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Laughing all the way to the lockdown: On humor, optimism, and well-being during COVID-19

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ABSTRACT

The present paper examined the contribution of optimism and humor styles to well-being during the COVID-19 lockdown period. Furthermore, we examined whether these direct associations were mediated by two common COVID-19 challenges—work-family interface (WFI) and COVID-19 fears. Israeli employees (N = 356) completed an online survey during lockdown restrictions (69% women, 57.20% held academic degrees, M age = 30.70, age-range = 20-61). Both optimism and adaptive humor revealed a positive and direct effect on well-being. Furthermore, mediation analyses indicated that both fear of COVID-19 and WFI mediated the direct associations between optimism and well-being, as well as the direct associations between maladaptive humor and well-being, whereas WFI mediated the association between adaptive humor and well-being. These findings stress the need to adapt interventions derived from positive psychology to enhance well-being during these challenging times of COVID-19.

1. Introduction

COVID-19 is a health pandemic that is viewed as one of the largest global traumatic stressors (Horesh & Brown, 2020). Due to the spread of the virus and increasing infection rates, most countries, including Israel, moved swiftly to enforce lockdowns and restrict movement. The lockdown is a potentially stressful situation accompanied by fears of infection and economic uncertainty (Reizer et al., 2020). Thus, due to the COVID-19 pandemic, many individuals worldwide experienced increased fears and worries of being infected (Aborsu et al., 2020), lost boundaries between work and home (Vaziri et al., 2020), and prolonged periods of decreased well-being, even among those not infected by COVID-19 (Holmes et al., 2020). These adverse psychological outcomes prompted several mental health scholars to stress the need to explore the predictors of individual well-being during COVID-19 in general (Holmes et al., 2020) and during lockdowns in particular (Reizer et al., 2020).

Several studies have indicated that personality traits can contribute to individual well-being during COVID-19, such as resilience (Paredes et al., 2021) and Big 5 dimensions (López-Núñez et al., 2020). The current study expands this line of research by focusing on the direct and indirect associations between personality traits such as humor and optimism in predicting well-being during Israel's lockdown period. Both traits of optimism (Hobfoll et al., 2018) and humor (Kuiper, 2012) play a prominent role in stress-reducing behaviors, act as a protective element in adverse situations, and may promote individuals' well-being (Alarcon et al., 2013; Martin & Ford, 2018). Humor and optimism also comprise two of the character strengths included in the Values in Action model (VIA; Peterson & Seligman, 2004). Both of these strengths are related to the virtue of self-transcendence, which assists individuals in seeing the "general picture" in their connection to the larger meaning and purpose of their existence. We anticipated this virtue to be especially beneficial in the era of COVID-19.

Moreover, we sought to expand the current positive psychology perspective of humor as a character strength. Positive psychology focuses primarily on the positive aspects of humor; it has yet to acknowledge that the relative absence of maladaptive humor styles (e.g., using sarcastic or aggressive humor to deride others) may have significance upon examining humor and well-being (Kuiper, 2012). As such, we adopted a broader perspective by suggesting that optimism and adaptive humor would associate positively with well-being, whereas maladaptive humor would associate negatively with well-being. Thus, our study's first research goal was to examine the direct relationships between adaptive humor, maladaptive humor, optimism, and well-being during the COVID-19 lockdown. Our second goal was to examine whether the resources of optimism and humor would protect the individual from the negative consequences of COVID-19 fear and work-
family interface (WFI) during the lockdown. This second goal would entail examining the indirect effect of personality resources on well-being through these two detrimental aspects (maladaptive humor and fear of COVID-19).

