

The Mediating Role of Sense of Meaning in Life and Negative Cognitive Emotions: An Assessment of the Impact of Stressful Events on the Mental Health of Cancer Patients During the COVID-19 Pandemic

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ABSTRACT

Background: The COVID-19 pandemic posed significant challenges for cancer patients, intensifying psychological stress and compromising mental health. This study examined the relationships between stressful life events, sense of meaning in life, negative cognitive emotions, and mental health outcomes. **Materials and Methods:** A mediation analysis was conducted to explore both direct and indirect pathways, with cognitive emotions and sense of meaning of life acting as mediators. Data collected from 250 cancer patients revealed significant correlations among the variables. **Results:** Stressful events were negatively associated with a sense of meaning in life ($r=-0.1131, p<0.05$) and positively associated with Negative cognitive emotions ($r=0.1597, p<0.01$). According to mediation analysis, the association between stressful events and mental health was partially mediated by negative cognitive emotions and a sense of meaning of life. The combined mediation pathway involving both factors accounted for a significant portion of the total effect. Path analysis confirmed strong predictive relationships, with stressful events and mediators explaining 98.9% of the variance in mental health outcomes ($R^2=0.989, F(5, 120)=7.569.91, p<0.001$). A strong sense of meaning buffered effect of stress and promoted resilience in cancer patients. **Conclusion:** These findings highlight the mechanisms through which stressful events impact mental health in cancer patients during crises. They underscore the importance of interventions focused on cognitive-emotional regulation and fostering a sense of meaning to improve psychological outcomes. This research provides a foundation for developing tailored therapeutic strategies to support vulnerable populations during global crises like pandemics.

Keywords: COVID-19 Pandemic, Cancer Patients, Psychological Stress, Cognitive Emotions, Sense of Meaning.

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INTRODUCTION

COVID-19 introduced several problems and challenges, which leads to changes individuals' activities and social systems. For cancer patients in particular, these disruptions were devastating in terms of direct viral infection and resulting physiological distress.¹ The COVID-19 pandemic affected patient's daily lives;

postponed or limited medical treatments and heightened feelings of loneliness all of which added to the psychiatric depreciation of this high-risk demographic. The current global crises such as the COVID-19 pandemic, have for a long time been associated with adverse effects on mental health especially among patients with chronic physical diseases.² Research conducted in the past couple of years indicate that patients with cancer who are faced with the realities of their disease are likely to experience anxiety, depression and fear without any addition of COVID-19 pandemic.^{3,4}

Both cognitive and emotional aspects of human behavior influence how one will react to stress. The analysis examines such forms of thinking as rumination, catastrophizing, and self-blame as negative cognitive emotions that are most sensitive



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to increasing psychological loading and worsening the effect of stress.⁵ These maladaptive cognitive responses hence lead to a vicious loop of experiences of emotion dysregulation, which by implication raises the risk of developing mental health disorders such as depression and anxiety.⁶ On the other hand, the results of this study demonstrated that having a high level of meaning in life protects people from the negative consequences of stress. Sense of meaning in Life gives a person a structure in which to compartmentalize and make sense of the suffering they might have to endure, themselves coming out of the situation more confident and motivated.⁷ Proposes that hope and dignity predict more effective coping in response to stress with hope being the ability to find meaning in daily endeavors and dignity referring to the ability to find coherency in personal suffering.^{8,9} In the case of cancer patients, this aspect of meaning becomes even more important and provides psychological protection against the disease as well as the induced pandemic.

The multifaceted stress-stress anomaly model and the temporal link between stressful events, cognitive-emotional reactions and psychological well-being require further cross-sectional examination of these relationships, particularly in at-risk populations.¹⁰ New studies suggest that these relationships should be explored using a chain-mediated model that explains the effects of stress on mental health.^{3,11} Chain mediated model involves multiple mediators that sequentially transmit the effect of an independent variable on an outcome e.g., effect of stress on mental health. Research has shown that negative cognitive emotion mediates stress and mental health in patients with cancer, yet sense of meaning of life moderate in meditating these effects by stress and mental health in cancer patients by.^{3,11} This allows us to discover such strands of stressing effects on mental health and minimize those using proper preventive measures in cancer patients who are most vulnerable to psychological problems. In the present study, stress and negative cognitive emotions were examined in relation to the mental health of cancer patients during the COVID-19 pandemic as well as their modulating effects on mental health.¹² In realizing this objective, the research aimed at elucidating the moderation pathways among stressful events and mental health. The results of this research are important in terms of understanding the thought mechanisms associated with symptoms of stress in mental health, and approaches that can help develop individualized psychological interventions for cancer patients. Such approaches may be most effective during challenging periods, including the current pandemic, as a way to consider emotional and cognitive factors that can worsen stress and impact the mind. While previous studies has explored effect of stress or resilience on mental health individually, but few have explored how stress affects mental health through resilience during COVID-19 in cancer patients. This study aims to explore connection of stress, resilience and mental health in cancer patients during COVID-19. Thus, these findings underscore the importance of understanding relationships between stressful life

