Meaning in life as a mediator of the relationship between COVID-19 stress and COVID-19 burnout in general population

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Abstract
Purpose – There is a link between stress experienced during adversity and negative outcomes, which demands the identification of mechanisms to minimize the harm. However, to date, these mechanisms remain unclear. This study will help us understand how to reduce the negative impact of COVID-19 stress (CS) on COVID-19 burnout (CB). The purpose of this study is to investigate the mediating role of meaning in life (MIL) in the relationship between CS and CB in the general population.

Design/methodology/approach – During the second wave of COVID-19 in India, 514 adults aged 18–75 years (M = 33.11 ± SD = 10.42) completed the survey online. Testing of the model was conducted using the structural equation modeling technique.

Findings – Results indicated that CS had a positive impact on CB. CS explained 49% of the variance in CB. A mediation model was used to examine the relationship between CS and CB through MIL, which was also supported.

Practical implications – These findings explain the efficacy of MIL in reducing harm. It is imperative to promote MIL to prevent negative outcomes. Instead of treating symptoms of disorders, psychologists, mental health professionals and health-care workers should focus on prevention.

Originality/value – The model explains the underlying mechanisms between CS and CB. This is among the very few studies attempting to explore these variables among the general population. Therefore, it adds to the literature on ways to reduce the negative impact of stressors.

Keywords COVID-19 stress, COVID-19 burnout, Meaning in life, Pandemic, Positive psychology

Introduction
The outbreak of coronavirus infection (COVID-19), declared a global pandemic in March 2020, has severely affected people worldwide. The World Health Organization [WHO (World Health Organization), 2023] has reported 6,951,664 COVID-19 deaths globally by July 16, 2023. With more than 400,000 new cases a day during the second wave, India became the epicenter of the COVID-19 outbreak. The spread of infection creates ambiguous and uncontrolled conditions that are perceived as a threat to life (Bao et al., 2020). Moreover, pernicious effects occur due to horrendous conditions, the sudden threat to existence, harrowing media coverage and emergency lockdowns (Arslan et al., 2022). The COVID-19 pandemic and its consequences are unprecedented, thus posing a long-standing challenge at the global level.

Stress is a part of our everyday lives, but people tend to experience a higher level of stress during life-threatening situations. Failure to adjust to traumatic stress creates several
negative outcomes (Dar et al., 2017). An increasing number of studies have documented a surge in psychological distress during the COVID-19 pandemic (Ho et al., 2020; Rehman et al., 2021). Undoubtedly, the continuous activation of the stress response has been shown to have deleterious effects that might persist (Galea et al., 2020). It is beyond dispute that prolonged exposure to the ongoing pandemic has proved to be stressful.

A few studies conducted during the COVID-19 pandemic established a positive association between COVID-19 stress (CS) and COVID-19 burnout (CB) (Morgantini et al., 2020; Yıldırım and Solmaz, 2020). Burnout is characterized by exhaustion, cynicism and inefficacy, which result from prolonged exposure to stressors (Maslach and Leiter, 2016). Prolonged exposure to uncontrollable situations can result in burnout. van Dam (2021) explained that burnout can be caused by stress from any source, as well as maladaptive coping mechanisms. If stress reactions are not properly recuperated, burnout can occur. Therefore, both one’s coping mechanisms and the conditions causing the stress can affect their vulnerability to burnout.

During the COVID-19 pandemic, people were directly or indirectly exposed to stressors, thus with a high tendency to experience CB. Talaee et al. (2020) and Pappa et al. (2021) reported a substantial increase in the level of burnout during COVID-19. Asl et al. (2021) found that CS exacerbates CB, which might result in severe pathological consequences. High CS might result in the deterioration of psychological resources, thus resulting in CB (Gallagher et al., 2021; Moroñi et al., 2023). A higher level of burnout can trigger mental health disorders (Dugani et al., 2018). Therefore, during the pandemic, the identification of the resources that buffer the negative impact of CS has become increasingly important (Yıldırım et al., 2021; Yıldırım and Solmaz, 2020).

