Life Under the COVID-19 Lockdown: On the Relationship Between Intolerance of Uncertainty and Psychological Distress

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CITATION
BRIEF REPORT

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Objective: One of the significant features of the recent lockdown caused by the coronavirus 2019 coronavirus pandemic was the lengthy period of uncertainty that accompanied it. The present study examined a moderated model that links conditions of uncertainty with psychological distress during the coronavirus 2019 lockdown. Method: Married parents in Israel (N = 186), all of whom were working at home during the lockdown, completed several measures, including those assessing intolerance of uncertainty (IU), psychological distress, dispositional optimism, and work arrangements at home. Results: Data analysis supported the association between IU and psychological distress. Two additional measures, optimism and work schedule, were found to act as moderators. Whereas optimism buffered IU’s negative ramifications, the inability to schedule proper work arrangements at home during the lockdown comprised a risk factor for IU and psychological distress. Conclusions: Findings suggest that IU is associated with psychological distress. Theoretical and practical ramifications of the study findings are presented.

Clinical Impact Statement
The novel coronavirus 2019 pandemic is an ongoing crisis that presents immense mental health challenges. The study reflects the contribution of intolerance of uncertainty to psychological distress experienced by Israeli parents during the coronavirus 2019 pandemic lockdown. Whereas optimism buffered the negative impact of intolerance of uncertainty on psychological distress, the inability to schedule proper work arrangements at home during the lockdown comprised a risk factor. Based on the current findings, we encourage designing future interventions, especially focused on reducing uncertainty, that would provide a more effective approach for coping with similar crises in the future.

Keywords: coronavirus 2019, psychological distress, intolerance of uncertainty, lockdown, optimism

The coronavirus 2019 (COVID-19) pandemic is a global health crisis that was declared a pandemic by the World Health Organization on March 11, 2020. In the absence of a vaccine or drug to counter the disease, many countries moved swiftly to adopt far-reaching strategies to limit the virus’s spread, including business shutdowns, social distancing, school closings, movement restrictions, and lockdowns. These events created an atmosphere of general uncertainty concerning the overall state of the economy, finances, social interactions, and health care (Reitie & Daniels, 2020). Along with presenting major challenges, the pandemic also comprises a potential source for traumatic stress (Horesh & Brown, 2020) that may very well impair individuals’ and societies’ mental health and well-being, even among those not infected (Holmes et al., 2020). The prevalence of various mental health problems in the population during the lockdown period increased (Retti & Daniels, 2020). Potential adverse psychological outcomes have prompted several mental health scholars to highlight the need to focus on exploring the predictors of psychological distress during COVID-19-related lockdowns (e.g., Brooks et al., 2020).

In the current study, we examined whether an individual’s inability to cope with uncertainty may be a risk factor and act as a stressor for various psychological outcomes during a lockdown period in Israel. In addition, we addressed the need to expand the current clinical knowledge (Hillen et al., 2017) by examining potential moderators in the relationships between intolerance of uncertainty (IU) and psychological distress. We incorporated the theoretical framework of two pop-
ular stress models—the job demands-resources model (JD-R; Demerouti et al., 2001; Schaufeli & Taris, 2014) and the conservation of resources model (COR; Hobfoll et al., 2018)—to better understand when the relationship between IU and psychological distress can be expected to be stronger. According to both theories, personal resources are defined as an individual’s characteristics that help achieve work goals and allow for more active and effective coping with stress (Hobfoll et al., 2018).

In this context, optimism comprises a common example of a personal resource (Hobfoll et al., 2018; Schaufeli & Taris, 2014). On the other hand, it was suggested that job demands could facilitate the negative impact of stress because they deplete the employee’s mental or physical resources (Hobfoll et al., 2018). An unplanned work schedule has been viewed as a potential job demand (Schaufeli & Taris, 2014). As such, the study explores the moderating role of optimism (a personal resource) and unplanned work schedule (job demand) in the association between intolerance of uncertainty during COVID-19 and psychological distress.

The present study sample included parents who were compelled to endure a drastic change in their daily life routine during the lockdown, a phenomenon yet to be examined empirically. The drastic changes in parents’ lives during COVID-19 were recently described as being “on a magnitude likely not seen since World War II” (Prime et al., 2020, p. 637). The proposed model is presented in Figure 1.

The Negative Impacts of IU

IU has been defined as an individual characteristic “resulting from negative beliefs about uncertainty and its implications” (Carlton et al., 2012, p. 469). The COVID-19 pandemic created a high degree of uncertainty worldwide (Rettie et al., 2020), which challenged some people more than others. Previous research on IU has focused on clinical populations, with findings showing IU to be a significant risk factor in explaining diverse psychopathologies, including anxiety, depression, and panic disorders among clinical and nonclinical populations (McEvey et al., 2019).