events, Cognitive-Emotional resilience, and mental health in cancer patients particularly during the COVID-19 pandemic. Improved strategies of psychological resilience among patients suffering from cancer can be attained if healthcare providers concentrate on happiness-related aspects such as boosting citizens' emotional regulation and preparation for meaning.¹³

MATERIALS AND METHODS

Research Design

This study employed a cross-sectional design to examine the impact of pandemic-related stressors on the mental health of cancer patients. A sense of meaning in life and negative cognitive emotions were also explored as mediating factors. Data were collected from cancer patients across four hospitals and medical facilities in China between February 29 and March 2, 2023. The study aimed to provide insights into the psychological mechanisms affecting the mental health of cancer patients during crises such as the COVID-19 pandemic. This study adhered to ethical protocols approved by the Ethical Governance Committee for Science and Technology (EGCST) Guangdong Jiangmen Vocational College of Traditional Chinese Medicine, Jiangmen, Guangdong Province, China (GJVCTCM22573-77).

Demographics

The participants in this study were cancer patients undergoing treatment at four hospitals and medical centers in a region of China. The sample included 250 individuals, consisting of 173 males (69.2%) and 77 females (30.8%), with 58.99 years (SD=1.18) of mean age. This demographic data facilitated an analysis of the psychological effects of pandemic-related stress, considering gender and age variables.

Sample Size and Selection of Participants

The study employed a convenience sampling method to recruit 250 cancer patients. Inclusion criteria required participants to be aged 18-65 years, have a confirmed cancer diagnosis, be receiving ongoing treatment, and have no history of major psychiatric disorders. Additionally, participants needed to be capable of completing the survey independently or with minimal assistance. While, exclusion criteria included patients with severe cognitive impairments, and those undergoing palliative or end-of-life care. The survey was distributed through hospital networks and designed as an online questionnaire to evaluate pandemic-related stressors and their impact on mental health.

Acquisition Tools

The study utilized several validated instruments to measure key variables. Pandemic-related stress was assessed using the Stressful Events (SE) Questionnaire, which included items addressing stressors such as job loss, fear of contracting the virus, social isolation, and financial uncertainty. On a scale of

1 to 10, participants rated each stressor as "Not at all stressful" and "Extremely stressful." The total score was used to calculate the cumulative impact of stress, and the tool had a Cronbach's α of 0.76.

The Negative Cognitive Emotion (NCE) Questionnaire measured negative cognitive emotions, including self-blame, rumination, blaming others, and catastrophizing. Higher scores indicate greater reliance on maladaptive cognitive strategies, which were rated on a 5-point scale. Cronbach's coefficient of 0.91 indicated strong reliability of the subscales.

A Questionnaire consisting of 27-item scale measuring five dimensions of mental health was used to assess Mental Health Impact (MHI). The scale included depression, neurosis, fear, obsessive-compulsive anxiety, and hypochondriasis. Higher total scores indicated greater psychological distress. With a Cronbach's α of 0.93, this instrument was highly reliable.

Participants' sense of meaning in life was evaluated using the Sense of Meaning in Life (SML) Questionnaire. This 10-item scale measured two dimensions: Search for Meaning in Life and Present Meaning in Life. Participants rated their responses on a 10-point scale, with higher scores reflecting either a stronger sense of meaning or a more active search for meaning. The MLQ demonstrated excellent internal reliability, with a Cronbach's α of 0.98.

Data Collection

Data was collected through an online survey administered to cancer patients at four hospitals and medical centers. The survey was completed independently by participants, taking approximately 20 min. Data was initially cleaned to remove incomplete or inconsistent responses. Raw data were standardized for compatibility with statistical analysis tools. Following this, data from all participating hospitals were integrated into a unified dataset. This process ensured that the dataset was ready for further analysis.

