

## Boredom and Psychological Problems during a COVID-19 Lockdown

Tiffany Field<sup>1,2</sup>, Samantha Poling<sup>2</sup>, Shantay Mines<sup>2</sup>, Miguel Diego,<sup>1</sup> Debra Bendell<sup>2</sup>, and Connie Veazey<sup>2</sup>

<sup>1</sup>University of Miami/Miller School of Medicine

<sup>2</sup>Fielding Graduate University, USA

**\*Corresponding Author:** Tiffany Field, University of Miami/Miller School of Medicine, Fielding Graduate University. USA.

### Abstract

Boredom has been related to anxiety and depression in the pre-COVID-19 literature. In this COVID-19 lockdown Survey Monkey study, as many as 68% of 260 respondents reported feeling bored. Correlation analyses suggested that feeling bored was significantly correlated with several demographic variables and virtually every item on every scale of the survey. The demographic correlations suggested that boredom occurred more frequently in males, in those with less schooling, in those not working at home during the lockdown, and in those who were lacking a routine. The significant correlations for the scales suggested that those feeling bored engaged in fewer health activities like exercise, self-care and meditating; they spent more time on social media including gaming and Facebook; they engaged in less creative work and hobbies; they scored higher on the Stress Scale including worrying more about the virus and their finances; they reported feeling more isolated, lonely and touch deprived; and they had higher scores on anxiety, depression, fatigue, sleep disturbances, and PTSD scales. A regression analysis suggested that 49% of the variance in the boredom scores was explained by stress scale scores. These results are limited by their being self-reported data from a non-representative, cross-sectional sample. Nonetheless, they highlight the negative effects of feeling bored during a COVID-19 lockdown.

**Key words:** Boredom, Stress, Anxiety, Depression, COVID-19 lockdown

### Introduction

Boredom has received very little attention in the COVID-19 literature, although, anecdotally, it has been frequently expressed during lockdowns. In a recent review of 24 papers on quarantines for several different epidemics/pandemics including COVID-19, boredom was mentioned as one of the most frequent experiences.<sup>1</sup> And, in one of the only empirical studies on boredom during COVID-19, boredom was related to the perception of “time slowed down”.<sup>2</sup> The authors referred to the lockdown situation as people having more time but “dying” of boredom “as time slows down and drags on”.<sup>2</sup> And, they cited Jean Paul Sartre as

having said very much the same thing, i.e. that “humans are overwhelmed by boredom when they have more time but cannot act”.<sup>2</sup>

Boredom has similarly been defined as “an aversive experience of wanting but being unable to engage in satisfying activity”.<sup>3</sup> Boredom has been described as both apathy/ennui and agitation/restlessness that is accompanied by under and/or over arousal.<sup>4</sup> Further, it has been attributed to a situation that offers inadequate stimulation. Inadequate stimulation in this model could lead to under or over-arousal. In one attempt to measure boredom-related arousal, boredom was reputedly induced by a video of two men hanging laundry and occasionally asking for a clothespin.<sup>4</sup> Heart rate and cortisol levels

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increased, suggesting increased arousal. However, a decrease in skin conductance level also suggested decreased arousal.

The boredom literature has also included studies on risk factors or predictors of boredom as well as correlates of boredom. The lack of routine and low levels of social and physical contact have contributed to feelings of boredom.<sup>1</sup> These findings are consistent with the inadequate stimulation theory.<sup>4</sup> Depression is the most frequently reported correlate of boredom.<sup>5</sup> In turn, most interventions have focused on depression rather than boredom. Other correlates of boredom are time on Facebook which has been noted in pre-COVID studies,<sup>6</sup> as well as at least one COVID lockdown study.<sup>7</sup> And, PTSD and infection fears were notable correlates of boredom in the review on quarantines related to epidemics.<sup>1</sup>