In a recent review of IU, Hillen et al. (2017) offered a more integrative model for understanding this phenomenon’s impact on health care. First, they emphasized the need to delineate a specific population and situation when investigating IU. Second, they recommended that future research integrate more theoretical perspectives and include potential moderators (such as personality traits or situational factors) to link the perception of uncertainty to various outcomes. Emerging recent reports have suggested that those unduly challenged by the uncertain time frame associated with the COVID-19 lockdown in the United Kingdom may suffer relatively higher anxiety and depression levels during the lockdown period (Rettie et al., 2020). Our study expands on this recent clinical work by examining psychological distress among employed parents, who may be a psychologically distressed risk group in the context of COVID-19 but have yet to receive clinical attention (Prime et al., 2020). In the context of Hillen et al.’s (2017) integrative model, we acknowledge the potential role of contextual and personal moderating factors. As such, we posited the following hypothesis (H1):

H1: IU during the COVID-19 pandemic would be positively associated with psychological distress for employees working at home with their children during the lockdown.

Optimism as a Potential Moderator

COVID-19–related uncertainty appears to be a potent stressor with psychological consequences. The JD-R theory defines personal resources as “the psychological characteristics or aspects of the self that are generally associated with resiliency and that refer to the ability to control and impact one’s environment success-

Figure 1
The Moderating Role of Unplanned Work Schedule and Optimism in the Association Between IU and Psychological Distress

![Diagram](image)

Note. IU = intolerance of uncertainty.
fully” and, in an employment framework, can be seen as buffering the negative effects of external stressors (Schaufeli, & Taris, 2014, p. 49). In addition, the COR theory identifies optimism as one of the vital personal resources facilitating more active and effective coping behaviors in times of stress and has been shown to moderate the stress–well-being link. In support of this argument, Carver et al. (2010) argued that optimism is a safeguard against psychological suffering in the presence of stressful circumstances. Whereas the moderating role of optimism has not been established empirically, a recent study suggested that it be included as a potential buffer when testing the association between IU and health care outcomes (Hillen et al., 2017). In particular, a stressful event like the COVID-19–related lockdown provides an opportunity to test optimism as a moderator. Building upon both the JD-R and COR theories, we suggest that an individual’s personal resources, such as optimism, can buffer the relationship between IU and psychological distress. Thus, we posited the following hypothesis:

**H2:** Among parents, the positive relationship between intolerance of uncertainty and psychological distress is stronger under lower optimism levels than under higher optimism levels.

**Planned Versus Unplanned Work Schedule**

Research on the effects of nonstandard work schedules is an area of research that precedes the COVID-19 period (Gerstel & Clawson, 2018). Researchers have reported that unplanned work schedules are associated with adverse measures of well-being (e.g., Beutell & O’Hare, 2018) and higher parenting stress (Schneider & Harknett, 2019). In their theoretical review, Spurk and Straub (2020) suggested that in the COVID-19 period, inability to plan work schedule may be associated with negative outcomes because these schedules are often accompanied by an inability to effectively plan nonwork arrangements (such as childcare or rest periods) during the day and the need for the worker to remain on the job extra hours.

The JD-R perspective provides insight into the impact of work schedules by arguing that higher work demands may deplete employees’ reservoir of (mental) resources to a greater extent. Given that unfavorable work shift schedules comprise job demands (Schaufeli & Taris, 2014), the individual’s ability to cope with external stressors would likely be affected (Hobfoll et al., 2018). The present study extends current IU clinical thinking by examining how a job demand (i.e., unplanned work schedule) can moderate the relationship between IU, caused by an external stressor (COVID-19), and well-being.

Although the moderating role of work schedules during the COVID-19 era has yet to be investigated, a recent study indicated that highly dynamic work environments would elicit more negative attitudes and emotions among entrepreneurs having a high intolerance of uncertainty (Deng et al., 2019), whereas another study indicated that unplanned work schedule could moderate work-family conflict and work satisfaction (Beutell et al., 2018). Because unplanned work-at-home schedules during the lockdown are expected to exacerbate employees’ psychological distress when accompanied by IU, we posited the following hypothesis:

**H3:** Unplanned work schedule will moderate the positive relationship between IU and psychological distress, such that for parents who have unplanned work schedule, its association will be stronger.