Statistical Analysis

All statistical analysis was done using GraphPad Prism, Microsoft excel and Process macro (Model 6). **Descriptive Statistics:** Means and Standard Deviations (SD) were calculated for all variables to summarize data distributions. **Correlation Analysis:** Pearson's correlation coefficients assessed relationships among the key variables. **Path Analysis and Mediation Analysis:** Structural Equation Modeling (SEM) validated the hypothesized relationships and indirect effects. Model fit indices, including R^2 and F-statistics, were reported. PROCESS macro for SPSS (Model 6) was used to evaluate indirect effects across three mediation pathways. Similarly, t-values, Regression coefficients (β), and significance levels (p -values) were reported.

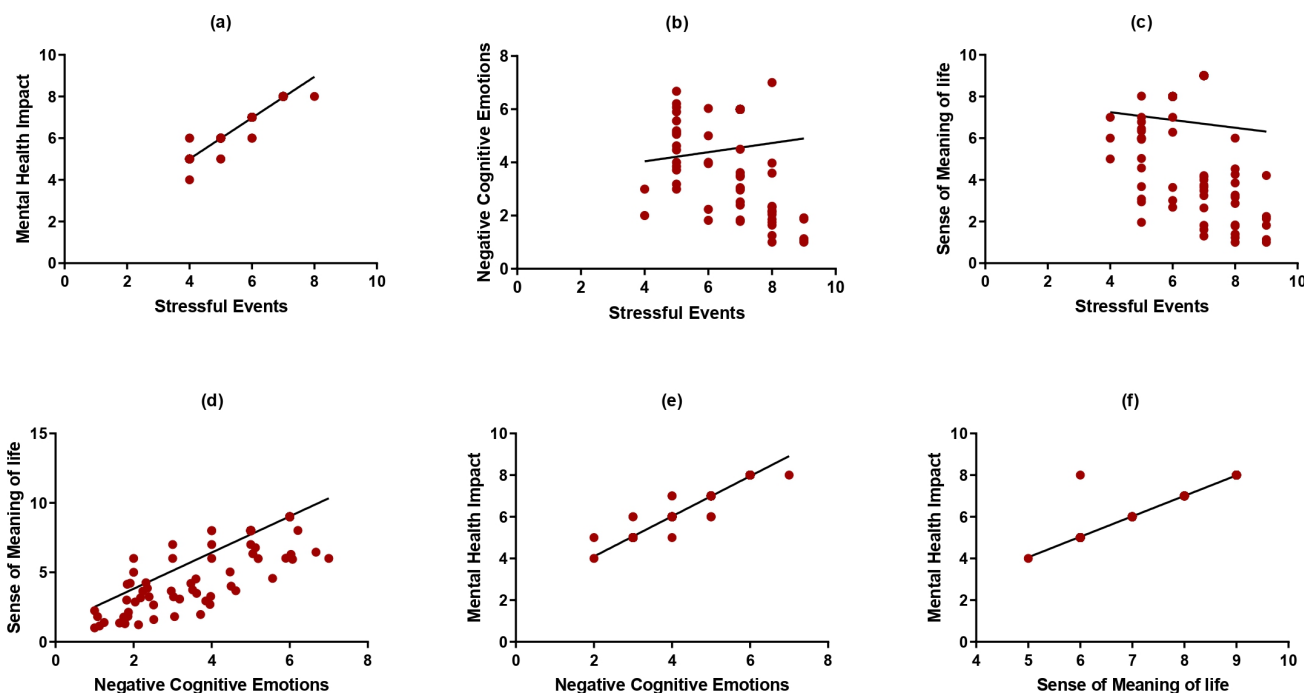


Figure 1: Scatter plot showing correlation and regression among variables. Correlation plots showing relationship among stressful events, Negative cognitive emotion and sense of meaning in life.

