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Holly Carper
Longwood University

Jacob Auerbach
Longwood University

Meghan Griffin
Longwood University

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The Effect of Covid-19 Related Stress on Self-Perceived Level of Health Behaviors



Holly M. Carper, Jacob H. Auerbach, Meghan E. Griffin
Longwood University



Background

Covid-19 related stressors

- The WHO declared COVID-19 a global pandemic in March 2020 (Hamza et al., 2020).
- Workers who were used to having a day-to-day routine in their 9 to 5 jobs showed signs of lack of self care and poor diet once they were laid off, showing that COVID-19 negatively affects health (Trougakos et al. 2020).
- Similar to SARS, hospital staff have shown increased anxiety because of the possibility of transmission to their friends and families, and also reported loss of sleep (Kurtana & Lau, 2020).
- Stress based theories show that stress and loss of control caused by the pandemic could cause an emotional downfall in individuals who suffer from anxiety, which would lead to unhealthy habits surfacing (Trougakos et al 2020).

Hypotheses

COVID-19 related stress causes higher stress and anxiety

•We believe that participants who are exposed to COVID-19 related stress will report higher levels of stress and anxiety as compared participants who aren't.

COVID-19 related stress causes worse sleeping

•We believe that participants who are exposed to COVID-19 related stress will report worse sleep schedules as compared to those who are not exposed.

COVID-19 related stress leads to a negative impact on healthy eating

•We predicted that participants who are exposed to COVID-19 will report less healthy eating as compared to those who are not exposed to COVID-19 stress

COVID-19 related stress causes decreased exercise

• We predict that participants who are exposed to COVID-19 related stress will report a decreased amount of exercise when compared to those who are not exposed to COVID-19 related stress.

Method

Participants

- We excluded cases based on failure of the manipulation check, leaving us with $n = 13$ for our Experimental (1 male, 12 female) and $n = 16$ for our Control (5 male, 9 female)
- The two samples were a combination of Freshmen-Seniors with a spread of 4 Freshmen, 4 Sophomores, 3 Juniors, and 2 Seniors.
- The experimental group participants were convenience sampled from their psychology department. The control group participants were also convenience sampled from the psychology department.

Procedure

- The participants were given an article to read based on the group they were in. The experimental group (survey A) were given a COVID-19 article to read, while the control group (Survey B) were given an article about space.
- Participants were asked 38 questions:
 - The first 4 questions were demographic questions
 - The next 13 were self reported measures of healthy eating
 - After the healthy eating questions there were 8 questions for self reported sleeping habits from one sub scale, and then 2 more from another sub scale
 - After the sleep measures there were 3 questions on a self report for Exercise quality.
 - The last seven questions were self reported measures for Depression, Anxiety, and Stress scale.
 - The very last question was a manipulation check to ensure that the participants felt the manipulation

Materials

Participants responded to demographic questions as well as items taken from four measures:

•**Healthy Eating Questionnaire (Akamatsu et al., 2005)** = participants rated items on a 5-point scale from (1) "not at all" to (5) "extremely important." $\alpha = 0.872$

•**Pittsburgh Sleep Quality Index (PSQI, Buysse et al., 1989)**= participants rated items on two components of the measure, sleep disturbance and daytime disfunction, from (0) to (3) $\alpha = 0.71$

•**Physical Activity Attitudes and Behaviors Questionnaire (van Bree et al., 2015)** = participants rated items on exercise intention from 1 "very certainly not" to (10) "very certainly yes" $\alpha = 0.948$

•**Depression Anxiety Stress Scale-21 (DASS-21, Lovibond & Lovibond, 1995)** = Participants rated items from the stress scale on a 4-point scale from (0) "did not apply to me at all" to (3) "applied to me very much, or most of the time." $\alpha = 0.862$

