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Cognitive-Emotional Adaptation to Chronic Illness: A Psychological Model for Resilience and Mental Health Interventions

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ABSTRACT

Background: Living with chronic illness negatively impacts the psychological well-being of patients, which can result in emotional distress and reduced quality of life. Although resilience has become crowded to be a vital protective factor, to our knowledge, a psychological model that includes both cognitive and emotional mechanisms in the face of chronic conditions has not yet been established.
Objective: Based on the transactional model of stress and coping, this research was designed to construct and validate a psychological model on cognitive-emotional adaptation to chronic illness, which emphasized the mediating role of resilience in enhancing mental health status.
Method: Mixed method study including quantitative data from 326 adult patients with a variety of chronic conditions and qualitative interviews with 20 participants. Illness cognition, emotion regulation strategies, resilience, anxiety, depression and quality of life were measured using validated scales. SEM for model testing and thematic analysis for qualitative data.
Results: Acceptance and cognitive coherence were found to be positively associated with resilience, and emotional suppression and helplessness were positively related to depression and anxiety ($p < .01$). SEM revealed that resilience completely mediated the influence of cognitive-emotional variables on distress and quality of life with good fit to the model (CFI =. 961, RMSEA =. 038). Qualitative themes corroborated the model, highlighting adaptive coping, emotional processing, and identity

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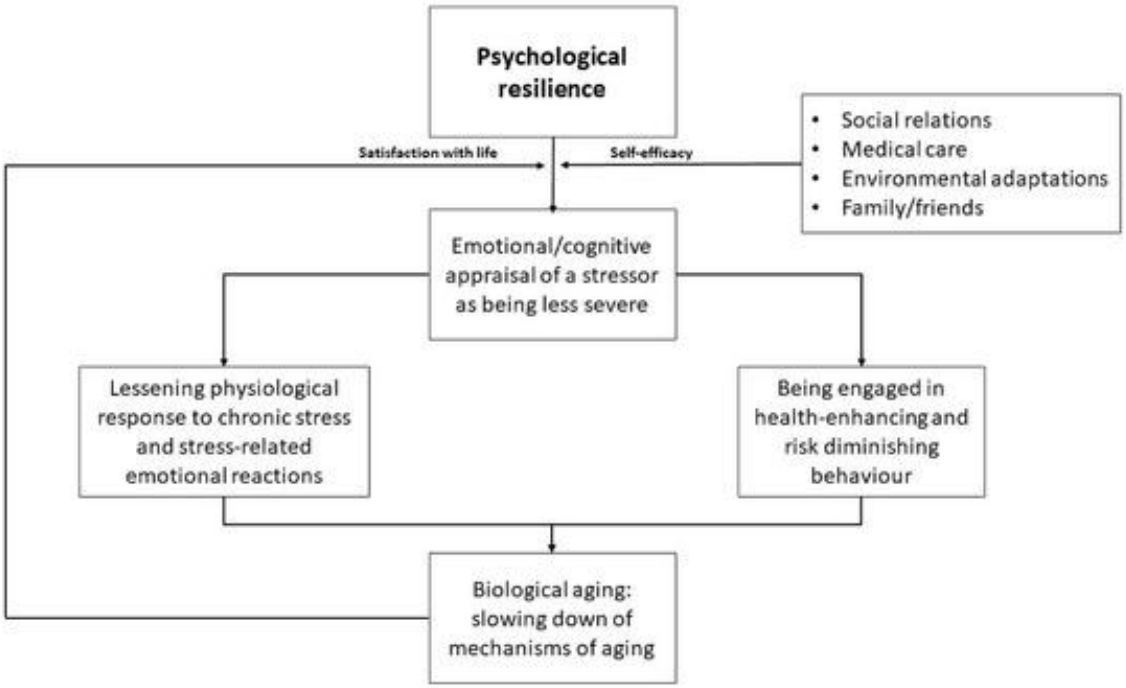
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reconstruction as essential for psychological adjustment.
Conclusions: The results support a biopsychosocial model of the psychological factors associated with resilience and mental health in individuals with chronic illness. These results have clinical implications for interventions aimed at enhancing adaptive cognition and emotional regulation.

Keywords: Chronic illness, resilience, cognitive-emotional adaptation, emotion regulation, mental health, psychological model, structural equation modeling.