RESULTS

Data Organization and Descriptive Statistics

Table 1 presents the descriptive statistics for the study's main factors, such as stressful situations, negative cognitive emotions, sense of meaning in life, and the influence on mental health. The data reflects the variability and central tendencies across these measures. The sample consisted of 250 participants, with a mean score of 5.648 (SD=1.02) for stressful events. The minimum score for stressful events was 4, while the maximum score was 8. The distribution of stressful events showed that the 25th percentile was 5, the median was 6, and the 75th percentile was 6, suggesting moderate exposure to stress across the sample. This indicates half of the reported participants experience between 5 and 6 stressful events suggesting consistent level of stress across the sample. Similarly, negative cognitive emotions had a mean of 4.628 (SD=1.042), with scores ranging from 2 to 7. The median score was 5, indicating that participants generally reported moderate negative emotional responses to the pandemic. The sense of meaning in life, with a mean of 7.616 (SD=1.024), demonstrated a generally positive outlook among the participants, with scores ranging from 5 to 9. Finally, the mean mental health impact score was 6.628 (SD=1.023), reflecting moderate psychological distress related to the pandemic. The Standard Errors of the mean (SE) were relatively small for all variables, indicating high precision in the sample means. The 95% confidence intervals for the mean values ranged from [5.521, 5.775] for stressful events to [6.501, 6.755] for mental health impact, providing further support for the reliability of the sample data.

Correlation Analysis

Table 2 presents the Pearson correlation coefficients among the key study variables. The analysis revealed significant correlations

between all pairs of variables, suggesting strong interrelationships. Stressful events were strongly and positively correlated with mental health impact ($r=0.9829, p<0.001$), indicating that greater exposure to stressful events was strongly associated with worse mental health outcomes. In Contrast, the relationship between stressful events and negative cognitive emotions was relatively weak ($r=0.1597, p<0.01$), suggesting a small effect size. Indicating that the correlation was not as strong while these variables were statistically significant. In contrast, negative cognitive emotions and sense of meaning exhibited a strong positive correlation ($r=0.8512, p<0.001$), suggesting that participants who reported more negative emotions tended to have lower perceptions of life's meaning. Additionally, a strong positive relationship was observed between sense of meaning in life and mental health impact ($r=0.9828, p<0.001$), indicating that a higher sense of meaning was associated with better mental health. The negative correlation between stressful events and sense of meaning ($r=-0.1131, p<0.05$) suggests that higher stress levels were associated with a reduced sense of life's meaning. These results underscore the importance of understanding the interplay between stress, emotions, and existential factors in shaping mental health during a global crisis.

Figure 1 illustrates these relationships through scatter plots, with regression lines highlighting the trends observed in the data. The plots show a strong positive correlation between mental health and stressful events, a weak correlation between negative cognitive emotions and stressful events, and a negative association between sense of meaning and stressful events. Furthermore, the plots reveal a strong negative relationship between negative cognitive emotions and a sense of meaning, as well as a positive relationship between mental health and a sense of meaning.

Table 1: Descriptive statistics for the key variables in the study.

items	SE	NCE	SML	MHI
Number of values	250	250	250	250
Minimum	4	2	5	4
25% Percentile	5	4	7	6
Median	6	5	8	7
75% Percentile	6	5	8	7
Maximum	8	7	9	8
Mean	5.648	4.628	7.616	6.628
Std. Deviation	1.02	1.042	1.024	1.023
Std. Error of Mean	0.06451	0.06591	0.06477	0.06468
Lower 95% CI of mean	5.521	4.498	7.488	6.501
Upper 95% CI of mean	5.775	4.758	7.744	6.755
Sum	1412	1157	1904	1657

Mediation Analysis Overview

Through the mediating variables of negative cognitive emotions and a sense of meaning in life, mediation analysis was used to assess the indirect impacts of stressful events on mental health. Table 3 and Figure 2 summarize the findings, which showed that each mediation pathway had significant indirect effects.

Stressful events had an indirect effect on mental health through negative cognitive emotions effect of 0.20665 (95% CI: [0.195, 0.218]), which accounted for 14.73% of the overall impact on mental health. This shows that emotional reactions are crucial in the link between stress and mental health and that negative cognitive emotions partially moderate the effects of stressful events on mental health.

The pathway stressful events had indirect effect on mental health through sense of meaning in life showed a stronger mediation effect, with an indirect effect of 0.46307 (95% CI: [0.442, 0.484]), contributing 33.01% to the total effect. This suggests that sense of meaning plays a significant protective role in buffering the negative impact of stressful events on mental health.