1.1. The direct associations between humor, optimism, and well-being

In the past decade, the humor literature has provided considerable evidence pointing to humor as a multi-faceted construct (Martin et al., 2003). Affiliative humor is the tendency to create respectful and accepting humor that amuses others and leads to interpersonal rewards. Self-enhancing humor is the tendency to maintain a humorous perspective on life and may be beneficial for coping with adverse life circumstances or events. Self-defeating humor indicates using humor against one's own self to entertain others. Finally, aggressive humor refers to the use of sarcastic and cynical humor to humiliate or harm others. This conceptualization, which has been widely adopted and validated, assumes that humor serves both adaptive (i.e., self-enhancing, affiliative) and maladaptive (i.e., aggressive, self-defeating) functions with respect to well-being (Kuiper, 2012). Whereas adaptive humor is a health-promoting expression that increases well-being due to its tendency to facilitate social interaction and self-efficacy, maladaptive humor styles either jeopardize ties within one's social group or are directed against oneself and tend to be detrimental to one's well-being (Schneider et al., 2018).

To our knowledge, only few studies have addressed the role of humor during the COVID-19 crisis. For instance, the use of humor as a subscale of coping strategy was found to be associated with psychological well-being during COVID-19 among individuals with a chronic illness and disability (Umucu & Lee, 2020). In addition, adaptive humor such as self-enhancing and affiliative types are both negatively correlated with perceived hopelessness in response to the threat of COVID-19, whereas maladaptive humor (both aggressive and self-defeating humor) showed opposite patterns (Olah & Ford, 2021). In light of these findings, we anticipated that humor's adaptive use could contribute to well-being during the pandemic, whereas maladaptive humor would comprise a risk factor.

H1a. : Adaptive humor is positively related to well-being during a lockdown.

H1b. : Maladaptive humor is negatively related to well-being during a lockdown.

Optimism has been defined as “the generalized, relatively stable tendency to expect good outcomes across important life domains” (Scheier & Carver, 2018, p. 1082). A rich and robust body of literature has delineated how optimism is associated with life satisfaction, happiness, and general psychological well-being (Alarcon et al., 2013). These effects align with the conceptualization of Hobfoll et al.’s (2018) conservation of resources theory (COR), which considers optimism a key personal resource contributing directly to individuals’ well-being. Furthermore, optimism may provide a reservoir of resources on which to draw in times of resource loss. Moreover, optimism can also serve as a potential safeguard of well-being upon coping with stressful events due to the optimistic individual’s inclination to adopt active problem-solving strategies (Forgeard & Seligman, 2012). Optimism remains an important predictor of well-being even after accounting for other coping behaviors (Chang et al., 2020). Evidence has been reported linking optimism and psychological distress during Israel’s first COVID-19 lockdown (Reizer et al., 2021), and others suggested that optimism can serve as a safeguard against anxiety and depression while facing Italy's Phase 1 lockdown (Tommasi et al., 2020). Given the benefits of optimism during the current pandemic, we posit the following hypothesis:

H2. : Optimism is positively related to well-being during a lockdown.

1.2. The mediating role of COVID-19 fear

One of the most common psychological manifestations of COVID-19 is fear. Extraordinary situations such as disease outbreaks and epidemics tend to trigger fear (Ahorsu et al., 2020). It has been suggested that COVID-19 fear is associated with poor mental health and decreased well-being in the US (Fitzpatrick et al., 2020), Iran (Ahorsu et al., 2020), and Israel (Reizer et al., 2020). Considering all these, the study of fear is critical for psychological well-being, and we anticipate that the positive associations between humor, optimism, and well-being would be mediated by the decrease in the individual COVID-19 fear.

We suggest that humor can decrease the fear of COVID-19. Frankl (1963) addressed the role of humor among Holocaust survivors, arguing that “Humor was another of the soul's weapons in the fight for self-preservation. It can afford an aloofness and an ability to rise above any situation, even if only for a few seconds” (pp. 43–44). A large part of humor’s “self-protective” function derives from its ability to distance oneself from the stressful event and provide the individual a sense of mastery over uncontrollable aversive circumstances. Furthermore, humor improves one's social interactions and promotes more satisfying interpersonal relationships. These positive qualities contribute to an improved ability to maintain positive psychological functioning while coping with stress (Kuiper, 2012; Martin & Ford, 2018), and it may also be beneficial in times of COVID-19. Recent work offers some support to our argument by indicating positive associations between coping humor (similar to self-enhancing humor) and COVID-19 fear (Saricali et al., 2020). However, whereas qualities of positive humor help alleviate fear (Martin & Ford, 2018), maladaptive humor would not offer the same benefits. Although the relationship between maladaptive humor and COVID-19 fear has yet to be examined, determining the role of humor's positive and negative aspects concerning COVID-19 fears appears to be a valuable research direction. Expanding on previous work, we pose the following hypothesis:

3a. : Fear of COVID-19 mediates the associations between adaptive and maladaptive humor and well-being.

