

RESEARCH LETTER

Problem-focused coping mediates the link between cancer-specific self-efficacy and quality of life: A research letter

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1. Introduction

Cancer profoundly impacts patients across physical, emotional, and psychological dimensions, contributing significantly to the global burden of disease and driving high rates of disability-adjusted life years (DALYs) worldwide, which diminishes their quality of life (QoL). Effective cognitive and behavioral strategies are crucial to mitigating these treatment-related adversities. Coping strategies are conceptualized as the processes individuals mobilize to modulate psychological distress, commonly categorized into problem-focused coping (PFC; active steps to alter or resolve the stressor) and emotion-focused coping (EFC; attempts to regulate secondary emotional distress). While literature robustly supports the positive impact of PFC on well-being, the precise role of EFC remains complex and contradictory.

Concurrently, cancer-specific self-efficacy—an individual's perceived competence to successfully manage multi-faceted oncological challenges—serves as a primary cognitive resource that directly predicts enhanced QoL. In recent clinical intervention studies, this resource is a foundational cornerstone for structured psychological programs designed to alleviate severe emotional vulnerabilities, such as the fear of cancer recurrence, thereby directly facilitating post-treatment adaptation.¹ As Merluzzi and colleagues noted,² cancer patients who utilize active coping strategies demonstrate superior adjustment to the stark realities of their diagnosis and treatment compared to those relying on passive, avoidant modalities. Parallel to this, Manne *et al.*³ demonstrated that cancer-specific self-efficacy promotes superior QOL outcomes by bolstering patients' confidence to navigate treatment-induced adversities and effectively regulate illness-related stressors.

Although previous psycho-oncological studies have examined these variables in isolation, the integrated, underlying mechanism linking them remains under-explored, particularly regarding how distinct coping pathways explain this overarching relationship. To address this empirical gap, this study investigates the parallel mediating roles of PFC and EFC between cancer-specific self-efficacy and QOL within a Turkish clinical sample. Based on the theoretical premise that self-efficacy is selectively associated with active agentic behaviors rather than passive emotional regulation, we hypothesized that higher self-efficacy would positively predict PFC, which in turn would predict enhanced QOL, thereby establishing a significant mediating path for PFC, but not for EFC.

2. Methods

The sample comprised 120 Turkish cancer patients undergoing treatment at a specialized

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Oncology Training and Research Hospital ($M_{age} = 49.21$, $SD = 11.83$; 70.8% female). Participants' cancer history ranged from 1 to 334 months, encompassing heterogeneous oncological classifications, predominantly breast cancer (44.2%). Formal ethical clearance was obtained from the relevant institutional review board and healthcare directorates prior to data collection. Participants were recruited via a consecutive sampling method based on volunteerism during routine outpatient clinic visits or ongoing inpatient admissions (see Appendix). Following formal written informed consent, participants completed three standardized psychometric instruments: the Cancer Behavior Inventory (CBI) to assess cancer-specific self-efficacy⁴ (Cronbach's $\alpha = 0.91$), the Multidimensional Quality of Life Scale-Cancer (MQLS-C) to measure overarching quality of life ($\alpha = 0.93$), and the Ways of Coping Inventory (WOCI), specifically utilizing the problem-focused ($\alpha = 0.84$) and emotion-focused ($\alpha = 0.85$) dimensions to measure coping strategies. A parallel multiple mediation analysis (PROCESS Macro Model 4)⁵ tested the predictive mechanisms, operationalizing cancer-specific self-efficacy as the independent variable (X), QOL as the dependent variable (Y), and PFC and EFC as parallel mediators (M_1 and M_2). Indirect effects were evaluated via percentile bootstrap estimation (5,000 resamples, 95% confidence intervals). This study was reported in accordance with the STROBE guidelines.

3. Results

The parallel multiple mediation model was statistically significant ($F(3,116) = 21.95$, $p = 0.000$), accounting for approximately 36% of the total variance in patients' quality of life ($R^2 = 0.362$). The total effect (path c ; $B = 0.71$, $SE = 0.10$, $p = 0.000$, 95% CI [0.50,0.91]) and the direct effect

(path c' ; $B = 0.46$, $SE = 0.12$, $p = 0.001$, 95% CI [0.23,0.69]) of the model were both highly significant. This confirmed that cancer-specific self-efficacy remained a robust direct predictor of QOL even after controlling for the parallel mediators. Regarding the specific pathways of the parallel mediators (illustrated in Figure 1), cancer-specific self-efficacy was a significant positive predictor of PFC (path a_1 ; $B = 0.19$, $SE = 0.026$, $p = 0.000$, 95% CI [0.14,0.24]). In turn, PFC significantly and positively predicted QOL (path b_1 ; $B = 1.32$, $SE = 0.36$, $p = 0.004$, 95% CI [0.61,2.03]). Crucially, bootstrap confidence intervals revealed that only the indirect effect of PFC was statistically significant ($B = 0.25$, $SE = 0.082$, 95% CI [0.098,0.43]). In stark contrast, cancer-specific self-efficacy did not significantly predict EFC (path a_2), and EFC did not significantly predict QOL (path b_2). Consequently, the indirect effect of cancer-specific self-efficacy on QOL through EFC was statistically non-significant, as the bootstrap confidence intervals included zero.