Furthermore, the combined pathway stressful events → negative cognitive emotions → sense of meaning → mental health demonstrated an indirect effect of 0.41772 (95% CI: [0.397, 0.438]), accounting for 29.78% of the total effect. This combined mediation underscores the interconnected roles of cognitive-emotional responses and meaning-making in shaping mental health outcomes in the face of stress. These results suggest that negative cognitive emotion and sense of meaning in life significantly mediate the impact of stressful events on mental health along with sense of meaning of life showing the strongest protective effect.

Path Analysis and Mediation Results

To evaluate the proposed connections between stressful events, negative cognitive emotions, sense of meaning in life, and mental

health, path analysis was done. The results of the regression models are presented in Table 4 and Figure 3. The regression coefficients for stressful events were significant across all three models: Model 1 (Cognitive Emotions), Model 2 (Sense of Meaning), and Model 3 (Mental Health). In Model 1, stressful events had a strong positive effect on negative cognitive emotions ($\beta=1.013, t=116.41, p<0.001$). In Model 2, stressful events also significantly predicted sense of meaning ($\beta=0.958, t=50.32, p<0.001$). In Model 3, the direct effect of stressful events on mental health was moderate but significant ($\beta=0.315, t=6.19, p<0.001$).

The role of cognitive emotions in predicting mental health was also significant ($\beta=0.204, t=4.14, p<0.001$), while a sense of meaning had a substantial positive effect on mental health ($\beta=0.484, t=21.56, p<0.001$). The model fit indices were excellent, with R^2 values of 0.982 for Model 1, 0.911 for Model 2, and 0.989 for Model 3, indicating that the models accounted for a substantial proportion of the variance in the outcome variables. The F-statistics for all models were highly significant ($p<0.001$), further confirming the robustness of the findings.

Indirect Effect (Mediation)

The analysis revealed that each mediation pathway significantly influenced the relationship between mental health and stressful events as shown in Figure 4. Pathway 1, which involves the sequence of stressful events leading to negative cognitive emotions and subsequently affecting mental health, accounted for 14.73% of the total effect, with an indirect impact of 0.20665 (95% CI: [0.195, 0.218]). Pathway 2, reflecting the link from stressful events to a sense of meaning in life and then to mental health, contributed 33.01% of the total effect, with an indirect impact of 0.46307 (95% CI: [0.442, 0.484]). Pathway 3, which incorporates the chain of stressful events influencing negative cognitive emotions, subsequently altering the sense of the meaning of life and ultimately impacting mental health, accounted for 29.78% of the total effect, with an indirect impact of 0.41772 (95% CI: [0.397, 0.438]). These results underscore the nuanced roles of

Table 2: Pearson correlation coefficients (r) among variables.

Variables	M±SD	SE	NCE	SML	MHI
Stressful Events	5.648±1.02	1	0.1597**	-0.1131	0.9829****
Negative Cognitive Emotions	4.628±1.042	0.1597**	1	0.8512****	0.9831****
Sense of Meaning	7.616±1.024	-0.1131	0.8512****	1	0.9828****
Mental Health Impact	6.628±1.023	0.9829****	0.9831****	0.9828****	1

Note: $p<0.05$, **** $p<0.001$.

Table 3: Mediation analysis demonstrating the mediation pathways' relative contributions, indirect effects, and 95% CI.

Mediation Pathway	Indirect Effect	95% CI	Relative Effect Contribution
SE → NCE → MHI	0.20665	[0.195, 0.218]	14.73%
SE → SML → MHI	0.46307	[0.442, 0.484]	33.01%
SE → NCE → SML → MHI	0.41772	[0.397, 0.438]	29.78%

