



The Role of Emotions and Technology Use in the Psychological Impact of COVID-19



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Abstract

This study provides evidence of the influence of perceived threat of COVID-19 on psychological well-being, mediated by negative emotions. In addition, our results confirmed moderating effects of the use of work-related technology. Individuals who used work-related technology to a larger extent, experienced more negative emotions when they perceived a higher threat of COVID-19. This study contributes to a better understanding of the factors underlying the negative impact of the COVID-19 pandemic on our mental health and stresses the importance of adopting a mindful technology use.

Introduction

- The COVID-19 pandemic and the measures implemented to prevent the spread of the virus have had detrimental effects on people's mental health (Cullen, Gulati & Kelly, 2020).
- Emerging research indicates that crises, which often come with uncertainty and change, produce significant emotional effects on people, increasing their state negative affect (Folkman & Greer, 2000; Maunder et al., 2003).
- Negative affect has been previously associated with worsened psychological well-being (Carter, 2004), thus suggesting that heightened negative emotions could explain the negative impact the pandemic has had on mental well-being.
- Additionally, one change during the pandemic has been the substantial rise in the use of technology for work and non-work purposes.
- People have been consuming news media, watching television, using social media, and leveraging apps to run errands and do exercise more than ever before (Garfin, 2020).
- It is unclear whether the use of technology has been a buffer or an exacerbator of the negative impact that the pandemic has had on negative emotions (Garfin, 2020; Molino et al., 2020), thus further research is need to examine its moderating effects.

Hypotheses

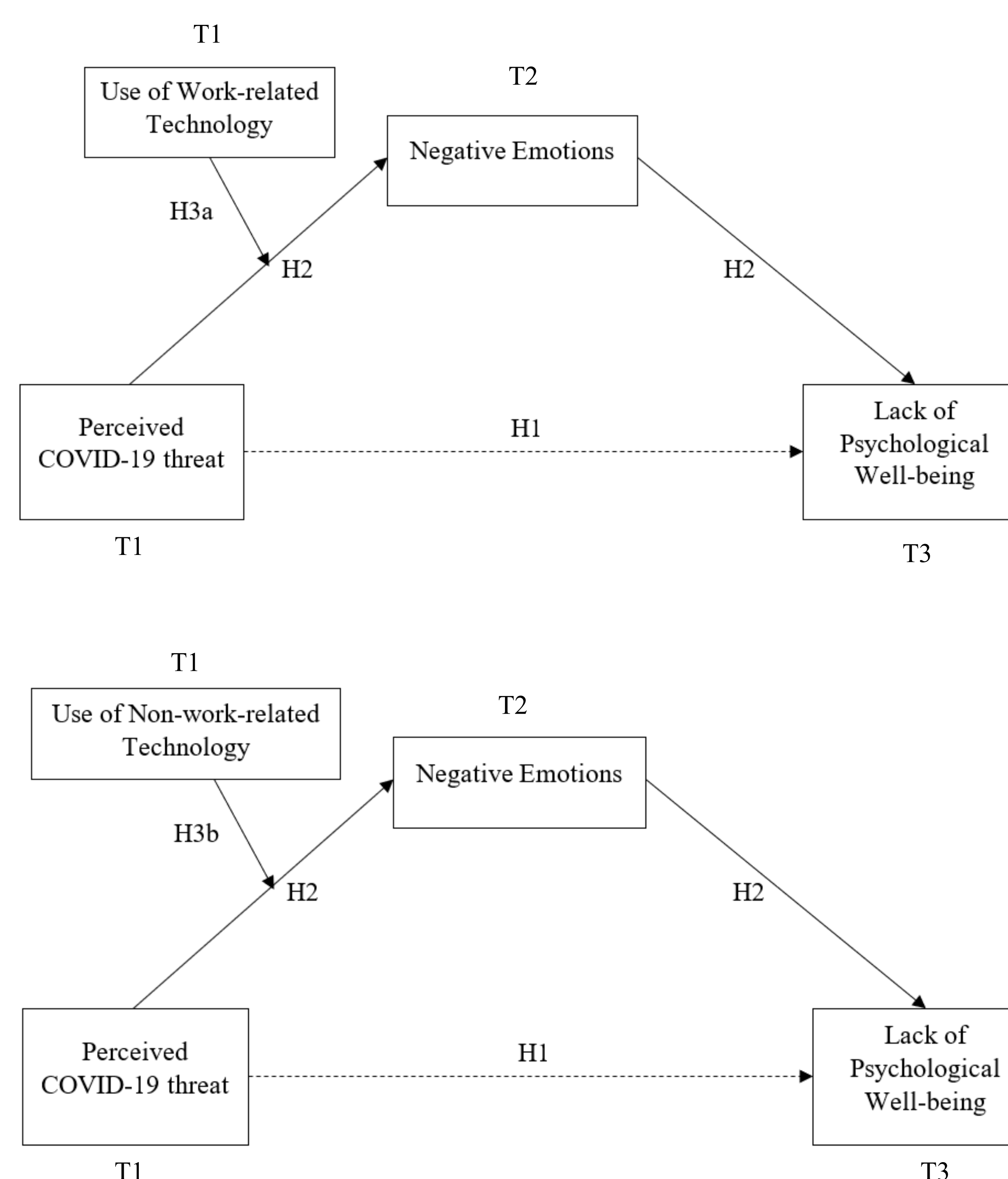
H1: The degree of perceived threat of COVID-19 has a negative effect on psychological well-being.