The COVID-19 literature on psychological problems has focused primarily on stress, anxiety, depression, sleep disturbances, fatigue, and PTSD.<sup>8-10</sup> However, boredom has rarely been studied as a psychological problem or even as a correlate of these lockdown problems.<sup>11</sup> The purpose of the present data analyses was to assess the relationships between feeling bored and health activities, stress, anxiety, depression, fatigue, sleep disturbances, and PTSD symptoms in individuals experiencing a COVID-19 lockdown. Based on the pre-COVID literature, feeling bored was expected to be associated with both over-aroused states including COVID-related stress and anxiety and with under-aroused states including depression and fatigue.<sup>4</sup> In addition, based on the review on quarantines including COVID-19, feeling bored was also expected to relate to PTSD and infection fears.<sup>1</sup>

## 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/Face time 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, care giving, 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>13</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>14</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 Feeling Bored

Results indicated that 68% of 260 respondents reported feeling bored,

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including 30% who rated themselves as being “a little” bored (a rating of 1), 17% as feeling moderately bored (a rating of 2) and 21% as feeling bored “a lot” ( a rating of 3).Correlation analyses revealed a number of significant correlation coefficients for the feeling bored variable (at the  $p<.05$  level)(see Table 1 for the correlation coefficients for the scales’ total scores) including: 1) several demographic variables suggesting that boredom was more frequently reported by males, by those with less schooling, by those not working at home, and by those who did not have a routine; 2) a negative correlation for the **Health Scale** total score and its items indicating less inside exercise, less self-care, less feeling spiritual, less meditating, and less “liking being at home”;3) positive correlations on the **Media/Communication Scale** total score and its items including more gaming, Facebook time, and more tv watching; 4) a negative correlation with the **Working Scale** total score and its items, suggesting less time working on creative projects and hobbies; 5) a positive correlation with the **Stress Scale** total score and several items, suggesting more worrying about the virus and about finances, “wanting this

experience to end”, feeling more isolated, lonely, and touch deprived, more snacking and napping, and getting more “cabin fever; 6) a positive correlation with the **PROMIS Anxiety Subscale** score and all its items including feeling fearful, having difficulty focusing on anything other than my anxiety, worries overwhelming me and feeling uneasy; 7) a positive correlation for the **PROMIS Depression Subscale** total score and all its items including feeling worthless, helpless, depressed and hopeless; 8) a positive correlation for the **PROMIS Fatigue Subscale** total score and all its items including fatigue, tired, and rundown; 9) a positive correlation for the **PROMIS Sleep Disturbance Subscale** total score and all its items including sleep quality, refreshing sleep, problem sleeping, and difficulty falling asleep; and 10) a positive correlation for the **Posttraumatic Stress Inventory-8** total score and 7 of its items including thoughts or memories of the event, feeling that the traumatic experience is happening again, having nightmares about 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.

**Table1.** Correlation coefficients for significant relationships between feeling bored and scores on COVID-19 Lockdown Activities Survey scales and subscales.

| Measure                                 | Correlation coefficient | p level |
|---|-------------------------|---------|
| Health Scale Score                      | -.31                    | .0001   |
| Media Scale Score                       | .14                     | .03     |
| Working Scale Score                     | -.18                    | .004    |
| Stress Scale Score                      | .70                     | .0001   |
| PROMIS Anxiety Subscale Score           | .37                     | .0001   |
| PROMIS Depression Subscale Score        | .45                     | .0001   |
| PROMIS Fatigue Subscale Score           | .33                     | .0001   |
| PROMIS Sleep Disturbance Subscale Score | .30                     | .0001   |
| PTSD-8 Inventory Score                  | .22                     | .003    |

### Regression Analyses on Scales Significantly Related to Boredom

Two stepwise regression analyses were conducted to determine: 1) in the first regression, the amount of the variance on the boredom variable that was explained by the mood scale scores that were moderately to highly significantly related to the boredom variable including stress ( $r=.70$ ), anxiety ( $r=.37$ ), depression ( $r=.45$ ) and fatigue ( $r=.33$ ) scale scores; and 2) in the second regression, the amount of

variance on the boredom variable that was explained by the activity scale scores that were significantly related to the boredom variable including the health ( $-.31$ ), media (.14) and working ( $-.18$ ) scale scores. In the first stepwise regression entering stress, anxiety, depression and fatigue as the predictor variables, the stress scale score was the only score to enter the analysis, and it explained 49% of the variance on the boredom variable (see Table 2 for the regression analyses). In the stepwise regression entering health, media and

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working scale scores as the predictor variables, the health scale score contributed to only 11 % of the variance and the media

scale score added only 3 % of the variance for a total of 14% of the variance on the boredom variable.