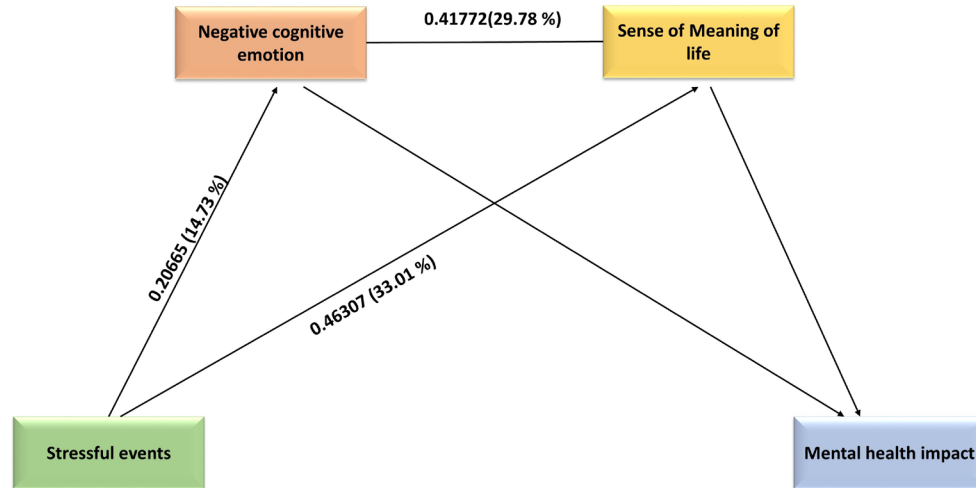


Figure 2: Mediation pathway illustrating direct and indirect impact of stressful events on mental health, with negative cognitive emotions and sense of meaning in life acting as key mediators.

negative cognitive emotions and a sense of meaning of life in mediating the impact of stressful events on mental health.

Total Effect

The cumulative effect of stressful events on mental health, encompassing both direct and indirect influences, provided a holistic understanding of stress's impact. The direct effect of stressful events on mental health was quantified at 0.315, while the indirect effects through mediation pathways were 0.20665 (Pathway 1), 0.46307 (Pathway 2), and 0.41772 (Pathway 3). These findings highlight the significant role of sense of meaning in life and negative cognitive emotions in mediating the relationship between stressful events and mental health outcomes.

DISCUSSION

Cancer patients face elevated levels of anxiety, depression, and emotional distress as a result of stressful events and negative cognitive emotions, particularly during the COVID-19 pandemic. The pandemic exacerbated stressors such as treatment interruptions, fear of illness, and restricted access to healthcare facilities, leading to profound psychological impacts. Recent analyses have highlighted the importance of addressing these stressors and their psychological consequences, emphasizing the need for interventions that enhance emotional resilience and foster a sense of meaning in life among cancer patients as highlighted by³ that cancer patients' anxiety and depression rates were higher than the general population during the pandemic, it became clear that positive mental health interventions are lacking among these patients. In the same spirit,¹¹ pointed out that social isolation and ambiguity about the treatment that a cancer patient required made the distress worse; this was now an added load on the affected population. COVID-19 stressful events have affected cancer patient's mental health as the research shows increased rates of anxiety, depression and Post-Traumatic

Stress Disorder (PTSD).⁴ Indicated that half of the reported cancer patients had at least a moderate level of depression and two-thirds of the reported cancer patients had at least a moderate level of anxiety. The treatment modifications and expectations of COVID-19 transmission around these challenges aggravated these challenges. However¹¹ showed that cancer patients recorded higher prevalence of psychological distress if their treatment was disrupted or changed due to COVID-19 pandemic.

Research has particularly established the connection between stress and mental health where the¹⁴ reported that stress worsens symptoms of depression and anxiety in cancer patients. These Confidence Interval (CI) activates negative cognitive emotions, which include self-blame, catastrophizing, and rumination while disengagement activates positive cognitive emotion of hope. This study showed that negative cognitive emotions severely correlated with more adverse mental health status among the patients with cancer as also concluded by.¹⁵ These results are similar to those of¹⁶ who found that cancer patients with maladaptive cognitive responses have higher odds of mental health problems in their studies. In the same vein,¹⁷ also revealed that stress negative emotional coping leads to deterioration in mental health outcomes of cancer patients. On the other hand, according to cognitive and functional theories a sense of meaning in life has been determined to predict negative emotional reactions.¹⁸ This according to researchers means that most of those surviving cancer are more able to handle stress whenever they find a sense of meaning in lives. Cancer patients with a higher level of meaning-making were less likely to suffer from depressive and anxiety symptoms, which included the findings of the study conducted by⁸ that enhance the importance of meaning-making in emotional strength. Additionally,⁹ also affirmed that an increased level of meaning reduces the harm caused by stress by not only enhancing the mental but also the physical health of cancer patients.