COVID-19 fear may mediate the link between dispositional optimism and well-being. According to expectancy-based theory (Carver & Scheier, 2001), positive beliefs in future outcomes will motivate the individual to cope more adaptively in the face of stress and adversity. Supporting this notion, optimism was shown to be associated with active and adaptive coping strategies, which help individuals reduce, manage, or eliminate stress (Forgeard & Seligman, 2012). Furthermore, as optimism is most effectively manifested in circumstances that offer little personal control (Alarcon et al., 2013), it is reasonable to assume that optimists would be less fearful of COVID-19. Indeed, Jovancevic and Milicevic (2020) reported that optimists showed lower levels of fear (e.g., fear of food shortage) and higher levels of engagement in preventive behaviors. However, the mediating mechanism of COVID-19 fear in the association between optimism and well-being has yet to be established.

H3b. : Fear of COVID-19 mediates the association between optimism and well-being.

1.3. The mediating role of WFI

Another prominent factor that can impair well-being during COVID 19 is WFI. During COVID-19, especially during a lockdown, many employees reported losing boundaries between work and home (Vaziri et al., 2020). Shouldering multiple roles is typically considered challenging and stressful, and indeed, individuals with increased WFI also reported increased anxiety and depression and lower levels of life satisfaction during a COVID-19 lockdown in Spain (López-Núñez et al., 2020). Therefore, it seems vital to more fully understand the effects of WFI and examine its mediating role in the associations between personal resources and well-being.
Personality traits may shape the individuals’ perceptions of work and family situations. Specifically, the work-home resources model (WH-R; ten Brummelhuis & Bakker, 2012), based on the COR assumptions (Hobfoll et al., 2018), suggests that individuals possessing key resources (e.g., optimism) cope better with WFI because they can better deal with contextual demands as they deploy other contextual resources. As such, the benefits of optimism may include a more active and effective coping style and less resource depletion due to work-family demands during a COVID-19 lockdown. These individuals may be better able to handle work and family-related demands and, consequently, avoid the negative impact of decreased well-being.

The relationship between humor style and WFI is underexplored. However, it has been suggested that adaptive humor comprises a resilience mechanism, as it helps fosters social support and facilitates emotion regulation to ensure that personnel can act effectively under stressful circumstances (Kuiper, 2012). Therefore, we presume that adaptive humor can also be regarded as a personality resource and would thus negatively relate to WFI and enhance well-being. In contrast, maladaptive humor can be detrimental to oneself or others and impedes effective problem solving (Kuiper, 2012). Moreover, maladaptive humor could deplete one’s personal resources, increase WFI, and decrease well-being. We thus offer the following hypotheses:

H4a. : WFI mediates the associations between humor styles and well-being during a lockdown.
H4b. : WFI mediates the association between optimism and well-being during a lockdown.

2. Materials and method

2.1. Participants and procedure

We collected questionnaires during Israel’s 2nd lockdown (September 24th –October 17th 2021). To be eligible for the study, the participants had to be physically healthy, in relationships, employed during the lockdown, and currently not diagnosed with COVID-19. A sample of 356 participants completed the online survey voluntarily (87.47% response rate), comprising 69% females (Mage = 30.07, SD = 10.34; Rangeage = 20–61), and 57.20% of the participants held academic degrees. Among the participants, 47% were married, and the remainder were cohabiting. The mean relationship length was 7.46 years. The participants’ average weekly work hours during the lockdown were 33.95 (SD = 11.42).

2.2. Measurements

2.2.1. Dispositional optimism

Optimism was measured using the 3-item Life Orientation Test-Revised (LOT-R; Scheier et al., 1994). Items are presented on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree); sample item: “I’m always optimistic about my future.” The optimism score comprises the sum of the responses (α = 0.83).