Figure 1. Self Reported Healthy Eating Habits

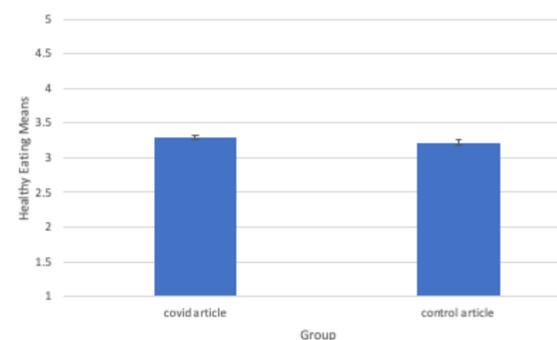


Figure 2. Self Reported Sleep Quality

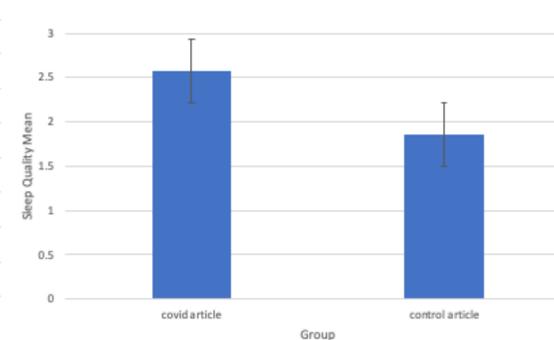


Figure 3. Self Reported Exercise Behavior

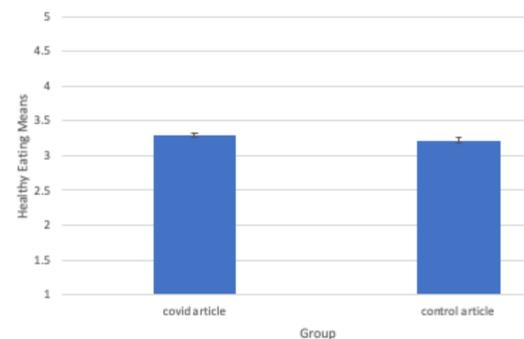
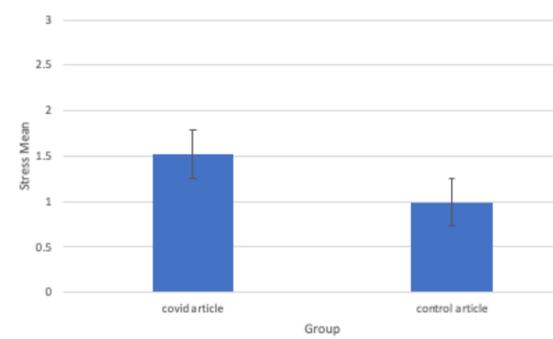


Figure 4. Self Reported Measure of Stress



Results

A series of t tests compared the Covid-19 article group and the control group on our measures of healthy eating, sleeping, exercise, and stress (see Figure 1-4):

- The experimental group and control group did not score significantly different on measures of eating, sleeping, and exercising
- The participants who read the Covid-19 article ($M = 1.52, SD = 0.585$) scored significantly higher than the control group ($M = 0.991, SD = 0.701$) on the DASS measure of stress, $t(27) = 2.159, p = 0.04$, 2-tailed test, Cohen's $d = 0.806$.

A Pearson r showed a significant correlation between sleep behavior ($M = 2.17, SD = 1.12$) and stress ($M = 1.23, SD = 0.693$), $r(27) = 0.576, p = 0.001$ (see Table 1).

Table 1. Correlation Matrix for Healthy Eating (HEQmean) Sleep (SQ1SQ2) Exercise (EQmean) and Stress (DASSmean)

Correlation Matrix		HEQmeans	SQ1SQ2	EQmean	DASSmean
HEQmeans	Pearson's r	—			
	p-value	—			
	N	—			
SQ1SQ2	Pearson's r	0.268	—		
	p-value	0.160	—		
	N	29	—		
EQmean	Pearson's r	0.058	-0.181	—	
	p-value	0.765	0.348	—	
	N	29	29	—	
DASSmean	Pearson's r	0.136	0.576**	-0.286	—
	p-value	0.482	0.001	0.132	—
	N	29	29	29	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

- The participants the experimental group self-reported higher stress for the DASS stress scale.
- There was a correlation between the stress measure and the quality of sleep measure.

Future research:

- Using more of the measures to ensure internal reliability.
- Using a video instead of an article so that the manipulation is more effective.
- Instead of doing research on college students, give the survey to 25-50-year-old adults. We believe that this will provide better results because the older adults had their lives more impacted because of their work.

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