

***Developing an Educational Program for Caregivers of Stroke Patients:
Integrating Well-being and Basic Psychological Needs***

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Abstract

The objective of this study was to develop an educational program tailored to the needs of adult informal caregivers of stroke patients, focusing on enhancing caregivers' well-being through the integration of principles of psychological capital and basic psychological needs satisfaction. Drawing on quantitative data from 100 adult caregivers, the study investigated the correlation between psychological capital, basic psychological needs satisfaction, and psychological well-being. Additionally, qualitative data collected through focus group interviews with a subset of adult caregivers informed the development of the educational program. Thematic analysis of the interviews identified key themes related to autonomy, competence, relatedness, and psychological well-being, guiding to design program. The program was informed by theoretical frameworks such as Stress and Coping Theory and Self-Determination Theory. The educational program aims to empower adult caregivers by addressing their autonomy, competence, and relatedness needs through sessions focused on stroke understanding, communication skills, practical caregiving abilities, coping strategies, and support network development. Adult caregivers are equipped with the knowledge, skills, and support necessary to navigate caregiving challenges while maintaining their well-being. This research contributes to a deeper understanding of caregiver well-being and underscores the importance of considering adult caregivers' psychological needs in educational interventions. By recognizing the mediating role of basic psychological needs and incorporating curriculum design & development principles. The study offers insights into effective strategies for supporting adult caregivers and promoting their well-being in the context of stroke care.

Keywords: Caregivers of Stroke Patients, Well-being, Basic Psychological Needs, Educational Program

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Introduction

Stroke is a significant public health issue and the second leading cause of death globally. In addition to its high mortality rate, stroke often leaves survivors with chronic disabilities, requiring long-term care and support from caregivers (Donkor, 2018). Informal caregivers, often family members, play a critical role in assisting stroke survivors with activities of daily living. However, the sudden onset of stroke means that these caregivers frequently assume their roles without adequate preparation or training, leading to increased stress and burden (Byun & Evans, 2015). Research by Liu et al. (2020) highlights that caregiving burdens negatively affect both the quality of patient care and the well-being of caregivers, manifesting in increased strain, anxiety, emotional problems, poor health status, reduced quality of life, social isolation, and diminished psychological well-being.

Informal caregivers are essential to the recovery of stroke patients as they are deeply involved in every aspect of care. However, caregivers often report needing more support from healthcare systems throughout the caregiving process to improve care delivery and maintain their health and well-being (Tseung et al., 2019). To address this, several studies have explored the needs of stroke caregivers at various stages of recovery to design effective educational programs. Such programs are critical because caregivers require the knowledge, skills, and resources necessary to manage stroke patients effectively while also preventing psychological complications and supporting their well-being (Zhang et al., 2019).

Psychological well-being plays a vital role in enabling individuals to maintain normal lives, feel positive, and perform caregiving duties effectively (Huppert, 2009). Factors affecting psychological well-being primarily arise from internal characteristics, such as motivation and psychological needs (Bamrungjite, 2018; Kim & Kim, 2005; Kingmali et al., 2018; Leonardi & Harsono, 2022). These internal factors can be explained through Basic Psychological Needs Theory, which focuses on intrinsic motivation and the satisfaction of autonomy, competence, and relatedness needs. The fulfillment of these needs, within a supportive context, enhances an individual's well-being and quality of life (Deci & Ryan, 2000; Ryan & Deci, 2000; Vansteenkiste et al., 2020).

Similarly, psychological capital is a critical psychological resource that develops alongside individual growth and relates to intrinsic motivation. Psychological capital encompasses positive psychological states such as optimism, resilience, hope, and self-efficacy, which help individuals adapt to challenges and maintain well-being (Luthans & Youssef-Morgan, 2017). Studies have shown a significant positive relationship between psychological capital and psychological well-being. Psychological capital acts as a protective factor against negative emotion, supports cognitive mechanisms such as focusing and interpreting, and promotes balanced psychological well-being (Avey et al., 2010; Avey et al., 2011; Diener & Biswas-Diener, 2011; Hansen et al., 2015; Manzano-Garcia & Ayala, 2017; Newman et al., 2014; Prasath et al., 2022; Sweetman et al., 2011).

Given these findings, this study aims to develop an educational program tailored to the specific needs of informal caregivers of stroke patients. The program focuses on enhancing psychological well-being by integrating principles of psychological capital and Basic Psychological Needs Theory. By addressing the psychological needs of caregivers, the program seeks to improve their well-being, equip them with essential skills, and ultimately contribute to better caregiving outcomes.

