries were not related to

gender in the current sample, worries may have been inflated in this predominantly female sample (72%). The prevalence of fear about the virus has been greater in women versus men in other samples including the Greek<sup>10</sup> and the Bangladesh<sup>4</sup> samples. And the prevalence of depression was greater in the current sample than in the U.S. census sample of the same time period (73% depression in the current sample versus 24% in the U.S. census sample).<sup>20</sup> Unfortunately, the census report did not include a gender distribution nor did it indicate whether it was based on a non-lockdown sample in which the prevalence would be expected to be lower. Uneven gender distributions and lockdown versus non-lockdown samples may explain some of the variability in prevalence data. Another contributor to variability could relate to the nature of the assessments of psychological problems and worries. Shorter scales with more explicit questions, as in the current study, may reveal greater prevalence. For example, the one question on virus worry in this sample yielded a prevalence of 88% while the Greek results that were based on the 7-item COVID-19 Fear Scale yielded only 36%.<sup>10</sup> This prevalence difference may also relate to fears being considered greater than worries, resulting in fewer individuals reporting fears (as in the Greek sample) than worries (as in the present sample).

The self-report data are subject to questionable bias and reliability, although they were anonymous, suggesting their veridicality and they are consistent with previous data.<sup>6, 7, 10</sup> The direction of these effects cannot be determined given that the data are cross-sectional rather than longitudinal. Pre-COVID-19 anxiety and

depression may have contributed to these worries just as the worries contributed to those problems, as in bi-directionality. The bi-directionality is exemplified by the Greek survey that suggested that depression and anxiety moderated fear of the virus.<sup>10</sup> Unfortunately, baseline data were not available, as in most other studies in the literature on COVID-19 psychological problems given that the lockdowns were sudden and their timing was not predictable. And, the unpredictable duration of the lockdown as well as the anonymity of the survey precluded the collection of longitudinal data.

The U.S. Census report did indicate a 3-fold increase in depression and anxiety from pre-COVID 2019 data to March-April 2020 COVID data.<sup>20</sup> And, comparisons between the mid-term sample and the larger end-of-study sample of this survey, suggested an increased prevalence of these problems from the beginning of lockdown periods to data collected one month later.<sup>13</sup> That analysis revealed that the psychological problems that were significantly related to the worries in the current data analysis were experienced by a greater percent of the sample by the end of the one month long survey including anxiety, depression, PTSD, fatigue, and sleep

disturbances. The increased prevalence for those problems ranged from 23 to 57% increases. And other stress scale problems besides worries increased from 40 to 62% including feeling isolated, lonely, touch deprived, and cabin fever. For those problems there was at least one buffer, i.e. exercise, which fortunately increased in prevalence by 86%. Unfortunately, however, exercise was not a buffer for the virus and finances worries (or at least not significantly correlated), although caregiving may have been a buffer activity for finance worries, and housework and paper work might have been a buffer for the virus worries.

Despite these methodological limitations, these survey data suggest that worries about the virus and about finances are significant lockdown problems. Their significant relationship to each other and to the same psychological and sleep problems highlight the similar effects of these worries. Their uniquely different relationships suggest the need for profile analyses to help identify the different types of interventions needed as well as inform intervention protocols to reduce worries about the virus and about finances and their related problems during lockdowns like COVID-19.

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