**Method**

**Participants and Procedure**

All data were collected using online electronic surveys during the early phases of Israel’s lockdown period in April 2020. Respondents for this study were recruited through online advertisements using social media platforms (e.g., LinkedIn, Facebook). Inclusion criteria for the study consisted of being married, employed, and living with children during the lockdown. In addition, only individuals who had not been infected by the virus were included in the study. Completed questionnaires were received from 186 respondents (75% response rate; 55% [102] female), mean participant age was 37.37 (SD = 9.44), with 91% of the participants having completed a minimum of a bachelor’s degree. Approximately 52% of the respondents reported not having a planned working schedule. Participants reported being parents to an average of 2.03 children (SD = 1.01), requiring them to spend, on average, 7.32 hr per day (SD = 5.51) attending to them. In this group, 74% reported that they worked from home during the lockdown, spending an average of 6.28 hr per day (SD = 3.63) on work tasks.

**Measures**

**Intolerance of Uncertainty**

We used the Intolerance of Uncertainty Scale (Carleton et al., 2007) to assess participants’ responses to the current uncertain and ambiguous situation during COVID-19 (e.g., “Uncertainty stops me from having a firm opinion”). The scale’s 12 items are presented on a 5-point Likert-type scale, ranging from 1 (not at all characteristic of me) to 5 (entirely characteristic of me), with participants’ Intolerance of Uncertainty Scale scores comprising the sum of the responses. For the current sample, Cronbach’s alpha = .87.

**Psychological Distress**

Psychological distress was assessed using the Kessler Psychological Distress Scale (Kessler et al., 2002). The 10-item scale measured depression and anxiety symptoms during the 2 weeks previous to the lockdown period (e.g., “During the last 2 weeks, about how often did you feel nervous?”). The items are presented on a 5-point Likert-type scale, ranging from 1 (not at all) to 5 (all the time), with participants’ scores comprising the sum of the responses. For the current sample, Cronbach’s alpha = .90.

**Optimism**

Optimism was measured using the Life Orientation Test–Revised (Scheier & Carver, 1993; e.g., “I’m always optimistic about my future”). Respondents were asked to indicate the degree to which they agree with its six statements on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree),
with participants’ scores comprising the sum of the responses. Cronbach’s alpha for the current sample was .76.

Unplanned Work Schedule at Home

Participants responded to a single dichotomous item assessing whether they have a planned or unplanned working arrangement while working at home during the COVID-19 lockdown. A value of 0 indicated planned work-at-home hours, and a value of 1 indicated unplanned work-at-home arrangements.

Results

For psychological distress, the present sample’s mean was higher ($M = 20.42, SD = 6.65$) than Slade et al.’s (2011) normative sample, $M = 14.50, SD = 0.10$, $t(185) = 12.14, p < .0001$, similar to previous normative population samples measured during COVID-19, $M = 19.60, SD = 3.70$, $t(185) = 1.68, p = .095$ (Rahman et al., 2020). Moreover, psychological distress rates were elevated within the current sample. Among the participants, 11.8% scored above 30, indicating clinically severe psychological distress. These percentages are higher than the normative findings (in which only 3% were indicated as severely distressed; Slade et al., 2011) but comparable with previous samples conducted during the COVID-19, in which 13% reported severe distress (e.g., Rahman et al., 2020). The mean IU score in the present sample ($M = 30.42, SD = 8.54$) is comparable with a nonclinical sample conducted in Europe during COVID-19 ($M = 29.22, SD = 10.96$; $t(185) = 1.91, p = .06$; Mertens et al., 2020). Finally, the mean optimism score in the current sample ($M = 22.38, SD = 3.70$) is comparable to that of a nonclinical sample conducted in Serbia during COVID-19 ($M = 21.86, SD = 4.76$, $t(185) = 1.90, p = .06$; Jovančević & Milčević, 2020). As indicated in Table 1, the current sample’s findings indicated IU to be positively associated with psychological distress, $r = .53, p < .001$. In addition, optimism and unplanned work schedule were also significantly associated with psychological distress ($r = -.40$, $p < .001$; $r = .17$, $p = .04$, respectively).

To examine the combined contribution of IU and the moderating role of optimism and work schedule on psychological distress, we conducted a hierarchical regression analysis. We centered all the independent variables on their grand mean. The dependent variable was set as psychological distress. At Step 1, we entered the control variables: gender ($0 = \text{male}, 1 = \text{female}$) and age. At Step 2, we entered the IU score (the independent variable) and optimism and work schedule (the two moderators). At Step 3, we entered the interaction terms between IU, optimism, and work schedule. The regression results are presented in Table 2.

The hierarchical regression model accounted for 50% of the variance in psychological distress $F(7, 168) = 19.79, p < .001$. IU was positively associated with psychological distress ($\beta = .46$, $p = .001$), supporting H1. Moreover, the interaction between IU and optimism was negatively associated with psychological distress ($\beta = -.16$, $p = .008$). The simple slopes method for interpreting interactions indicated that when optimism was low (1 SD below the mean score), the association between IU and psychological distress was stronger ($\beta = .48$, $SE = .07$, $p = .001$) than when optimism levels were high ($\beta = .23$, $SE = .08$, $p = .003$); thus, H2 was supported. In addition, the interaction between IU and work schedule was significant ($\beta = .33$, $p = .001$). A further simple slope analysis indicated that the association between IU and psychological distress is significant when the employee reported having unplanned work schedule ($\beta = -.48$, $SE = .07$, $p = .001$) but not when reporting planned work schedule ($\beta = -.14$, $SE = .08$, $p = .086$), thus supporting H3.