The transactional theory of stress and coping (TTSC, Lazarus and Folkman, 1984) suggested that stress can negatively affect if an insufficient appraisal of resources is made. Stressors are less damaging when psychological resources are available to combat them. Existing research shows that traumatic events can also result in positive changes (Joseph et al., 2012). Meaning in life (MIL) is regarded as a psychological resource that facilitates an individual to cope with stressors (Park and Baumeister, 2017). Furthermore, stress prompts people to seek meaning in a specific situation rather than in life in general. When people are confronted with traumatic and stressful conditions in life, they search for meaning (Frankl, 1963). Indeed, people are then better able to cope with stressful events (Silver and Updegraff, 2013). MIL enhances positive mental health (Wong, 2013) and reduces psychological distress (Ashraf et al., 2021). Possibly, MIL acts as a protective factor that minimizes the negative consequences of stress (Halama, 2014). In the context of the pandemic, MIL thus becomes an important factor to consider. The relationship between MIL and burnout in medical professionals has been studied extensively. These studies have indicated that MIL is an important protective factor against experiencing burnout (Ben-Itzhak et al., 2015; Grigorescu et al., 2022; Hooker et al., 2020).

The literature is replete with studies establishing the connection between stress and burnout. Studies on stress, as well as distress during the COVID-19 pandemic, are common. Despite this, the work on the connection between CS and CB due to prolonged exposure to this stressful situation is hardly captured. Moreover, prior studies are on employees, as it is believed that stress leads to burnout only in work settings. We believe that the capacity to fight stress diminishes even in the general population if they face situations such as CS. In addition, we have tested the mediation of MIL to establish that people could rely on their personal resources during such adverse situations and experience reduced effects of stress. The relationship between stress and burnout has been already established, including in the context of the COVID-19 pandemic (Karakoş et al., 2022; Morgantini et al., 2020; Yıldırım et al., 2021; Yıldırım and Solmaz, 2020). CB has a significant and positive effect on depression (Karakoş et al., 2022). Additionally, it affects adherence to preventive measures that keep one from getting infected such as wearing a
mask and sanitizing. It also influences relationships, thus further affecting domestic life and social life. Understanding how to reduce the impact of stress may prove to be critical in reducing negative outcomes. Given this, the present study aims to test the mediating effect of MIL between CS and CB. The present study may allow us to understand the mechanism through which the impact of CS on CB could be reduced.

**Theoretical background and hypotheses development**

This study is grounded in the TTSC (Lazarus, 1991). The spread of debilitating infections is traumatic and creates tremendous stress. The cause of stress is one’s interaction with the environment, not the event itself. A person’s emotional and behavioral responses to a stressful situation are determined by how they assess the situation and the resources they have available to deal with it (Tarraf et al., 2019). Therefore, a cognitive appraisal is crucial to the assessment of stressors (Lazarus and Folkman, 1984). Ambiguity, uncertainty, infection and fear of death produce negative feelings, which lead to negative consequences. Attempting to overcome the threat to existence might be harmful. An individual perceives a threat to their survival but lacks the necessary resources to meet expectations. However, when MIL is present, appraisal of the stressor is more positive thus the outcomes are less negative.

According to the theory of MIL (Frankl, 2000), by living with meaning, negative experiences can be transformed into desirable outcomes. In adverse conditions of life, a person’s appraisal is based on their beliefs and existential goals (Park and Folkman, 1997). Yang et al. (2021) asserted the salience of meaning in stressful experiences. Apart from this, Folkman (2008) suggested that meaning-focused coping works well in prolonged stressful situations. It appears that MIL equips an individual to cope with stressful situations.

There is substantial evidence showing MIL can enhance well-being even in stressful environments (Park and Gutierrez, 2013). It is positively associated with well-being (Arslan et al., 2022; Park and Gutierrez, 2013) but negatively associated with stress (Arslan and Allen, 2021). A meta-analysis-based study by He et al. (2023) revealed a negative relationship between MIL and psychological distress. In a recent study by Yıldırım and Arslan (2021), it was found that MIL-mediated coronavirus suffering by reducing the negative effects and enhancing life satisfaction during the COVID-19 pandemic. MIL attenuates stress, thereby resulting in well-being (Arslan and Allen, 2021). As such, MIL appears to have a protective function for people facing life-threatening situations.