**Table2:** Stepwise regression analyses:

| a) entering significantly related psychological problem scale scores including stress, anxiety, depression and fatigue |     |                |         |         |
|--|-----|----------------|---------|---------|
| Scale  | R   | R <sup>2</sup> | F value | p level |
| Stress   | .70 | .49            | 242.98  | .0001   |
| b) entering significantly related activity scale scores including health, media and working                            |     |                |         |         |
| Scale  | R   | R <sup>2</sup> | F value | p level |
| Health   | .34 | .11            | 27.50   | .0001   |
| Media  | .37 | .14            | 6.11    | .001    |

### Analyses of Variance Comparisons on the Boredom and the No Boredom Groups

Analyses of variance were conducted to provide confirmatory evidence for the correlation and regression analyses. As can be seen in table 3, the boredom and no boredom groups

significantly differed on all the scale scores except the connecting scale score which was consistent with the correlation and regression analyses results. A MANOVA on the scale scores was significant (Wilks' Lambda F=5.18, p=.0001).

**Table3:** Mean scale scores for significant ANOVAs for feeling bored versus not feeling bored groups (standard deviations in parentheses).

| Measure           | Not bored    | Bored        | F value | p level | eta <sup>2</sup> |
|-------------------|--------------|--------------|---------|---------|------------------|
| Health            | 33.80 (5.44) | 30.91 (5.29) | 13.03   | .001    | .06              |
| Media             | 26.03 (4.57) | 27.19 (4.10) | 3.90    | .05     | .02              |
| Working           | 16.39 (3.95) | 15.10 (3.23) | 7.49    | .01     | .03              |
| Stress            | 21.97 (4.22) | 29.36 (5.74) | 101.22  | .0001   | .29              |
| Anxiety           | 8.22 (2.99)  | 10.57 (3.57) | 25.23   | .001    | .09              |
| Depression        | 6.17 (2.48)  | 9.30 (4.06)  | 39.37   | .001    | .13              |
| Fatigue           | 6.84 (2.96)  | 9.30 (4.06)  | 18.15   | .001    | .07              |
| Sleep Disturbance | 11.96 (4.33) | 14.62 (4.42) | 19.40   | .001    | .07              |
| PTSD              | 12.50 (5.35) | 15.32 (5.86) | 8.57    | .005    | .05              |

## Discussion

Although boredom has been less frequently studied than depression and anxiety during COVID-19 lockdowns, the data from the current survey highlight the prevalence of boredom (68%). That boredom was positively correlated with virtually every negative item of every scale and negatively related to every positive item highlights the significant effects of boredom during lockdowns. Its positive correlations with other psychological problems including stress, anxiety, depression, fatigue, sleep disturbances, and PTSD symptoms suggest that it needs to be studied together with those problems that have received more attention in the COVID-19 lockdown literature.<sup>8-10</sup> Of those psychological problems, only the Stress Scale scores entered the stepwise

regression on boredom in the current analyses, although as one variable, it explained a modest amount of the variance (49%). This finding was perhaps not surprising since the Stress Scale, which was designed to assess lockdown-related stressors for this survey, was comprised of several items that loaded significantly on the stimulation deprivation factor, the primary factor on the Stress Scale. This factor included feeling isolated and lonely as well as touch deprived and "cabin fever". These items were highly correlated with feeling bored including feeling isolated (r=.56), lonely (r=.57), and touch deprived (r=.30) as well as having "cabin fever" (r=.54). These lockdown-related stressors have been identified as significant problems in previous analyses of this database including feeling isolated and lonely<sup>15</sup> and feeling touch deprived.<sup>12</sup> Surprisingly, as in

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those data analyses, and in the current correlation analysis, lockdown-specific worries were less related to boredom including worries about the virus ( $r=.21$ ) and worries about finances ( $r=.18$ ).