2.2.2. WFI

A six items version was used to measure WFI (Matthews et al., 2010). Items were presented on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree); sample item: “My work keeps me from my family activities more than I would like” (α = 0.75).

2.2.3. Fear of COVID-19

The 7-item Fear of COVID-19 Scale (Ahorsu et al., 2020; e.g., “I am most afraid of Corona”) was presented on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate a greater fear of COVID-19 (α = 0.88).

2.2.4. Well-being

Well-being was measured by the 5-item WHO Well-Being Index (World Health Organization, 1998; e.g., [during the last two weeks...] “I have felt calm and relaxed”). The items are presented on a 6-point Likert-type scale, ranging from 0 (at no time) to 5 (all of the time). The final sum score is multiplied by 4 (α = 0.85).

2.2.5. Humor styles

The 32-item Humor Styles Questionnaire (HSQ; Martin et al., 2003) is presented on a 7-point Likert-type scale, ranging from 1 (totally agree) to 7 (totally disagree). Sixteen items assessed adaptive humor—affiliative humor style and self-enhancing humor (e.g., “I enjoy making people laugh”; α = 0.84). Sixteen items measured maladaptive humor—aggressive humor style and self-defeating humor (e.g., “If someone makes a mistake, I will often tease them about it”; α = 0.84).

3. Results

3.1. Preliminary analysis and descriptive statistics

A factor analysis (CFA) using SEM was performed before testing for the hypothesized model. The CFA consisted of the following research variables: adaptive humor, maladaptive humor, optimism, fear of COVID-19, WFI, and well-being. As adaptive and maladaptive humor comprised 16 items each, we used the parceling method. Humor items were assigned to four parcels (Little et al., 2002) and were found to be normally distributed. The measurement model showed acceptable fit with the data, and all items loaded more than 0.40 in their latent factor: \( \chi^2(351) = 593.364, p = .00, \chi^2/df = 1.69, \text{CFI} = 0.942, \text{TLI} = 0.933, \text{RMSEA} = 0.044. \) The single-factor measurement model for the measurement scale showed poor fit with the data, \( \chi^2(377) = 3233.952, p = .00, \chi^2/df = 8.578, \text{CFI} = 0.322, \text{GFI} = 0.538, \text{TLI} = 0.269, \text{RMSEA} = 0.146. \) We also found a significant chi-square difference when we compared the 6-factor model with the single-factor model \( \Delta \chi^2(536) = 5593.069, p < .001. \)

Means, standard deviations, and correlations are presented in Table 1. Optimism and adaptive humor were significantly associated with well-being and WFI. Moreover, maladaptive humor was positively associated with COVID-19 fear, while optimism was negatively associated with COVID-19 fear. The associations between COVID-19 fear, WFI, and well-being were negative and significant. Finally, maladaptive humor and well-being correlations were nonsignificant. However, it has been strongly suggested that researchers may proceed with mediation analysis, even when the direct relationships are nonsignificant, as indirect effects can provide different outcomes (Shrout & Bolger, 2002).

3.2. Model testing

SEM was used to examine the study’s research hypotheses. The results of the hypothesized model provided good model fit, \( \chi^2(353) = 629.430; \chi^2/df = 1.78, p < .001; \text{TLI} = 0.924; \text{CFI} = 0.934; \text{SRMR} = 0.006; \text{RMSEA} = 0.047. \) Nonsignificant associations were revealed between adaptive humor and well-being \( \beta = 0.07, p = .23 \) as well as between maladaptive humor and well-being \( \beta = 0.004, p = .95. \) This implies that COVID-19 fear and WFI fully mediate the direct associations between humor styles and well-being. However, the direct association between optimism and well-being proved significant \( \beta = 0.30, p < .001; \) see Fig. 1.

