

## Working from Home and Other Home Activities during a COVID-19 Lockdown

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### Abstract

“Working from home”, which is typically defined as taking your employment work home, has been prevalent during COVID-19 lockdowns, although very little research has focused on working from home or on other home activities even though lockdowns have entailed remaining at home for extended periods. In this Survey Monkey lockdown study, 69% were “working from home”, and that work was related to more paper work, being less bored, less touch deprived and generally less stressed. The other prevalent at home activities included cooking (97% of survey participants), housekeeping (96%), hobbies (82%), paper work (76%), creative projects (71%), and care giving (54%). Total scores on an Activities Scale that included these activities were positively correlated with scores on a Health Scale (that included exercise, touching family members, self-care, and meditating) as well as connecting with friends. These home activities were also associated with more texting and Zoom time and less depression and fatigue. These data, in contrast to other lockdown literature, suggest moderate levels of working from home and engaging in healthy activities during a COVID-19 lockdown.

### Introduction

Most of the COVID-19 lockdown activities literature has focused on activity levels including sedentary time, screen time, and exercise. Very little research could be found on working from home and other at home activities. In those few exceptions, researchers have reported increased sedentary time and screen time associated with working from home. In a study from India, for example, increased sitting and screen time were reported, but especially for men.<sup>1</sup>In a survey from the U.S., sedentary activity and screen time were also more frequent for the working from home sample.<sup>2</sup> This U.S. survey, however, was confounded as it combined those working from home with those who “lost their jobs”. Looking for new employment during a lockdown would be difficult at best which likely contributed to the increased sedentary activity and screen time in the U.S. survey. When baseline data have been

available, for example in surveys from Spain, the reduction in lockdown physical activity only occurred for those who had been previously most active.<sup>3,4</sup>

In contrast, positive effects have been noted for working from home in a COVID-19 lockdown. In a study from Australia, for example, working from home was reported as having mostly positive effects.<sup>5</sup>These included participants reporting that they were more productive, they felt more support from their employers than pre-COVID, and they liked not having to commute. The only disadvantage they reported was disruptions from family and children. The positive effects were more often reported by female and older participants as opposed to younger individuals who preferred working away from home.

Only one study could be found in the COVID-19 literature on home activities other than working from home. This study

entitled “Women’s and Men’s Housework” focused primarily on housework and childcare in Italian homes during a lockdown.<sup>6</sup> Those survey results suggested that women engaged in the additional housework and childcare, although childcare activities were equally shared, especially if the women were working elsewhere. This survey was limited to female participants which may have biased the results, as in many lockdown surveys.

The purpose of the present data analysis was to further explore working from home and activities that were occurring at home during a COVID-19 lockdown, and how those activities related to physical and mental health. This lockdown sample had been previously reported to engage in moderate amounts of meditation,<sup>7</sup> touching,<sup>8</sup> and exercise<sup>9</sup> which were noted to buffer the negative effects of lockdown experiences including boredom, loneliness, anxiety, depression and sleep disturbances. The questions for this analysis were: 1) the prevalence of working from home and other at home activities including care giving, cooking, housework and creative projects; and 2) the relationship between these activities and health activities like meditating and exercise as well as mental health problems like stress, depression and fatigue.

## 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>10</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) **Activities Scale** (6 items) (Cronbach's alpha=.61) including cooking, care giving, housekeeping, paperwork, creative projects, and 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 behaviours 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>11</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>12</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 for Working from Home and Other Scales

The Survey Monkey output indicated that 69% were "working from home". Working from home was significantly correlated with a few demographic factors including having more schooling, being employed, and having a higher income (see table 1). Other significant correlations suggested that it was related to: 1) more touching your kids; 2) more paper work; and 3) lower scores on the **Stress Scale** and its items including feeling less bored, feeling less touch deprived, and less snacking.

**Table 1.** Correlation coefficients for working from home and other variables

Variables	Correlation Coefficient	p level
Schooling	.15	.001
Employment	.25	.0001
Income	.15	.04
Touching your kids	.16	.02
Paper work	.25	.0001
Boredom	-.17	.008
Touch deprivation	-.15	.02
Snacking	-.14	.03
Stress Scale Score	-.17	.008

**Correlation Analyses for Activities Scale Scores and Activities Scale Items**

The other prevalent activities at home included cooking (97%), housekeeping (96%), hobbies (82%), paper work (76%), creative projects (71%), and

care giving (54%). Correlation analyses revealed significant coefficients for all the specific activities at home (see Table 2 for the correlation coefficients) including cooking, housekeeping, paper work, hobbies, creative projects and care giving.