There are various effects of the pandemic on the general population (Asif et al., 2022). However, research on stress and burnout related to COVID-19 is mainly focused on healthcare professionals. To our knowledge, there has been only one study of the general population to understand the relationship between CS and CB (Yıldırım and Solmaz, 2020). The relevance of MIL to CS is well established, yet no attempt has been made to examine how MIL can relate to CS and CB. Research carried out during the pandemic, however, shows some efforts made to identify mechanisms that could minimize the impact of CS on outcomes (For example, Arslan and Allen, 2021; Li et al., 2021). As a result of limited studies, there is no clarity, suggesting a gap in the exploration of mediating variables. Thus, this study seeks to determine whether MIL mediates CS and CB. In light of this, we formulate the following hypotheses:

- **H1.** CS will predict CB.
- **H2.** CS relates negatively to MIL.
- **H3.** MIL relates negatively to CB.
- **H4.** MIL mediates the relationship between CS and CB.
Based on the existing empirical research and TTSC, a conceptual model is proposed in this study to empirically examine CS and CB via MIL.

Method

A cross-sectional descriptive survey was done during the second wave of COVID-19 in India. Data were collected online using a convenience sampling technique in May 2021. During May 2021, there was a lockdown/corona curfew, and major restrictions were imposed across Jammu and Kashmir, Himachal Pradesh, Haryana and Punjab. Containment zones were created in these areas. The data were collected from four states in north India, namely, Jammu and Kashmir, Punjab, Himachal Pradesh and Haryana. All procedures performed in studies involving human participants were in accordance with the 1964 Helsinki declarations and its later amendments. WhatsApp Messenger was used to send a link to the survey generated with Google Forms. A demographic profile and a battery of questionnaires were included in the online survey. Inclusion criteria were, living in India during the time of the pandemic, being at least 18 years old, ability to use digital media and having sound physical health.

In all, 514 participants (50.4% male and 49.6% female; age ranged from 18 to 75 years with a mean age of 33.11 years, SD = 10.42) were drawn from the general population in India. Of these, 51.8% were married and 48.2% were single. Of the participants, 99 (19.3%) reported that they had tested positive for COVID-19 earlier and 166 (32.3%) had someone in the same household confirmed the COVID-19 infection. In addition, 95.9% of respondents showed that they were concerned about COVID-19.

To measure the level of CB, a 10-item CB scale by Yıldırım and Solmaz (2020) was used. The items are rated on a five-point Likert scale (never = 1 to always = 5). A total score is calculated by summing all the items. The scores can range from 10 to 50. A higher score indicates higher levels of burnout related to COVID-19. To measure CS, a five-item coronavirus stress measure (Arslan et al., 2022) was used. Response to the items is made on a five-point scale (0 = never to 4 = often). The higher the score greater the level of CS. The range of scores is 0 to 20. MIL was measured using three items from the PERMA-profiler (Butler and Kern, 2016) on an 11-point scale ranging from 0 = not at all, to 10 = completely.

Data analysis

A common latent factor (CLF) method was used to solve the problem of common method bias (CMB). Standardized regression weights from the model with and without CLF were compared. None of the items had a difference greater than 0.20 which confirmed no CMB.

Results

The values for skewness and kurtosis were within the range ± 2, thus establishing normality. Next, findings from correlation analysis for CS and CB (r = 0.60, p < 0.001), CS and MIL (r = -0.19, p > 0.001) and CB and MIL (r = -0.39, p < 0.001) revealed that study variables were associated. CS scale scores indicated that on average 70% of participants reported stress levels higher than the mean score of 11.75. The mean CB scale scores indicated that, on average, 55.1% of participants reported CB above the mean of 26.63.