Introduction

Diseases that are chronic, like diabetes, multiple sclerosis or rheumatoid arthritis, impose a long-term psychological burden on their patients, over and above any physical impact. These are generally chronic illnesses, and the long term psychological adaptation require complex cognitive and affective resources. Recent studies have highlighted the important role of psychological resilience (i.e., the individual's ability to cope with stressor and adversities; Barakat & Aldhafri, 2024) in successful adaptation to CHCs (Alsheikh & Alqudah, 2023). The study of psychological resilience in this context is key to understanding how individuals manage the experience, regulate emotions and reconstruct life goals in the face of ongoing health challenges.
Emotional reactions and resource use are strongly influenced by cognitive appraisal --



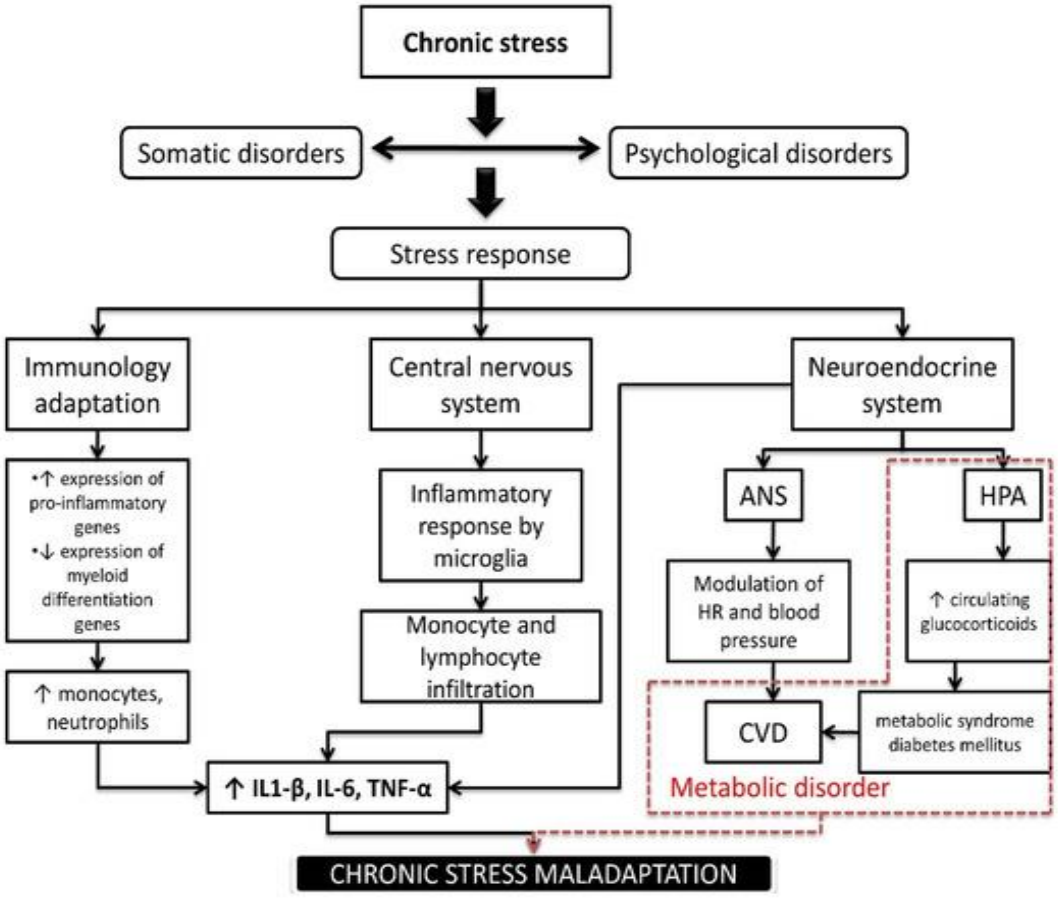
by the meaning people attach to their illness and its consequences. When people believe that their illness can be controlled or managed, they are more likely to take adaptive behaviors and problem-solving strategies. Thus, when disaster related, catastrophic thinking or a sense of helplessness – as well as obligation not working –

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is likely to result in higher distress and avoidance behaviors. Emotional regulation strategies like acceptance, cognitive reappraisal and emotional distancing also emerged as significant moderators of psychological outcomes of chronic illness (Hussain et al., 2023). These coping strategies also enable patients to manage their reactions to their symptoms and the restrictions of their disease.