4. Discussion

The empirical findings demonstrate that cancer-specific self-efficacy is both directly and indirectly associated with enhanced QoL in cancer patients, with PFC uniquely mediating this relationship. Self-efficacy appears to facilitate an adaptive interpretation of the illness experience, potentially mitigating subjective stress, targeting vulnerabilities such as the fear of recurrence, and directly supporting overall QoL. Beyond this direct effect, highly self-efficacious patients possess a pronounced sense of personal control and an active "fighting spirit," which corresponds to the deployment of active PFC strategies—such as direct problem-solving and proactive management of therapeutic regimens. The non-significant role of EFC

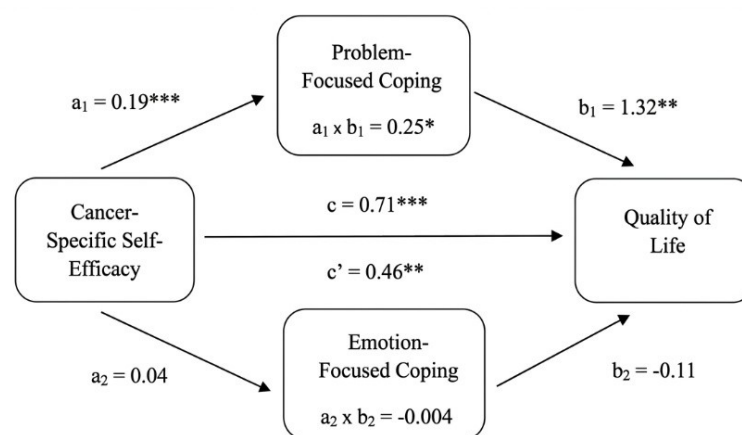


Figure 1. Mediating role of problem-focused coping and emotion-focused coping in the relation between cancer-specific self-efficacy and quality of life. Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

could potentially be attributed to a suppression effect, where adaptive emotional expression and maladaptive cognitive avoidance within the overarching EFC construct may have counterbalanced each other. Notably, the robust role of self-efficacy and PFC across this clinically heterogeneous sample suggests that these variables operate as crucial, transdiagnostic psychological assets that function independently of specific medical stages. Certain limitations must be acknowledged: the study utilized a single-center sample composed entirely of Turkish citizens, which controls for broad ethnic variations but limits global generalizability. Furthermore, due to clinical heterogeneity, specific medical treatment modalities (e.g., chemotherapy, radiotherapy, surgery) were not controlled as covariates within the current mediation model. Lastly, the cross-sectional design precludes drawing definitive causal inferences.

5. Conclusion

Clinical interventions aiming to maximize patient QoL should explicitly target these dual psychological resources. In countries like Turkey, formal support mechanisms systematically integrated into the healthcare system to enhance coping or foster cancer-specific self-efficacy are critically lacking. Incorporating targeted psychoeducational and clinical intervention programs—such as Cognitive Behavioral Psycho-Oncology or Acceptance and Commitment Therapy (ACT)—alongside digital shared decision-support tools into standard oncological care is imperative to facilitate the treatment trajectory, alleviate fear of recurrence, and bolster personal agency. This clinical recommendation may also apply to other healthcare systems facing a similar lack of structured psychosocial support. Furthermore, these psychological supportive mechanisms should not be restricted to patients alone; rather, they must be comprehensively integrated into the broader healthcare system to support immediate family caregivers, who concurrently navigate the profound chronic stressors associated with the malignant disease trajectory.

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Conflict of interest

The authors declare they have no competing interests.

Author contributions

Conceptualization: All authors

Formal analysis: All authors

Investigation: All authors

Methodology: All authors

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Writing—review & editing: All authors

Ethics approval and consent to participate

Formal ethical clearance was obtained from the Human Subjects Ethics Committee of Middle East Technical University (Date: April 20, 2012, No: B.30.2.ODT.0.AH.00.00/126/53-872) and relevant healthcare directorates prior to data collection. All participants provided formal written informed consent.

Consent for publication

Both oral and verbal informed consent was obtained from every participant.

Availability of data

The datasets generated and analyzed during the current study are not publicly available due to explicit institutional review board restrictions regarding patient privacy and clinical data confidentiality but are available from the corresponding author upon reasonable academic request. All psychometric instruments utilized in this study, including the Cancer Behavior Inventory (CBI), Multidimensional Quality of Life Scale-Cancer (MQLS-C), and Ways of Coping Inventory (WOCI), were used with formal permission from the original authors or copyright holders, or via established institutional licensing agreements.

Further disclosure

Gemini (Version 1.5 Pro) was utilized exclusively for language polishing, grammatical corrections, and enhancing prose readability under strict human author guidance and control. The AI tool was not used in study design, data analysis, statistical interpretation, or drawing empirical conclusions. All AI-assisted phrasing and content updates were manually verified by the authors for clinical accuracy, theoretical alignment, and originality.

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Appendix

Detailed sampling and data collection procedures

Data were collected between 2012 and 2013. The primary inclusion criteria required participants to be over 18 years of age and to have a confirmed cancer diagnosis. Given the setting of a specialized oncology hospital, questionnaires were administered face-to-face to both outpatients during routine visits and inpatients receiving ongoing care. Only those who explicitly agreed to participate were included. Owing to the practical constraints of data collection in an active clinical environment, the exact number of patients initially approached, those who declined, or those who provided incomplete responses were not systematically documented; consequently, a formal response rate could not be calculated. The final sample was strictly evaluated for univariate outliers using standardized z-scores. Since all standardized scores fell within the acceptable range of ± 3.29 , no cases were excluded, yielding the final analyzed sample of 120 eligible participants.