Confirmatory factor analysis

Confirmatory factor analysis was done for the verification of the factor structure of the three constructs in the model. Global model fit indices, namely, goodness of fit index (GFI > 0.90), adjusted goodness of fit index (AGFI > 0.90), comparative fit index (CFI > 0.90), root mean square error (RMSEA < 0.08) and standardized root mean squared residual (SRMR < 0.05)
were used for the evaluation of the measurement models. The results revealed a satisfactory model-data fit for each of the constructs (Table 1).

To establish the reliability and validity of the constructs, the average variance extracted (AVE > 0.5) and Cronbach’s alpha > 0.70 was considered. The Cronbach’s alpha (CS = 0.89, CB = 0.91, MIL, 0.81) established the reliability of the constructs. The values of AVE for all the constructs (CS = 0.62, CB = 0.51, MIL, 0.60) established convergent validity. Furthermore, the AVEs were greater than the maximum shared variance (MSV), indicating that the discriminant validity was established. The MSV for CS, CB and MIL was 0.41, 0.41 and 0.22, respectively.

**Structural model**

The structural model \( \chi^2(131) = 403.67, p < 0.01 \) shows an acceptable fit with the value of fit indices CFI = 0.94, AGFI = 0.89, GFI = 0.91 and RMSEA = 0.06. Furthermore, with CMIN/DF = 3.08, which is less than 5, CFI greater than 0.90, RMSEA less than 0.08 and AGFI > 0.80, the model can be interpreted as acceptable.

**Test of hypotheses**

For the testing of each of the hypotheses, bias-corrected bootstrapping procedures with 10,000 resamples at 95% confidence intervals (CI) were applied. Table 1 shows all the hypotheses are accepted. All path coefficients were statistically significant. Bootstrap analyses showed that MIL significantly mediated the relationship between CS and CB.

The findings revealed that CS explained only 49% of the variance in CB, whereas CS and MIL together explained 62% of the variance (\( R^2 = 0.62, F = 486.43, p < 0.001 \)) in CB.

**Discussion**

This study was carried out to examine the relationship between CS and CB through MIL. During the second wave of COVID-19 in India, data were collected from the general population. TTSC provided the conceptual framework for the study.

The high level of stress during COVID-19 has been reported globally (Salari et al., 2020). The results of the present study also revealed that the majority of participants had CS. Possibly, this is due to continuous direct and indirect exposure to COVID-19. Thus, during the pandemic, the general population is at risk for negative mental health. The fact that

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Model fitness and results for hypothesis testing</th>
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<tbody>
<tr>
<td>Construct</td>
<td>( \chi^2/DF )</td>
</tr>
<tr>
<td>COVID-19 stress</td>
<td>2.78</td>
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<tr>
<td>COVID-19 burnout</td>
<td>5.02</td>
</tr>
<tr>
<td>MIL</td>
<td>3.81</td>
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<tr>
<td>Hypothesis</td>
<td>Direct/Indirect effect</td>
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<tr>
<td>H1</td>
<td>COVID-19 stress &gt; COVID-19 burnout</td>
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<tr>
<td>H2</td>
<td>COVID-19 stress &gt; MIL</td>
</tr>
<tr>
<td>H3</td>
<td>MIL &gt; COVID-19 burnout</td>
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<tr>
<td>H4</td>
<td>COVID-19 stress &gt; MIL &gt; COVID-19 burnout</td>
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**Notes:** GFI = goodness of fit index; AGFI = adjusted goodness of fit index; CFI = comparative fit index; RMSEA = root mean square error of approximation; RMR = root mean square residual

**Source:** Table by author
participants reported CB further supports this idea. Hence, it becomes necessary to explore psychological factors that may mitigate the adverse effects of CS.