The assimilation of cognition with emotion is important for accounting for adaptive responses in chronic disease. Psychological flexibility, including the ability to continue open to experiences and flexible in behavior even when distressed as well as engaging in behavior consistent with values under distress, has been identified as an important mediator in the adaptation process. Hussain et al. (2023) found that higher levels of psychological flexibility among asthmatic patients in Pakistan were linked with reduced anxiety, depressions and enhancement in quality of life endorsing the importance of efficient cognition-emotion interactions in chronic disease control.



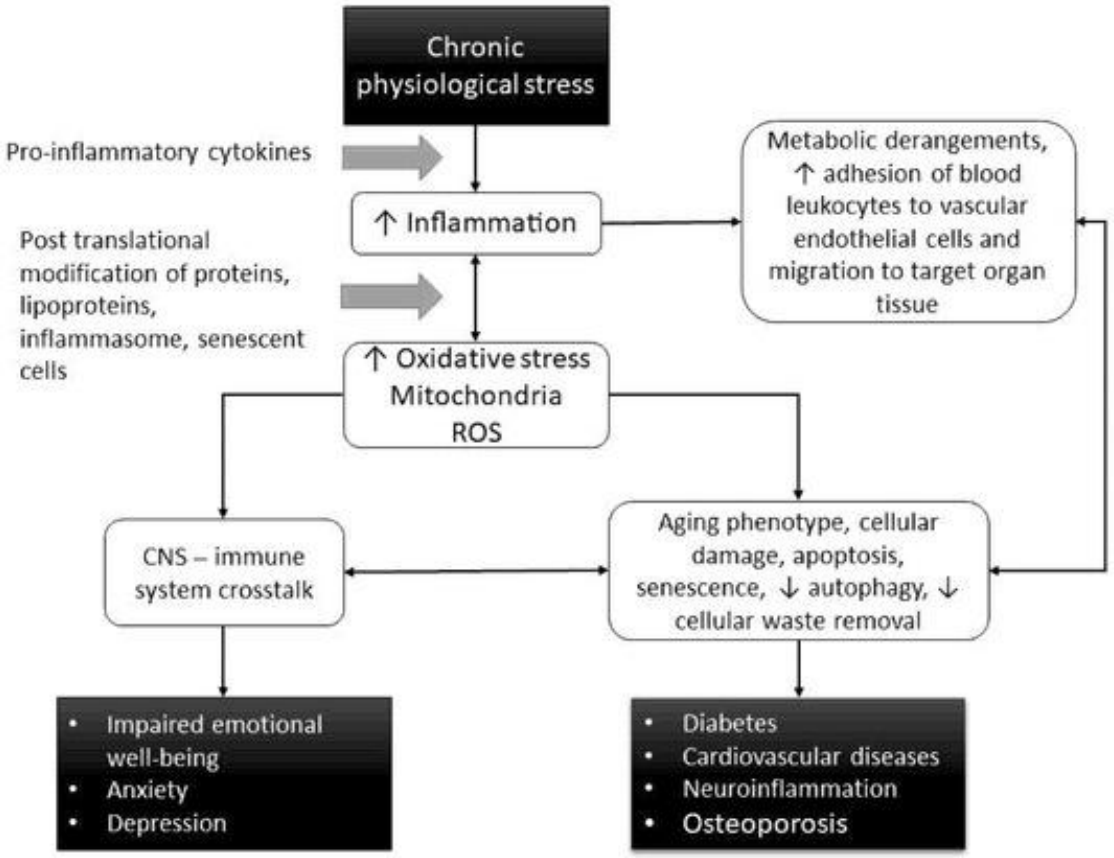
There is accumulating evidence that psychological interventions which aim to improve these cognitive-emotional processes can increase resilience. Approaches such as mindfulness based cognitive therapy, acceptance and commitment therapy (ACT), and cognitive behavioral therapy (CBT) may be effective in increasing the elasticity of and building resilience in the individual with chronic ill health. A recent meta-analysis found that psychological interventions in line with positive psychology

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that focused on resilience significantly increased psychological well-being, decreased anxiety and depression symptoms, and improved quality of life in persons with chronic diseases (Zhou et al., 2024). These results support the promise of psychological models targeting resilience as an intervention.