Method

Participants

Data were collected from 100 informal caregivers of stroke patients to examine the correlation between psychological capital, basic psychological needs, and psychological well-being. Focus group interviews with 8 participants, including stroke caregivers and health professionals, were also conducted. Thematic analysis identified key issues related to the application of basic psychological needs and psychological capital in curriculum design and educational program development.

Instrumentation

A structured questionnaire was administered to assess psychological capital (Luthans & Youssef-Morgan, 2017), basic psychological needs (Ryan & Deci, 2000), and psychological well-being (Ryff & Keyes, 1995) among stroke caregivers. The questionnaire utilized a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), and was validated for both reliability and accuracy. To facilitate interpretation, scores were categorized into four levels: 1.00–2.00 (lowest level), 2.01–3.00 (low level), 3.01–4.00 (moderate level), and 4.01–5.00 (high level). The data collected were analyzed using Pearson's product-moment correlation coefficient to explore the relationships among the key variables.

In addition to the quantitative assessments, qualitative data were gathered through focus group discussions guided by a semi-structured interview framework. Thematic analysis was conducted to identify key themes and insights, providing a deeper understanding of caregivers' experiences and informing the design and development of the educational program. This integrated approach ensured a comprehensive analysis, combining statistical rigor with contextual depth.

Procedures

This study employed a mixed-methods design to develop an educational program tailored to the needs of informal caregivers of stroke patients. Ethical approval was obtained from the Srinakharinwirot University Ethics Committee (SWUEC-672025) for research involving human participants. The procedures were as follows:

1. Participant Selection and Quantitative Assessment

A total of 100 informal caregivers of stroke patients who met the inclusion criteria were selected. Participants were provided with detailed information about the study and asked to give informed consent. They completed questionnaires assessing psychological capital, basic psychological needs, and psychological well-being. The data were used to investigate the correlations among these factors and to develop a causal model.

2. Focus Group Interviews

Eight participants, including stroke caregivers and health professionals, participated in focus group interviews. These sessions included survey-type questions to gather basic demographic information, details about caregiving burden, the nature of caregiving activities (e.g., specific tasks and their frequencies), and the use of or need for health and supportive services.

Participants were also asked open-ended questions regarding caregiving challenges and their needs for information, education, and skill training. Field notes were taken during the discussions and transcribed for thematic content analysis.

3. Curriculum and Program Design

Insights from the quantitative and qualitative data were synthesized to design a curriculum and educational program. The program was structured to address caregiver needs by integrating the principles of psychological capital and basic psychological needs, ensuring its relevance and applicability to support informal caregivers in their roles.

Data Analysis

We used descriptive statistics to describe the sociodemographic characteristics of participants and used Pearson's product-moment correlation coefficient to analyze the correlation between factors. Then, a causal model was performed to estimate the influence of the variables. Open-ended responses regarding key issues about addressing the needs of informal caregivers of stroke patients in the caregiving process were summarized by a researcher to design a curriculum and educational program.

Results

Part I: Investigate the Correlation Between Psychological Capital, Basic Psychological Needs, and Psychological Well-being

The study consisted of 100 informal caregivers of stroke patients, most of them were female (70%), the mean age was 45.8 years ($SD = 12.3$), was the patient's husband/wife (54%), the average duration of caring was 12.9 months ($SD = 11.6$), the average hours caring for patients per day was 11 hours ($SD = 4.9$). Most of them had three duties in caring for patients (46%): taking patients to the hospital (83%), assisting patients in activities of daily living (80%), and assisting with patients' rehabilitation at home (78%), respectively.

Table 1: Pearson's Correlation Coefficient Between Psychological Capital, Basic Psychological Needs, and Psychological Well-being ($n=100$)

	PsyCap	Autonomy	Competence	Relatedness	PWB
PsyCap	1				
Basic Psychological Needs					
Autonomy	.492**	1			
Competence	.613**	.445**	1		
Relatedness	.463**	.414**	.435**	1	
PWB	.693**	.551**	.698**	.568**	1
<i>M</i>	4.20	4.00	4.12	4.13	4.18
<i>SD</i>	.55	.76	.64	.67	.57

** $p < 0.01$

The findings of this study present significant relationships between Psychological Capital (PsyCap) and Basic psychological needs—autonomy, competence, and relatedness—as well as their impact on psychological well-being (PWB). The findings are divided into several key points:

1. Psychological Capital as Determinants of Basic Psychological Needs

The findings of this study demonstrate that Psychological Capital—encompassing optimism, hope, resilience, and self-efficacy—significantly predicts all three basic psychological needs: autonomy, competence, and relatedness. These results provide critical insights into the role of psychological strengths in shaping individuals' perceptions of their abilities and relationships. Specifically, Psychological Capital was strongly associated with autonomy (Estimate = 0.68, $p < 0.001$). This indicates that individuals with higher levels of optimism, resilience, and belief in their capabilities are more likely to perceive themselves as independent and in control of their actions. These findings align with the principles of Self-Determination Theory (SDT), which emphasizes the essential role of autonomy in fostering intrinsic motivation and enhancing overall well-being.