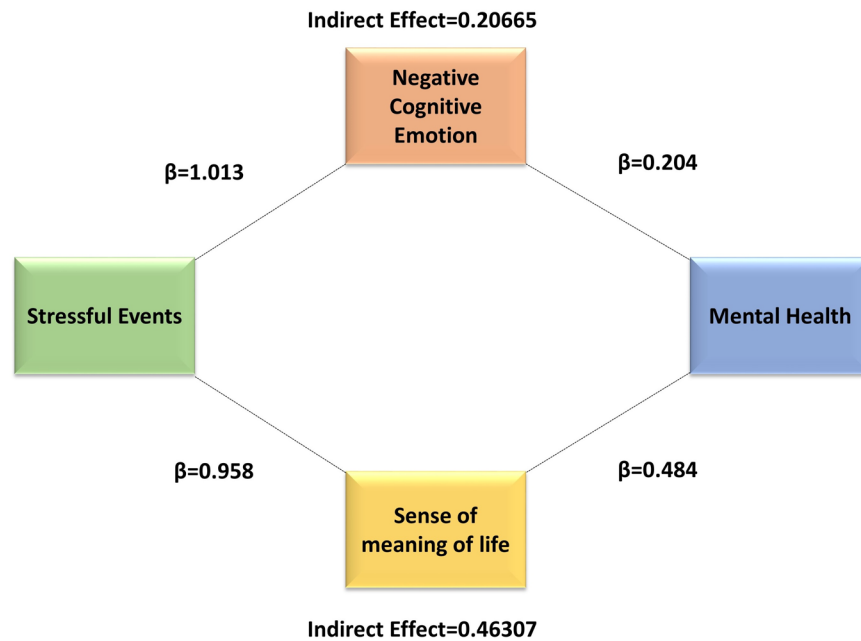


Figure 3: Path analysis diagram depicting indirect effect.

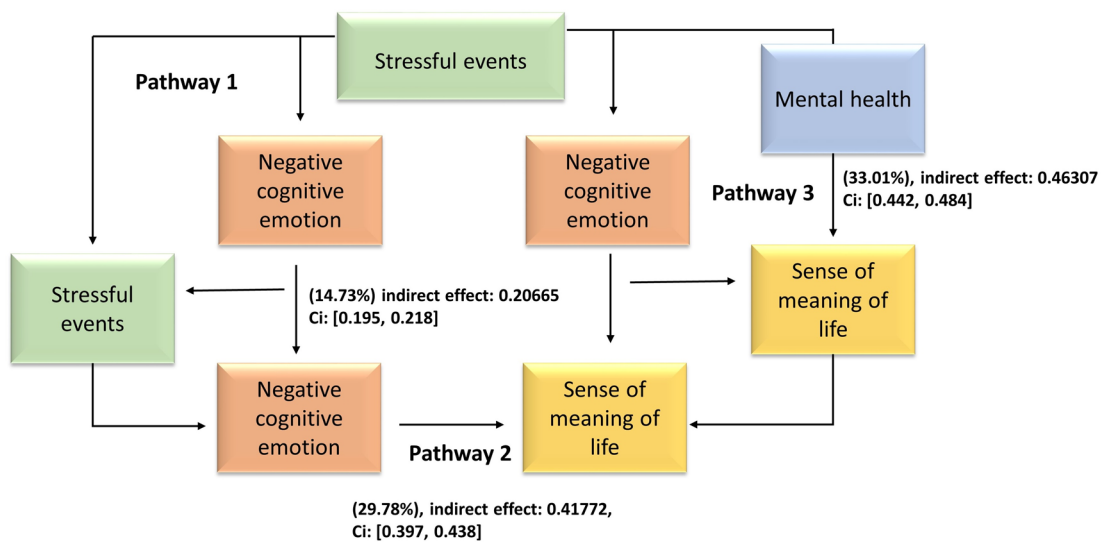


Figure 4: Mediation pathway between stressful events and mental health.

According to the results of this study, negative cognitive emotions, as well as a sense of meaning in life, mediated the adverse effect of stressful events on mental health. Most significantly, sense of meaning of life offered the greatest protection out of the two, including a net 33.01% to mental health preservation while cognitive emotions inclusive of 14.73%. These outcomes prove that the role of involvement of the ‘emotional regulation’ in preventing stress from affecting one’s mental wellbeing, in addition to the ‘existential factors. Similar to the research of¹ the present study highlighted the involvement of emotional self-regulation for enhancing the mental health status of patients suffering from cancer. These results stress the importance of the psychological treatment for cancer patients aiming at the improvement of the emotional reappraisal and the presence of meaning in their lives. Mindful based therapies are one example of treatment that may