To examine the mediation hypotheses, the bias correction bootstrap technique using the confidence-interval method was applied. Supporting H3, COVID-19 fear mediated the maladaptive humor’s effect on well-being (indirect effect = \( -0.007, p = .017, 95\% \text{CI} = [-0.017, -0.010] \)), as well as optimism’s effect on well-being (indirect effect = \( 0.043, p = \) (377))

\[ \text{H4a. : WFI mediates the associations between humor styles and well-being during a lockdown.} \]

\[ \text{H4b. : WFI mediates the association between optimism and well-being during a lockdown.} \]

\[ \chi^2(351) = 593.364, p = .00, \chi^2/df = 1.69, \text{CFI} = 0.942, \text{TLI} = 0.933, \text{RMSEA} = 0.044. \]

\[ \chi^2(377) = 3233.952, p = .00, \chi^2/df = 8.578, \text{CFI} = 0.322, \text{GFI} = 0.538, \text{TLI} = 0.269, \text{RMSEA} = 0.146. \]

\[ \Delta \chi^2(536) = 5593.069, p < .001. \]

\[ \text{Well-being was measured by the 5-item WHO Well-Being Index} \]

\[ \text{The 32-item Humor Styles Questionnaire (HSQ; Martin et al., 2003)} \]

\[ \text{The 7-item Fear of COVID-19 Scale (Ahorsu et al., 2020; e.g., “I am most afraid of Corona”)} \]

\[ \chi^2(353) = 629.430; \chi^2/df = 1.78, p < .001; \text{TLI} = 0.924; \text{CFI} = 0.934; \text{SRMR} = 0.006; \text{RMSEA} = 0.047. \]

\[ \Delta \chi^2(536) = 5593.069, p < .001. \]

\[ \text{The psychometric properties of the study measures, beyond the provided Cronbach alpha values for the current sample, are available upon request.} \]

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Adaptive humor and maladaptive humor were found to predict how people feel and respond during the COVID-19 pandemic. Deploying adaptive humor and optimism contribute to individuals' well-being during a lockdown period. These findings support positive psychology's theoretical perspective by indicating that optimism, humor, and adaptive humor enhance our psychological resistance to COVID-19 challenges, especially as the crisis lengthens. Furthermore, it has been suggested that a character strength such as humor may modify and "grow" following significant personal trauma (Peterson et al., 2008). As such, we further suggest that discerning changes in individuals' levels of optimism and their use of humor during this pandemic period might comprise alarming signals that need to be addressed.

Our findings identify optimism as a significant marker of well-being, aligning with pre-COVID-19 work (Alarcon et al., 2013) as well as during the COVID-19 crisis (Tommasi et al., 2020). COR theory views optimism as a key personality resource of resilience. Congruent with these arguments, the current findings expand our pre-COVID-19 knowledge by suggesting that optimistic individuals cope better with both WFI and COVID-19 fears, ultimately enhancing well-being. Thus, we may suggest that optimism not only implies an enhanced tendency to perceive happiness as a stable state, but it also helps overcome difficulties such as WFI and fearful feelings in times of great challenges.

Optimism-promoting interventions comprising various activities, such as the Best Possible Self, have solid empirical support for increasing optimism (for a meta-analysis, see Malouff & Schutte, 2016). Humoristic interventions (Martin & Ford, 2018) and simple positive psychology interventions, such as use your resources and count your blessings (Peeters et al., 2020), may also be useful tools to confront COVID-19 challenges, especially as the crisis lengths. Furthermore, it has been suggested that a character strength such as humor may modify and "grow" following significant personal trauma (Peterson et al., 2008). As such, we further suggest that discerning changes in individuals' levels of optimism and their use of humor during this pandemic period might comprise alarming signals that need to be addressed.

These findings should be considered in light of several limitations. First, self-report measures may be problematic for assessing socially undesirable traits or behaviors that could be viewed negatively during a pandemic. Secondly, the cross-sectional nature of the study limits our ability to infer causality. Longitudinal studies examining the response to COVID-19 could enhance the current findings by demonstrating how personality traits may buffer the fluctuations in WFI, fears, and well-being over time as the nature of the pandemic alters and as individuals learn new coping styles. Future studies might also examine other aspects of COVID-19 fears, such as fear of becoming infected, fear of contact with possibly contaminated objects, fear of foreigners who may have imported the virus, or fear of the pandemic's socioeconomic consequences. Furthermore, future work might examine the suggested model among individuals with preexisting medical risk factors (such as cardiovascular disease and mental health disorders).