In addition to autonomy, Psychological Capital showed a robust predictive relationship with competence (Estimate = 0.72, $p < 0.001$). Individuals with greater psychological resources were found to have a stronger sense of efficacy and confidence in managing tasks effectively. This underscores the importance of psychological strengths in enhancing perceived capabilities, which contribute to a sense of accomplishment and satisfaction in daily activities. Finally, Psychological Capital significantly predicted relatedness (Estimate = 0.57, $p < 0.001$). The positive influence of psychological strengths, such as hope and resilience, on relatedness highlights their role in fostering meaningful and supportive relationships. Individuals with high levels of Psychological Capital are better equipped to build and maintain connections, contributing to a more supportive social environment and fulfilling a critical psychological need.

2. Basic Psychological Needs as Determinants of Psychological Well-being

The analysis revealed that all three basic psychological needs—autonomy, competence, and relatedness—had significant positive effects on psychological well-being, highlighting their critical role in fostering overall mental health and life satisfaction. Autonomy was found to have a significant yet modest impact on psychological well-being (Estimate = 0.12, $p < 0.001$). This suggests that a sense of independence and control over one's actions contributes positively to well-being. However, the relatively smaller effect size indicates that autonomy likely interacts with other factors to produce a more substantial influence on overall well-being. These findings align with Self-Determination Theory (SDT), which emphasizes autonomy as a key component of intrinsic motivation and personal growth. Competence emerged as a strong predictor of psychological well-being (Estimate = 0.31, $p < 0.001$). Individuals who perceive themselves as capable and effective in managing tasks reported higher levels of well-being. This underscores the importance of fostering a sense of efficacy and skill development as a pathway to enhancing psychological health. These results highlight the pivotal role of competence in enabling individuals to achieve a sense of accomplishment and satisfaction in their daily lives. Relatedness also demonstrated a significant positive effect on psychological well-being (Estimate = 0.18, $p < 0.001$). This finding emphasizes the importance of meaningful interpersonal relationships in promoting psychological health. Feeling connected and supported by others contributes to a sense of

belonging, which is essential for maintaining emotional stability and overall well-being. These results further support the notion that social connections are integral to psychological health and satisfaction.

3. Direct Effect of Psychological Capital on Psychological Well-being

The findings further revealed that Psychological Capital had a direct and significant positive effect on psychological well-being (Estimate = 0.31, $p < 0.001$). This indicates that, beyond its role in influencing basic psychological needs, Psychological Capital independently contributes to an individual's overall well-being. This result aligns with prior research emphasizing Psychological Capital as a vital personal resource capable of buffering against stress and fostering positive mental health outcomes. Specifically, individuals with higher levels of optimism, resilience, hope, and self-efficacy reported greater psychological well-being, even when satisfaction with basic psychological needs was accounted for. This suggests that Psychological Capital serves as an intrinsic strength, enabling individuals to maintain higher levels of well-being regardless of external circumstances. The direct effect highlights its unique role in enhancing psychological health, demonstrating its importance not only as a mediator but also as an independent factor in promoting mental well-being.

These findings underscore the critical importance of developing Psychological Capital in interventions aimed at improving psychological well-being. Its direct contribution reinforces its value as a foundational resource that can complement the satisfaction of basic psychological needs to foster holistic mental health.