Discussion

The present investigation contributes to the cumulative knowledge of IU’s potential psychological implications among parents during the pandemic. Our results align with previous findings indicating that IU comprises a significant risk factor for mental and psychological distress during the COVID-19 outbreak (e.g., Rettie et al., 2020). By expanding on previous work, the current findings revealed that optimism (a vital personal resource) and an unplanned work arrangement (a contextual demand) modify the association between IU and psychological distress. Whereas optimism can be viewed as a safeguard against IU consequences, the lack of planned working arrangements during the lockdown can comprise a potential risk factor that exacerbates ambiguity and instability in a complex situation like COVID-19. Building on the JD-R theory, future research in this area may choose to focus on additional potential personal and environmental resources such as spouse and managerial support (Schaufeli & Taris, 2014). Our findings also advance the theoretical knowledge in the field by demonstrating that the possible effects of IU may be facilitated or buffered by both personal and situational variables (Hillen et al., 2017; McEvoy et al., 2019). The current work incorporates previous research findings on IU and uses two stress formulations, COR and JD-R, to better understand the nature and mechanisms of IU in a work-at-home environment. Our findings may contribute to

Table 1

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<th>Variable</th>
<th>M</th>
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<td>-.21**</td>
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<td>6. Gender</td>
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<td>.12</td>
<td>.05</td>
<td>-.10</td>
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Note. IU = intolerance of uncertainty. N = 186. Reliability coefficients are displayed in parentheses on the diagonal. Gender: male = 0, Female = 1.

*p < .05.  **p < .01.  ***p < .001.
bridging the gap between clinical health research and organizational studies.

From a more practical perspective, the study’s findings suggest possible interventions for mitigating IU’s effects on psychological difficulties associated with the COVID-19 phenomenon. Designing psychological interventions to decrease IU and psychological distress during COVID-19 has particular significance for parents, given that parents’ potentially diminished mental functioning has ramifications on their children’s adjustment (Prime et al., 2020). Mental health care services should assist the general population in coping with distress and psychological disturbances. Online interventions and other public services in line with the e-mental health approach (Holmes et al., 2020) should be offered. Previously reported interventions that address negative IU effects, such as cognitive-behavioral therapy, may be adapted to the unique challenges of COVID-19 (Rettie et al., 2020).

Given the significant moderating role of optimism reported here, we recommend that future intervention paradigms focus on increasing optimism levels. Public health strategies and government programs may also suggest nationwide strategic planning and first-aid services to reduce the incidence of psychological distress during the various phases of COVID-19. For example, by providing timely and accurate information regarding health tips and ways for managing parents’ uncertainty at work and at home, public health officials would help reduce negative outcomes associated with IU. Finally, our findings highlight the risks of unplanned work arrangements at home, contributing to a deeper understanding of unplanned employment setups. In many organizations during the lockdown, employees began working at home without having received any guidance on how to manage their new work environment. Therefore, we recommend that new policies and regulations be formulated to provide support for workers in times of COVID-19.

Several study limitations must be noted. First, the data were all self-report and correlational in nature. Nevertheless, this methodology is comparable with those adopted by previous studies examining IU and psychological distress in general (for a meta-analysis, see McEvoy et al., 2019) and during COVID-19 in particular (e.g., Rettie et al., 2020). However, future effects from experimental and interventional type research and multivariate data collection would provide more direct evidence regarding causation. In addition, because lockdowns comprise stressful periods with potentially long-lasting consequences (Brooks et al., 2020), future work should track the long-term impact of IU using a longitudinal design. Finally, the current research was conducted in a nonclinical sample. Thus, practitioners working with clinical populations should apply the findings of this study with caution. In conclusion, given the expected proliferation of unconventional work-at-home arrangements, investigators from various disciplines must continue analyzing and formulating models for predicting psychopathologies to suggest methods for diminishing its deleterious psychological effects of IU on people’s lives.

References


### Table 2

<table>
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<td>.14*</td>
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<td>.38***</td>
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<td>.07</td>
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<td>IU</td>
<td>1.44</td>
<td>.08</td>
<td>.18**</td>
</tr>
<tr>
<td></td>
<td>Optimism</td>
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<td>-2.5***</td>
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<td>-1.6**</td>
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Note. IU = intolerance of uncertainty.

* p < .05.  ** p < .01.  *** p < .001.


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