**Table 2.** Correlation coefficients for the Home Activities Scale scores and its Items.

Items	Correlation Coefficients	p levels
Cooking	.54	.0001
Care giving	.62	.0001
Housekeeping	.62	.0001
Paper work	.50	.0001
Creative projects	.63	.0001
Hobbies	.62	.0001

**Correlation Analyses for Activities Scale Scores and Other Scale Scores**

Activities Scale Scores were significantly correlated with other scale scores (see table 3) and their items including: 1) positive correlations with the total **Health Scale** score and its items including indoor exercise, exercise with someone else, touching partner, touching kids, self-touch, washing hands, meditating, liking being at home, self-care and feeling spiritual; 2) positive correlations with the total score on the **Media/Communication Scale** and its items including texting, Zoom time, and watching movies; 3) positive correlations with the total score on the **Connecting Scale** and on the items

connecting with friends, trying to connect with old friends, doing homework with children, and feeling support from others; 4) a negative correlation with the **Stress Scale** items indicating more worrying about the virus but being less bored; 5) a negative correlation for the **PROMIS Anxiety Subscale** item indicating feeling less uneasy; 6) negative correlations for the total score on the **PROMIS Depression Subscale** and all its items including feeling less worthless, helpless, depressed, and hopeless; and 7) negative correlations for the total score on the **PROMIS Fatigue Subscale** and its items indicating feeling less fatigue and less tired.

**Table 3.** Correlation coefficients for significant relationships between Home Activities Scale scores and other scale scores

Measures	Correlation Coefficients	p levels
Health Scale Score	.43	.0001
Social Media Scale Score	.17	.006
Connecting Scale Score	.42	.0001
PROMIS Depression Subscale Score	-.17	.005
PROMIS Fatigue Subscale Score	-.14	.03

**Correlation Analyses for Activities Scale Scores and Health Scale Items**

As can be seen in table 4, **Activities Scale** Scores were significantly correlated with 10 of the 15 items on the **Health Scale**

including: indoor exercise, exercising with someone else, touching your kids, touching your partner, self-touch, washing hands, meditating, liking being at home, self-care, and feeling spiritual.

**Table 4.** Significant correlation coefficients for Home Activities Scale scores and Health Scale items.

Items	Correlation coefficients	p levels
Indoor exercise	.13	.05
Exercise with someone else	.27	.0001
Touching your kids	.29	.0001
Touching your partner	.25	.0001
Self-touch	.17	.008
Washing hands	.20	.002
Meditating	.23	.0001
Liking being at home	.18	.006
Self-care	.17	.007
Feeling spiritual	.25	.0001

**Discussion**

Working from home appears to have been an active and positive experience for this sample, consistent with data from the Australian survey.<sup>5</sup> That more paperwork was associated with working from home was not surprising as most professions include paperwork. The relationship between working from home and “touching your kids” may have related to multitasking, i.e. working from home and at the same time giving your kids physical affection (or trying to distract them) in order to meet both the needs of working and care giving. “Touching your kids” more would, in turn, explain the relationship between working from home and feeling less touch deprived.

The significant correlation between working from home and being less bored is not surprising given that the initial pre-COVID work that was chosen that was now “working from home” was presumably chosen because it was less boring. And the negative relationship with the Stress Scale score could relate to not only being less bored and touch deprived (items on the Stress Scale) but also being employed as well as having a greater income.

Surprisingly, working from home was not related to any other home activities except paperwork, possibly because working from home and paperwork occupied most of the lockdown hours. The absence of relationships between working

from home and other home activities may also relate to other family members who were unemployed taking care of those necessary other at home activities including cooking and housework. The greater prevalence of other at home activities than working from home, i.e. percentiles in their 90s versus 69% for working from home, suggests that significant multi-tasking was occurring. Multi-tasking may have also occurred for both working from home and engaging in health activities. Even though working from home was not significantly correlated with health activities including exercise and self-care, the prevalence of exercise and self-care were also high (72 and 95% respectively). Although the lack of exercise is consistent with the reports on increased sedentary activity associated with working from home in the U.S. sample<sup>2</sup> and the samples from India<sup>1</sup> and Spain,<sup>4</sup> the prevalence data from the current study suggest that both health activities and working from home were occurring. The inconsistent findings between the earlier findings<sup>1,2,4</sup> and these may relate to the wider variety of home activities assessed in the present study than the simple measures of sitting and working from home in the earlier COVID-19 studies.<sup>1,2,4</sup>

Engaging in other home activities, in contrast with working from home, was highly correlated with the Health Scale and Connecting Scale scores as well as many of the Health Scale activities including

exercise, self-care, touching your partner and your kids, and meditating. These have been notable buffers for psychological problems and sleep disturbances in previous analyses of this database including exercise,<sup>9</sup> touching partners and kids<sup>8</sup> and meditation.<sup>7</sup> In addition, engaging in other home activities was related to social interaction variables including connecting with friends, texting and spending time on Zoom that would also explain their feeling less bored, anxious and depressed.

Perhaps more importantly, other home activities were negatively correlated with depression and fatigue and all the items on those scales. Other variables that may have confounded and/or compounded these relationships for other home activities were greater income, living with others, and having more family members and more kids in the household. Living with more family members and kids, in turn, could explain the significant relationships with care giving, cooking, and housework. Engaging in hobbies and creative projects may have also contributed to the lower levels of depression.

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. The self-report data are subject to questionable bias and reliability, although their anonymity suggests veridicality. The direction of effects 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.

Despite these methodological limitations, these survey data suggest that working from home can reduce stress, and other home activities can reduce depression and fatigue which have been significant lockdown problems. Longitudinal studies may further inform the literature on

working from home as well other home activities that occurred during lockdowns like COVID-19.

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