It would be valuable to reexamine the findings from a cross-cultural perspective. Additionally, future research should move beyond the singular perception of humor's positive contribution to empirically examine the dynamics of adaptive and maladaptive humor—and specifically, during the COVID-19 crisis—to explore the unique mechanisms operating in the associations between different types of humor and employee health.

4. Discussion

Our study contributes to the growing interest in personality's role in predicting how people feel and respond during the COVID-19 pandemic. Addressing our study's first research goal, our findings indicate that deploying adaptive humor and optimism contribute to individuals' well-being, whereas maladaptive humor is negatively associated with well-being during a lockdown period. These findings support positive psychology's perspective, arguing that individuals with adaptive humor and optimism possess more of the transcendence virtue, which focuses on creating a distracting perspective on the present and a positive perspective "toward the future and the goodness that it might hold" (Peterson & Seligman, 2004, p. 526), even in times of a pandemic. Moreover, optimism and adaptive humor help individuals perceive the combination of work and family roles during COVID-19 as less conflicting, ultimately protecting their well-being. Thus, the current study expands positive psychology's theoretical perspective by indicating that optimism and adaptive humor enhance our psychological resistance to COVID-19 challenges during lockdown by constructing protective coping mechanisms that ultimately enhance individuals' well-being.

Our second goal was to examine mechanisms that mediate associations between optimism, humor, and well-being. Our analysis indicated that mechanisms of WFI and fear could mediate the associations between humor and well-being during COVID-19. Specifically, whereas WFI mediated the associations between adaptive humor and well-being, both COVID-19 fear and WFI mediated the associations between maladaptive humor and well-being. This pattern demonstrates how specific humor styles may have disparate relationships with well-being and COVID-19 challenges. Adaptive humor appears to play a valuable role in managing stressful work-family challenges, thus enhancing employees' well-being. However, maladaptive humor impairs one's capacity to cope with the WFI and increases one's COVID-19 fears, which, in turn, impairs employee well-being during a lockdown. Importantly, future research should move beyond the singular perception of humor's positive contribution to empirically examine the dynamics of adaptive and maladaptive humor—and specifically, during the COVID-19 crisis—to explore the unique mechanisms operating in the associations between different types of humor and employee health.

### Table 1: Means, standard deviations, and zero-order bivariate correlations.

| Variable                  | Mean  | SD   | 1     | 2     | 3     | 4     | 5     | 6     |
|---------------------------|-------|------|-------|-------|-------|-------|-------|-------|
| Well-being                | 55.77 | 20.29| (0.85)| (0.00)| (0.00)| (0.00)| (0.00)| (0.00)|
| Adaptive humor            | 70.71 | 13.20| 0.15**| (0.84)| (0.00)| (0.00)| (0.00)| (0.00)|
| Maladaptive humor         | 47.07 | 15.03| -0.08 | 0.20**| (0.84)| (0.00)| (0.00)| (0.00)|
| Optimism                  | 10.84 | 2.61 | 0.34***| 0.21***| -0.02 | (0.83)| (0.00)| (0.00)|
| WFI                       | 2.35  | 0.66 | -0.29***| -0.10 | 0.24***| 0.18***| (0.75)| (0.00)|
| Fear of COVID-19           | 15.49 | 5.48 | -0.27***| -0.09 | 0.10* | -0.15**| 0.19***| (0.88)|

Note. Reliabilities are displayed on the diagonal.