In addition to the inner psychological variables, social support, economic insurance, and access to information were the external psychosocial items involved in the path of adaptation. According to Saltzman and Hansel (2024), low accessibility to monetary resource, feelings of loneliness, and unawareness were significantly negative predictors of resilience among those suffering chronic health-related stress conditions. These results indicate the importance of multifaceted models, which include internal mechanisms as well as external contexts in enhancing mental health.
Also, the adaptation to chronic illness is culturally and contextually determined. Zulkifli et al. (2024) in a scoping review of quality qualitative studies from multiple Asian countries proposed that resilience frequently originates from cultural beliefs, personal expectations, family obligations, and community standards. These socio-cultural factors not only affect the interpretation and meaning of illness but also how people respond to it. Thus, studying cognitive-emotional adaptation necessitates a culturally sensitive perspective that acknowledges the co-constituted relationship between personal psychology and the broader sociocultural context.

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Problem Statement

Resilience in adaptation to chronic disease Despite a growing recognition of the significance of resilience in the adaptation to chronic illness, many of the current models do not offer a comprehensive model that integrates cognitive and emotional processes. Most interventions only target CR or ER autonomously, limiting their potential for overall psychological adjustment. The lack of a model that could provide an integrated view of the process of dynamic interaction between cognitive appraisals, emotional strategies, and resilience in order to design appropriate intervention program for mental health in the context of chronic diseases is a theoretical and practical issue.

Significance of the Study

The current study thus presents promise for advances in psychological theory and clinical intervention by promoting a more comprehensive, integrated model of cognitive-emotional adaptation in chronic illness. By specifying the mechanisms that mediate resilience, this model can assist clinicians to formulate personalized treatment modalities that are evidence-based and context-bound. Additionally, the model can also be used to sensitize policymakers and health service pro-actioners in developing supportive systems that augment individual psychological mechanisms as well as the socio-environmental influences on mental health in the management of chronic disease.

Aim of the Study

This study aims to construct a psychological model explaining cognitive and emotional adaptation in individuals with CA. The model attempts to refine understanding of the processes by which pi, cognitive appraisals, emotion regulation strategies, and psr interact to impact outcomes, and how these process links then may guide or be incorporated into psychological interventions.

Methodology

This investigation will use a mixed-methods design to provide a comprehensive examination of cognitive-emotional adaptation processes which are conducive to resilience and mental health in people living with chronic illness. A convergent parallel design will be used in which both quantitative and qualitative data are collected separately, then combined in an interpretation phase to provide a more comprehensive, context-based understanding of the [p. 710>] phenomena (Creswell & Plano Clark, 2022). This will include adults (18–65 years old) with chronic conditions such as type 2 diabetes, rheumatoid arthritis or multiple sclerosis with at least 1 year living with the illness. We will use purposive sampling, with stratification by gender, socioeconomic status, and illness type. For the quantitative phase, the target sample size is 300 participants, calculated via power analysis for structural equation models (SEM) with a minimum of 10 cases per parameter estimate (Kline, 2023). For the qualitative study, 20-25 participants will be enrolled until thematically saturation is reached.

A structured self-report questionnaire consisting of validated psychometric instruments will be used to obtain quantitative information. Cognitive appraisal will

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be measured by the ICQ, emotion regulation by the ERQ and resilience by CD-RISC-10. Psychological status (depression, anxiety, and quality of life) will be assessed by the Hospital Anxiety and Depression Scale (HADS) and WHOQOL-BREF. The scales have shown good reliability and cross-cultural validity in chronic disease patients (Liu et al., 2022; Zhang et al., 2023). Data will be analyzed in SPSS and AMOS for descriptive statistics, correlational analyses, and SEM to examine the hypothesized pathways between cognitive-emotional adaptation and resilience outcomes. SEM is especially well suited for evaluating complex psychological models with latent variables and mediating effects (Hair et al., 2022).

The qualitative aspect will encompass semi-structured interviews about participants' lived experiences with chronic illness, interpreting their condition, emotion regulation, and resilience. Interview guide will be established on the basis of the concepts that emerged in the literature and pretested by three informants to ensure clarity and appropriateness. In-person and video calls interviews will be recorded following consent and transcribed to verbatim. Thematic analysis based on Braun and Clarke (2021) will be used to develop patterns and themes in cognitive-emotional adaptation. NVivo will be used to structure and code the data. To establish credibility and trustworthiness, techniques such as member-checking, peer debriefing and audit trails will be employed (Nowell et al., 2022). Combination of quantitative and qualitative data will be triangulated to create a holistic psychological model that represents both aggregate patterns and lived individual perspectives.