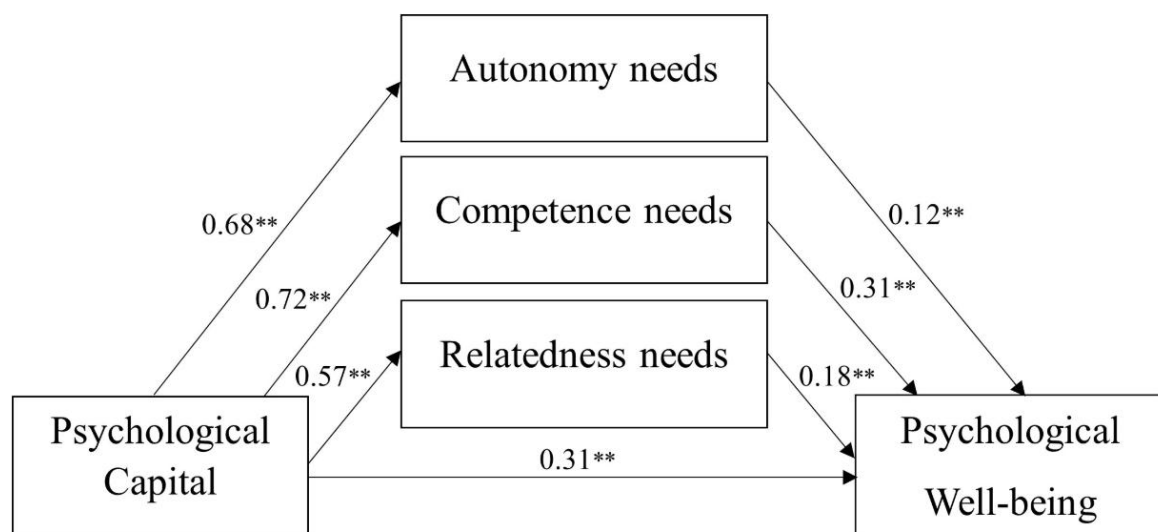


Figure 1: The Causal Model of the Influence of Psychological Capital on Psychological Well-being of Adult Informal Caregivers of Stroke Patients With Basic Psychological Needs as a Mediating Variable

Specifically, individuals with higher levels of optimism, resilience, hope, and self-efficacy reported greater psychological well-being, even when satisfaction with basic psychological needs was accounted for. This suggests that Psychological Capital serves as an intrinsic strength, enabling individuals to maintain higher levels of well-being regardless of external circumstances. The direct effect highlights its unique role in enhancing psychological health, demonstrating its importance not only as a mediator but also as an independent factor in promoting mental well-being.

4. Implications for Practice

The results suggest several practical implications:

4.1 Interventions focusing on Psychological Capital: Developing interventions that enhance psychological capital (e.g., through resilience training, goal-setting workshops, or fostering positive thinking) could boost psychological well-being. Strengthening psychological capital can help individuals not only build internal strengths but also fulfill basic psychological needs, leading to improved well-being.

4.2 Supporting Basic Psychological Needs: Programs aimed at increasing autonomy, competence, and relatedness could be valuable for enhancing well-being. For instance, creating environments that support autonomy, recognize competence, and foster relationships can contribute to higher psychological well-being among individuals.

4.3 Holistic Approach: Given that psychological capital influences psychological well-being both directly and through the fulfillment of basic psychological needs, a holistic approach to well-being should consider both individual psychological strengths and contextual factors that help meet these basic needs.

Part II: Design a Curriculum and Educational Program That Is Consistent With Caregiver Needs Through the Integration of Principles of Psychological Capital and Basic Psychological Needs

Session 1: Understanding Stroke and Caregiver Roles

- Overview of stroke: causes, types, and common effects on patients
- Roles and responsibilities of stroke caregivers
- Importance of caregiver self-care and setting boundaries
- Promoting autonomy: Empowering caregivers to participate in care decisions and self-care practices

Session 2: Communication and Advocacy Skills

- Effective communication strategies for interacting with stroke patients
- Techniques for providing emotional support and reassurance
- Advocating for stroke patients' needs within healthcare settings
- Building competence: Practicing communication and advocacy skills through role-playing and real-life situation

Session 3: Practical Caregiving Skills

- Hands-on training in activities of daily living (ADLs) assistance, such as bathing, dressing, and feeding
- Safe transfer and mobility techniques for stroke patients
- Medication management and monitoring for potential complications
- Enhancing competence: Providing caregivers with practical skills and resources to confidently perform caregiving tasks

Session 4: Coping Strategies and Stress Management

- Recognizing and managing caregiver stress and burnout
- Techniques for coping with challenging behaviors and emotions in stroke patients
- Self-care practices to maintain physical and emotional well-being
- Fostering relatedness: Creating a supportive environment for caregivers to share experiences, offer peer support, and build resilience together

Session 5: Building a Support Network

- Connecting caregivers with community resources and support services
- Establishing peer mentoring relationships and ongoing support networks
- Strategies for maintaining social connections and seeking help when needed
- Promoting relatedness: Encouraging caregivers to cultivate meaningful relationships and networks for ongoing support and encouragement