*p < .05

**p < .01

***p < .001

.007, 95% CI = [0.100, 0.098]). However, the mediating role of COVID-19 fear on the associations between adaptive humor and well-being proved nonsignificant (indirect effect = 0.006, p = .085, 95% CI = [-0.001, 0.018]). The findings of the hypothesized model support the mediating role of both WFI and COVID-19 fear. Supporting H4, WFI mediated the effect of adaptive humor on well-being (indirect effect = 0.015, p = .001, 95% CI = [0.005, 0.034]), maladaptive humor on well-being (indirect effect = -0.190, p < .001, 95% CI = [-0.034, -.009]), and optimism on well-being (indirect effect = 0.059, p = .008, 95% CI = [0.015, 0.131]).

### Fig. 1: Mediation effects of WFI and fear of COVID-19 in the associations between humor, optimism and well-being. Note. Path coefficients are presented in a standardized form, *p < .05 **p < .01; ***p < .001.
CRediT authorship contribution statement

Abira Reizer: Conceptualization, Methodology, Formal analysis, Writing – original draft, Supervision. Yifat Munk: Investigation, Project administration. Lotem Katz Frankfurter: Investigation, Project administration.

References

Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The fear of COVID-19 scale: Development and initial validation. International Journal of Mental Health and Addiction. https://doi.org/10.1007/s11469-020-00270-8.

Alarcon, G. M., Bowling, N. A., & Khazon, S. (2013). Great expectations: A meta-analytic examination of optimism and hope. Personality and Individual Differences, 54(7), 621–627. https://doi.org/10.1016/j.paid.2012.12.004.

Carriedo, A., Cecchini, J. A., Fernández-Rio, J., & Méndez-Giménez, A. (2020). Resilience and physical activity in people under home isolation due to COVID-19: A preliminary evaluation. Mental Health and Physical Activity, 19. https://doi.org/10.1016/j. mhpa.2020.100361.

Carver, C. S., & Scheier, M. F. (2001). Optimism, pessimism, and self-regulation. In E. C. Chang (Ed.), Optimism & pessimism: Implications for theory, research, and practice (pp. 31–51). American Psychological Association. https://doi.org/10.1038/385-002.

Chang, E. C., Yi, S., Liu, J., Kamble, S. V., Zhang, Y., Shi, B., … Chang, O. D. (2020). Coping behaviors as predictors of hedonic well-being in Asian Indians: Does being optimistic still make a difference? Journal of Happiness Studies, 21(1), 289–304. https://doi.org/10.1007/s10902-019-00087-w.

Fitzpatrick, K. M., Harris, C., & Drawve, G. (2020). Fear of COVID-19 and the mental health consequences in America. Psychological Trauma: Theory, Research, Practice, and Policy, 12, S17–S21. https://doi.org/10.1037.trap0000924.

Forgoard, M. J. C., & Seligman, M. E. P. (2012). Seeing the glass half full: A review of the research on optimism and pessimism. Journal of Research in Personality, 37 (1), 48–75. https://doi.org/10.1016/j.jrp.2009.06.002.

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. Structural equation modeling. 9(3), 411–433. https://doi.org/10.1207/S15328007SEM0903_1.

López-Núñez, M. I., Díaz-Morales, J. F., & Aparicio-García, M. E. (2020). Individual differences, personality, social, family and work variables on mental health during COVID-19 outbreak in Spain. Personality and Individual Differences, 172. https://doi.org/10.1016/j.paid.2020.109566.

Malouf, J. M., & Schutte, N. S. (2017). Can psychological interventions increase optimism? A meta-analysis. The Journal of Positive Psychology, 12(6), 594–604. https://doi.org/10.1080/17439760.2016.1221122.

Martin, R. A., & Ford, T. (2018). The psychology of humor: An integrative approach. Academic Press.

Martin, R. A., Publik-Doris, P., Larsen, G., Gray, J., & Weir, K. (2003). Individual differences in uses of humor and their relation to psychological well-being: Development of the humor styles questionnaire. Journal of Research in Personality, 37 (1), 48–75. https://doi.org/10.1016/S0022-3514(02)00034-2.

Matthews, R. A., Kast, L. M., & Barnes-Farrell, J. L. (2010). A short, valid, predictive measure of work-family conflict: Item selection and scale validation. Journal of Occupational Health Psychology, 15(1), 75–90. https://doi.org/10.1037/a0017443.