Results

Table 1: Descriptive Statistics of Study Variables (N = 300)

Variable	Mean (M)	Standard Deviation (SD)	Minimum	Maximum	Cronbach's α
Illness Cognition (ICQ) – Acceptance	3.78	0.68	1.00	5.00	0.86
Illness Cognition – Helplessness	2.91	0.81	1.00	5.00	0.84
Emotion Regulation (ERQ) – Reappraisal	4.12	0.72	2.00	6.00	0.88
Emotion Regulation – Suppression	3.25	0.64	1.00	5.00	0.79
Resilience (CD-RISC-10)	26.45	6.14	10.00	40.00	0.91
Depression (HADS-D)	8.72	3.25	0.00	20.00	0.87
Anxiety (HADS-A)	9.15	3.41	1.00	21.00	0.88
Quality of Life (WHOQOL-BREF)	58.33	11.24	32.00	94.00	0.89

Descriptive statistics of the study variables can be found in Table 1with mean, standard deviation, and reliability coefficients. The internal reliability of the scales was good, Cronbach's α =. 79 to. 91, which indicated that the instruments applied

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here were reasonable valid in measuring the constructs such as illness cognition, emotion regulation, resilience, depression, anxiety, and QoL.

Table 2: Pearson Correlations Between Core Variables

Variables	1	2	3	4	5	6	7	8
1. ICQ – Acceptance	—							
2. ICQ – Helplessness	–.42**	—						
3. ERQ – Reappraisal	.49**	–.35**	—					
4. ERQ – Suppression	–.23**	.31**	–.21**	—				
5. Resilience (CD-RISC-10)	.55**	–.44**	.47**	–.25**	—			
6. Depression (HADS-D)	–.33**	.49**	–.36**	.28**	–.51**	—		
7. Anxiety (HADS-A)	–.29**	.45**	–.34**	.31**	–.48**	.69**	—	
8. Quality of Life (WHOQOL-BREF)	.52**	–.39**	.41**	–.27**	.62**	–.58**	–.54**	—

Note. $p < .01$ for all coefficients.

The Pearson correlation coefficients regarding all psychological constructs that play a major role in the investigated model are presented in table 2. Acceptance and resilience were strongly associated with each other, and with higher level of depression and anxiety, and helplessness and emotional suppression appeared strongly correlated with depression and anxiety ($p <. 01$).

Table 3: Structural Equation Model Path Coefficients

Path	Standardized β	SE	p-value
ICQ – Acceptance → Resilience	0.41	0.05	< .001
ICQ – Helplessness → Resilience	–0.32	0.06	< .001
ERQ – Reappraisal → Resilience	0.36	0.04	< .001
ERQ – Suppression → Resilience	–0.21	0.05	< .01
Resilience → Depression	–0.47	0.06	< .001
Resilience → Anxiety	–0.42	0.06	< .001
Resilience → Quality of Life	0.53	0.05	< .001

The results of standard path coefficient for illness cognition, emotion regulation, resilience and mental health are presented in summary as below in Table 3. Results demonstrate that resilience mediates the impact of the cognitive emotional processes

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on depression, anxiety, and quality of life in a statistically significant manner ($p < .01$).

Table 4: Model Fit Indices for SEM

Model Fit Index	Value	Recommended Threshold
χ^2 (df = 176, p < .001)	244.63	—
CFI (Comparative Fit Index)	0.961	> 0.95
TLI (Tucker–Lewis Index)	0.949	> 0.95
RMSEA (Root Mean Square Error of Approximation)	0.038	< 0.06
SRMR (Standardized Root Mean Residual)	0.041	< 0.08

Table 4 presents the model fit indices for the SEM analysis and indicates that the model fit is good. The values for CFI (. 961), TLI (. 949), RMSEA (. 038), and SRMR (. 041), all the thresholds equaling or exceeding the recommended cut-off, demonstrating the adequacy of the psychological model of data structure.

Table 5: Emergent Qualitative Themes from Participant Interviews (N = 23)

Theme	Description	Illustrative Quote
Acceptance and Meaning-Making	Participants described accepting illness as a catalyst for resilience.	"I don't see it as suffering anymore—it's a part of my journey."
Emotional Regulation Strategies	Active reappraisal helped reduce emotional distress.	"I try to see the good even when I feel overwhelmed."
Role of Social Support	Family and peer support enhanced adaptive coping.	"Without my support group, I wouldn't have made it this far."
Identity Reconstruction	Illness led to a redefined sense of self and purpose.	"I'm not who I used to be, but I'm stronger in many ways now."
Psychological Growth Through Adversity	Some reported a stronger mental outlook and personal growth post-diagnosis.	"It made me grow emotionally; I value life more now."