H2: The degree of perceived threat of COVID-19 has an indirect negative effect on psychological well-being mediated through negative affect.

H3a: The degree of work-related technology use has a moderating effect on the relationship between perceived threat of COVID-19 and negative emotions.

H3b: The degree of non-work-related technology use has a moderating effect on the relationship between perceived threat of COVID-19 and negative emotions.

Hypothesized Models



Sampling Procedure

Sample

- 250 employed individuals at times 1, 2 and 3.

Sampling Strategy

- Individuals that had agreed to be contacted for research studies with Qualtrics were reached through a personalized recruitment email.
- Participants received \$6.22 in compensation for each 15 to 20-minute survey.
- Participants had to be at least 18 years old and employed during the pandemic.
- Participants who failed any of the quality checks included in the surveys were excluded from the final sample.

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Method

- Data for this effort was collected with a Qualtrics survey at three time points.
- *Criterion variable:* psychological well-being was measured at time 3 using the Griep et al. (2016) scale.
- *Predictor variables:* perceived threat of COVID-19 was measured at time 1 using the Major et al. (1998) scale.
- *Moderating variables:* work-related and non-work-related tech use were measured at time 1 using a newly developed scale.
- *Mediating variable:* state negative affect was measured at time 2 using the PANAS scale.
- *Control variable:* age group was assessed in time 1.

Results

- The covariate age was a significant predictor of lack of psychological well-being at time 3 ($R^2 = .018$, $\beta = -.133$, $p < .05$).
- Perceived threat of COVID-19 had a significant positive effect on lack of psychological well-being ($\beta = .381$, $p < .001$), providing support for hypothesis 1.
- Negative emotions significantly partially mediated the relationship between perceived threat of COVID-19 and lack of psychological well-being ($\beta = .172$, Boot SE= .04, 95% CI, .098 to .255), thus partially supporting hypothesis 2.
- Workplace technology use had a significant positive moderating effect on the relationship between perceived threat of COVID-19 and negative emotions (index of moderated mediation = .002, Boot SE= .001, 95% CI, .0001 to .004), providing support for hypothesis 3a.
- Non-workplace technology use did not have a significant moderating effect on the relationship between perceived threat of COVID-19 and negative emotions, providing no support for hypothesis 3b.

Discussion

Limitations

- Study design was observational instead of experimental so no causal inferences can be made.
- Results only generalize to employed individuals.
- Alternative models may be possible (e.g., NE $\rightarrow$ PCT).

Implications

- Although the effect size and the slopes are rather small, this study provides preliminary evidence that work-related technology use during the pandemic increased negative emotions for those threatened by COVID-19.

Future Research

- We recommend examining a wider range of technology uses and their relationships to affect and well-being.