help to decrease psychological symptoms and enhance wellbeing in cancer patients.¹⁹ Furthermore, it has revealed that telehealth services and remote mental health interventions are well applicable during the pandemic to deliver the required needed mental health support to the cancer patients who cannot seek traditional care. Other investigations have also shown that different kinds of cognitive treatments, including Mindfulness-Based Cognitive Therapy (MBCT), enhance global mental health, as well as depressive symptoms especially in cancer patients regarding their processes of dealing with existential concerns and fear of cancer relapse.²⁰ On balance, the results indicated that the cancer patients have experienced a wide range of the mental health issues during the COVID-19 pandemic due to the stressful life events, negative cognitive emotions, and perceived meaning in life.²¹ Therefore, optimizing psychological interventions in relation to these

Table 4: Path analysis results showing regression coefficients (β), t-values (t), and model fit indices (R^2 , F-statistics).

Predictor Variables	Model 1 (NCE)	Model 2 (SML)	Model 3 (MH)
SE (β , t)	1.013***, 116.41	0.958***, 50.32	0.315***, 6.19
NCE (β , t)	—	—	0.204***, 4.14
SML (β , t)	—	—	0.484***, 21.56
R	0.991	0.954	0.995
R^2	0.982	0.911	0.989
F	13,551.89***	2,532.39***	7,569.91***

Note: $p < 0.05$, **** $p < 0.001$.

challenges can lead to improved emotion and thus quality of life among these patients. The long-term psychological outcomes of the pandemic should be examined in further studies as well as the success of efforts to promote increased psychological well-being by boosting emotional resources and meaning.

CONCLUSION

This study explore the mediating roles of negative cognitive emotions and sense of meaning in life between mental health and stressful events among cancer patients during COVID-19 Pandemic. Path analysis demonstrated 98.9% of the variance which significantly predicted mental health outcomes effected by these factors and parameters. These finding suggest that managing emotions and finding meaning in life can help cancer patients to stay mentally strong during time of pandemic.

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ABBREVIATIONS

SE: Stressful Events; **NCE:** Negative Cognitive Emotions; **SML:** Sense of Meaning in Life; **MHI:** Mental Health Impact; **EGCST:** Ethical Governance Committee for Science and Technology; **MLQ:** Meaning in Life Questionnaire; **SD:** Standard Deviation; **CI:** Confidence Interval; **MBCT:** Mindfulness-Based Cognitive Therapy.

FUNDING

No funding has been received for this research.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ETHICAL APPROVAL

This study adhered to ethical protocols approved by the Ethical Governance Committee for Science and Technology (EGCST) Guangdong Jiangmen Vocational College of Traditional Chinese Medicine, JiangMen, Guangdong Province, China (GJVCTCM22573-77).

AUTHOR CONTRIBUTION

Yanghua Li, Shun Zhang and Anwar Ali have collected the raw data and prepared manuscript, Anwar Ali and Quratulain Babar have analyzed the data and prepared manuscript whereas Huma Tabassum has improved the English grammar of the article.

SUMMARY

In this study, we examine how stressful events affect the mental health of cancer patients, particularly during the COVID-19 pandemic. Throughout the study, negative cognitive emotions and a sense of meaning in life were found to play a significant mediating role in this relationship. Stressful situations were identified as strong predictors of heightened negative cognitive emotions and a diminished sense of meaning in life, both of which adversely affect mental health outcomes. Among the mediation pathways, the sense of meaning in life emerged as the most influential factor, highlighting its protective role in mitigating stress-induced declines in mental health. Even though they were less significant, negative cognitive emotions were nonetheless quite important, highlighting the necessity of treating maladaptive thought processes in stress management. The interconnectedness of these mediators in mitigating the impacts of stress was further demonstrated by the integrated pathway through cognitive emotions and sense of meaning. Clinically, these findings support treatments that improve cognitive-emotional regulation and existential resilience. Cognitive-behavioral methods and meaning-centered psychotherapy may be essential for helping cancer patients in times of crisis. Such tactics may improve mental health outcomes and quality of life by addressing maladaptive cognitive processes and cultivating a sense of meaning in life. To sum up, our research advances a more sophisticated comprehension of the psychological processes that connect stressful situations to mental health. It establishes a framework for focused interventions and serves as a starting point for further studies to investigate these dynamics in various settings and demographics.

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