Table 5 Organizing themes Community Resilience Model The community resilience model underscores the lived experiences of those adjusting to chronic illness. Broad cognitive-emotional adaptation themes including acceptance, affective management, social connection, identity rebuilding, and personal development highlight a multidimensional aspect of cognitive-emotional adaption for resilience and flourishing.

Discussion

The results of the present study offer compelling evidence for the incrole cognitive-emotional processes in psychological adjustment to chronically illness. Particularly, cognitive interpretations (e.g., acceptance and illness coherence) combined with

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adaptive emotional regulation strategies were associated significantly with greater resilience and better mental health outcomes. These findings align with the recent literature that depict the nexus between cognitive flexibility and emotional regulation as keyfactors for psychological well-being in chronicity (Gouveia et al., 2023; Molla et al., 2022). The mediating effect of resiliency indicates that it is not only an outcome, but a changeable process triggered by psychological mechanisms which can be focused on by interventions.

The correlational data in the current study are consistent with recent meta-analytic research; that is, acceptance-based strategies result in decrements in psychological distress and increases in quality of life among chronic illness populations (Li et al., 2024). As for suppression, it is in a strong relation with depressive symptoms, which is in line with a finding that maladaptive regulation worsening psychological vulnerability is associated with depressive symptoms (Kato & Kubo, 2023). The present findings will contribute to the importance of enhancing adaptive cognitive-emotional responses in patients as a formative mental health care to prevent the decline of mental health states. The data also support the proposed theoretical model that posits emotion regulation as a central mediator in the relationship between illness perceptions and psychological adjustment.

The results of structural equation modeling support an integrative psychological model where resilience is a mechanism of indirect effect of cognitive-emotional adaptation on depression, anxiety, and quality of life. Building on previous models of health psychology, emotion regulation is considered a fundamental process mediating psychological correlates (Arbour-Nicitopoulos et al., 2021). The good model fit enhances the empirical validity of the model as well. Most significantly, the model has clinical relevance, providing a basis upon which enhanced adaptive cognitive and emotion regulation interventions could be developed to promote resilience and mental health in populations with chronic illness.

Qualitative themes provided insight into quantitative results by highlighting how individuals reconstruct meaning, identity, and coping responses over the course of their illness. Findings in the model theme on acceptance/ emotional processing, and connection were reflected in the quantitative patterns detected, indicating the ecological validity of the model. These results resonate with previous qualitative work in which psychological growth and reappraisal were noted to be popular coping strategies reported by respondents living with long-term health conditions (Nwosu et al., 2023). The integration of these two types of information highlights the complex but systematic nature of psychological adaptation in chronic illness, and underscores the multifactorial nature of interventions that would be needed in support of it.

In sum, these findings reflect an emerging understanding in current health psychology of the requirement for comprehensive, psychologically informed approaches to the management of chronic diseases. While Resilience as cognitive-emotional adaptation takes on significance not only as a theoretical promise, but as a practical need in the current atmosphere of illness that has become a way of life for many -- with patients demanding and deserving more in order to thrive and for society to save resources (Silva et al., 2025). Our results have implications for the design of future intervention models that should include acceptance, reappraisal, and emotional flexibility training to foster adaptive coping and better mental health trajectories.

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Future Direction

Future research should use longitudinal and cross-cultural designs to address how cognitive-emotional adaptation and resilience develop over time and across societies. Inclusion of neurobiological markers and ecological momentary assessment may also provide more nuanced understanding of the fluctuating and context-sensitive nature of emotional regulation and resilience processes in illness.

Limitations

The present study is not without limitations. The cross-sectional nature of the study precludes drawing causal inferences, and self-report outcome measures are subject to social desirability and recall bias. Furthermore, the sample was restricted to those with particular chronic diseases, which may restrict its generalizability to broader illness groups.

Conclusion

This paper evidenced a cognitive-emotional model of adaptation to chronic medical illness, stressing the salient contributions of illness representation, emotion regulation, and resilience on mental health. Developed based on quantitative and qualitative evidence, the model presents a strong and rich structure that may help future psychological interventions to foster mental well-being in the chronically ill.

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