That the highest correlations with boredom were noted on the “stimulation deprivation” factor items is consistent with the boredom literature that addresses inadequate stimulation.<sup>4</sup> In the theory of inadequate stimulation, boredom can result from under-arousal and over-arousal. In the stepwise regression analysis of this study, both depression and fatigue were thought to reflect under-arousal while stress and anxiety were assumed to reflect over-arousal. Surprisingly, only the Stress Scale contributed to the variance, but for a significant amount of the variance (49%), suggesting that the boredom in this sample was reflecting over-arousal rather than under-arousal. Although these data are suggestive, a laboratory study that included physiological measures would provide a more valid assessment of over-arousal versus under-arousal. And, as in many phenomena, the effects of boredom on arousal may be an inverted U function suggesting that boredom can have both under-arousal and over-arousal effects, as was noted in the “two men and the clothespin study” where heart rate and cortisol increased, suggesting over-arousal, and skin conductance decreased, suggesting under-arousal.<sup>4</sup>

These data analyses also yielded significant correlations between boredom and lockdown activities. Positive correlations were noted between boredom and media including gaming, Facebook time, and tv. These were surprising findings given that these media are typically considered entertaining and therefore would be expected to be negatively correlated with boredom. Although, at least Facebook time has been associated with greater boredom in at least one other COVID-19 study.<sup>7</sup>

In contrast, those activities that were negatively correlated with boredom, and could be considered buffers to boredom, were working at home, having a

routine, and engaging in indoor exercise, meditation, creative projects, and hobbies. The scales that assessed these activities including the media, health, and working scales were entered into a stepwise regression on boredom. Although significant, this analysis, as noted, only explained 14 % of the variance, with health scale scores (that included the exercise and meditation items) explaining 11% of the variance in boredom and media adding only 3%. Nonetheless, that engaging in healthy activities was alleviating boredom in this sample is inconsistent with the definition of boredom as ‘being unable to engage in satisfying activity’<sup>3</sup> or Sartre’s claim that “humans are overwhelmed by boredom when they have more time but cannot act”.<sup>2</sup>

Methodological limitations of these data should be noted including sampling and assessment issues. Being a predominantly non-Hispanic, white female sample suggests that these data may not be generalizable to the larger population. The self-report data are subject to questionable bias and reliability, although they were suggestive of over-arousal effects of boredom that are consistent with at least one laboratory study showing physiological over-arousal of boredom. The direction of these effects, i.e. boredom and stress, cannot be determined given that the data are cross-sectional rather than longitudinal. As in most other studies in the COVID-19 psychological problems literature, no baseline data were available. And, the unpredictable duration of the lockdown as well as the anonymity of the survey precluded the collection of longitudinal data. However, another analysis of these data compared a mid-term sample to the larger end-of-study sample.<sup>15</sup> That analysis suggested that all the psychological problems that were significantly related to boredom in the current data analysis were experienced by a greater percent of the sample by the end of the study including anxiety, depression, PTSD, fatigue, and sleep disturbances. Those increases ranged from 23 to 57%. And the stress scale problems increased from 40 to 62% including feeling isolated, lonely, touch deprived, and cabin fever. The feeling bored increase was

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notable at 56%. But, at least one of the boredom buffers, i.e. exercise, fortunately increased by 86%.

Despite these methodological limitations, these survey data suggest that boredom is a significant lockdown problem that has been called over-arousing and under-arousing<sup>4</sup> as well as frustrating and depressing.<sup>16</sup>In this sample, boredom was most related to stressors including feeling isolated, lonely, and touch deprived and having cabin fever. That stress scale scores were the only significant predictor and explained a moderate amount of the variance on boredom suggests that at least for this sample, boredom was over-arousing. Although a small amount of the variance in boredom was explained by health and media activities, that finding is suggestive that lockdown boredom may be exacerbated by media activities and alleviated by health activities. Laboratory and longitudinal studies may further inform the literature on boredom as well as interventions that may alleviate the boredom associated with lockdowns like COVID-19.

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