Olah, A. R., & Ford, T. E. (2021). Humor styles predict emotional and behavioral responses to COVID-19. HUMOR, 34(2), 177–199. https://doi.org/10.1515/humor-2021-0009.

Parades, M. R., Apoalavaz, A., Fernandez-Robin, C., Hartmann, P., & Vázquez-Martínez, D. (2021). The impact of the COVID-19 pandemic on subjective mental well-being: The interplay of perceived threat, future anxiety and resilience. Personality and Individual Differences, 170. https://doi.org/10.1016/j.paid.2020.110455.

Petersen, E. C., van Steenbergen, E. F., & Ybema, J. F. (2020). Positive psychological micro-interventions to improve the work-family interface: Use your resources and count your blessings. Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.00275.

Petersen, C., & Seligman, M. E. P. (2004). Character strengths and virtues: A handbook and classification (Vol. 1). Oxford University Press.

Reizer, A., Koslowsky, M., & Gefen, L. (2020). Living in fear: The relationship between fear of COVID-19, distress, health, and marital satisfaction among Israeli women. Health Care for Women International, 1–21. https://doi.org/10.1080/07399332.2020.1829626.

Reizer, A., Gefen, L., & Koslowsky, M. (2021). Life under the COVID-19 lockdown: On the relationship between intolerance of uncertainty and psychological distress. Psychological Trauma: Theory, Research, Practice, and Policy. Advance online publication. https://doi.org/10.1017/trap.2021.7.

Saricili, M., Sants, A. C., Sants, B., Gocet-Tekin, E., & Griffiths, M. D. (2020). Fear of COVID-19, mindfulness, humor, and hopelessness: A multiple mediation analysis. International Journal of Mental Health and Addiction. https://doi.org/10.1007/s11469-020-00419-5.

Scheier, M. F., & Carver, C. S. (2018). Dispositional optimism and physical health: A long look back, a quick look forward. American Psychologist, 73(9), 1082–1094. https://doi.org/10.1037/amp0000384.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the life orientation test. Journal of Personality and Social Psychology, 67(6), 1063–1078. https://doi.org/10.1037/0022-3514.67.6.1063.

Schneider, M., Voracek, M., & Tran, U. S. (2018). “A joke a day keeps the doctor away?” meta-analytical evidence of differential associations of habitual humor styles with mental health. Scandinavian Journal of Psychology, 59(3), 289–300. https://doi.org/10.1111/sjop.12452.

Shrot, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. Psychological Methods, 7(4), 422–445. https://doi.org/10.1037//0882-989X.7.4.422.

Tommasi, M., Toro, F., Arnz, S., Carriere, A., Coupe, M. M., Devastato, M. D., Saggino, A. (2021). Physical and psychological impact of the phase one lockdown for COVID-19 on Italians. Journal of Applied Social Psychology, 1–23. https://doi.org/10.1111/jasp.12452.

Umemu, E., & Lee, B. (2020). Examining the impact of COVID-19 on stress and coping strategies in individuals with disabilities and chronic conditions. Rehabilitation Psychology, 65, 193–198. https://doi.org/10.1037/rep0000328.

Vazire, H., Casper, W. J., Wayne, J. H., & Matthews, R. A. (2020). Changes to the work-family interface during the COVID-19 pandemic: Examining predictors and implications using latent transition analysis. Journal of Applied Psychology, 105, 1073–1087. https://doi.org/10.1037/apb0000819.

World Health Organization. (1998). Well-being measures in primary health care: The DeCape project. https://apps.who.int/iris/bitstream/handle/10665/60426/WHO_MSD_MSB_1998.1.pdf.

Jovančević, A., & Milicević, N. (2020). Optimism-pessimism, conspiracy theories and general trust as factors contributing to COVID-19 related behavior: A cross-cultural study. Personality and Individual Differences, 167. https://doi.org/10.1016/j.paid.2020.110216.

Kuijper, N. A. (2012). Humor and resiliency: Towards a process model of coping and growth. Europe’s Journal of Psychology, 8, 475–491. https://doi.org/10.5964/ejop.8.4.2.