The results for the CS as a predictor of CB supported H1. These findings affirm TTSC, which holds that stress leads to negative outcomes. Research carried out during the COVID-19 pandemic also reports similar findings (Djillali et al., 2021; Karakose et al., 2022; Morgantini et al., 2020; Yildirim et al., 2021; Yildirim and Solmaz, 2020). It shows that due to CS, people are likely to experience CB. Exposure to COVID-19 might have created CS, which in turn resulted in CB. Furthermore, results revealed that MIL mediates the relationship between CS and CB, which supported H4. This finding confirms the relevance of MIL as a coping technique during stressful conditions (Arslan and Allen, 2021; Ashraf et al., 2021). Interpreting meaningfully helps in successfully dealing with the stressors. MIL acts as a bolster in adversity. Thus, this draws our attention to the positive psychological capacities inherent in an individual that bring about positive outcomes. It is, therefore, crucial that researchers focus on understanding how MIL can be enhanced during adversities. Many studies claim that MIL interventions are effective (for example, Lethborg et al., 2012; Schippers and Ziegler, 2019; Vos, 2016).

In this study, empirical evidence shows a direct link between CS and MIL, MIL and CB; therefore, H2 and H3 are confirmed. The results showed a decrease in MIL with an increase in CS and an increase in CB with a decrease in MIL. MIL is an underlying cognitive appraisal that acts as a coping mechanism. This is supported by the TTSC, which suggests that individual differences exist in making cognitive appraisals (Tarraf et al., 2019).

The results demonstrate that during the second wave of COVID-19 in India, people experienced CS and CB. Additionally, this study provides preliminary evidence for the relationship between CS and CB. Our findings reveal the significance of MIL as a mediator between the CS and CB relationship.

The core theoretical contribution of this study is in combining the theory of MIL with TTSC to understand its role in the outcomes of CS. The mediating role of MIL confirms that MIL involves cognitive appraisal that facilitates coping and attenuates the impact of CS on CB. Furthermore, the results of the present study corroborate prior literature on the existence of this relationship in a life-threatening situation arising due to the spread of coronavirus.

**Implications**

This study has certain practical implications. There is an urgent need for psychologists, mental health professionals and health-care professionals to address CS. Stress can lead to exhaustion in people if they are exposed to stressful situations for an extended period (Dar et al., 2017; Ho et al., 2020). Negative mental health must be addressed on time to avoid long-term effects (Vahedian-Azimi et al., 2020). As a result, understanding psychological factors for designing preventive programs would be beneficial in curbing the negative outcomes. MIL can be cultivated to achieve desirable results. In light of the findings of this study, psychiatrists and clinical and counseling psychologists should devise interventions that promote MIL. The interventions could be designed to promote MIL for the general public in daily life too. The interventions designed to promote meaning and purpose in life such as meaning and purpose therapy (Lethborg et al., 2012) and life crafting intervention (Schippers and Ziegler, 2019), could be beneficial. In addition, we recommend that patients with COVID-19 and their family members be provided with counseling services because they are at higher risk of psychological distress. Workers in the health-care industry should focus not only on treating mental illnesses but also on their prevention while relying on positive psychological resources.
Limitations and future directions

This study is novel in its investigation of the mediating role of MIL between CS and CB. Although the scientific rigor of the study was maintained, it has certain limitations. First, this study was cross-sectional, and the data were collected at a single point in time. Therefore, we cannot fully rely on the results of this study. Second, the study is conducted online. So, the study’s results should be used with caution. The results must be cross-validated to ascertain the findings. Additionally, future research can include the application of the interventions and further examining the effects on MIL over time. Finally, due to the concurrent assessment of all the constructs in the model, the mediating role of MIL cannot be ascertained. Our study provides the preliminary evidence for MIL as a mediator, which could be confirmed in future research using time lag design.

Conclusion

In conclusion, CS is experienced by some people, thereby increasing the incidence of CB. Furthermore, the findings indicate that MIL mediates the relationship between CS and CB. This reveals the relevance of MIL in the reduction of the negative impact of stressors and the requirement for timely interventions to develop MIL in the general population. Positive psychological resources are necessary for the prevention of disorders. Therefore, all those in health-care should consider prevention along with the treatment of symptoms of mental distress.

References


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