Discussion

This study highlights the pivotal role of Psychological Capital and basic psychological needs in shaping psychological well-being. The findings underscore the multidimensional nature of well-being, demonstrating how both individual strengths and the fulfillment of basic psychological needs interact to promote holistic mental health. The results reveal that Psychological Capital, encompassing optimism, resilience, hope, and self-efficacy, not only influences psychological well-being indirectly through its impact on autonomy, competence, and relatedness but also has a significant direct effect (Estimate = 0.31, $p < 0.001$). This finding suggests that individuals with greater Psychological Capital possess intrinsic resources that buffer against stress and enhance their well-being, irrespective of the extent to which their basic psychological needs are satisfied. Such results align with prior research emphasizing Psychological Capital as a foundational personal resource for fostering positive mental health outcomes and stress resilience.

Among the basic psychological needs, competence showed the strongest predictive relationship with psychological well-being (Estimate = 0.31, $p < 0.001$), indicating that a sense of efficacy and the ability to manage tasks effectively is critical for improving well-being. However, autonomy (Estimate = 0.12, $p < 0.001$) and relatedness (Estimate = 0.18, $p < 0.001$) also played significant roles, highlighting the necessity of fostering independence and meaningful interpersonal connections. These findings align with Self-Determination Theory, which posits that the satisfaction of these three basic needs is essential for optimal functioning and mental health. Overall, the results emphasize that Psychological Capital serves as both a direct contributor to psychological well-being and a mechanism for satisfying basic psychological needs. Together, these factors create a comprehensive framework for understanding how to enhance mental health. The findings advocate for interventions that address both individual psychological strengths and contextual factors that support autonomy, competence, and relatedness.

This study also utilized a mixed-methods approach to examine the relationships between psychological capital, basic psychological needs, and psychological well-being among informal caregivers of stroke patients. The combination of quantitative data and thematic analysis of qualitative interviews provided a comprehensive understanding of caregivers' experiences and challenges. These findings were instrumental in designing an educational program tailored to address their specific needs. The discussion integrates the key findings with relevant theoretical frameworks and their practical implications.

Table 2: Educational Program for Adult Informal Caregivers of Stroke Patients

Session	Topic	Theoretical Background	Principles/Concepts
1	Understanding Stroke and Caregiver Roles	<ul style="list-style-type: none"> - Stress and Coping Theory: Understanding the impact of stress on caregivers and the importance of self-care. - Self-Determination Theory: Emphasizing autonomy in caregiving decision-making. 	<p>Autonomy: Empowering caregivers to make informed decisions about caregiving.</p> <p>Psychological Well-being: Recognizing the importance of self-care for maintaining caregiver well-being.</p>
2	Communication and Advocacy Skills	<ul style="list-style-type: none"> - Social Learning Theory: Learning effective communication and advocacy skills through observation, imitation, and practice. - Transactional Model of Stress and Coping: Teaching caregivers' strategies for managing stress and supporting stroke patients. 	<p>Competence: Building caregivers' confidence in communication and advocacy skills through practice and feedback.</p> <p>Relatedness: Fostering supportive relationships through effective communication.</p>
3	Practical Caregiving Skills	<ul style="list-style-type: none"> - Bandura's Theory of Self-Efficacy: Building caregivers' confidence and competence in performing caregiving tasks through skill-building activities. - Adult Learning Theory: Providing hands-on training and experiential learning opportunities to enhance practical skills acquisition. 	<p>Competence: Equipping caregivers with practical skills and resources to enhance caregiving effectiveness.</p>
4	Coping Strategies and Stress Management	<ul style="list-style-type: none"> - Lazarus and Folkman's Transactional Model of Stress and Coping: Teaching caregivers adaptive coping strategies to manage stressors associated with caregiving. - Resilience Theory: Building caregivers' resilience through stress management techniques and self-care practices. 	<p>Autonomy: Empowering caregivers to choose and implement coping strategies that work best for them.</p> <p>Psychological Well-being: Promoting caregiver resilience and well-being through stress management techniques.</p>
5	Building a Support Network	<ul style="list-style-type: none"> - Social Support Theory: Recognizing the importance of social connections and support networks in buffering caregiver stress and promoting well-being. - Attachment Theory: Facilitating the formation of supportive relationships and attachment bonds within the caregiving community. 	<p>Relatedness: Creating a supportive environment where caregivers can connect, share experiences, and provide mutual support.</p> <p>Psychological Well-being: Enhancing caregiver well-being through social support networks and meaningful relationships.</p>

The findings indicate that caregiving roles are deeply influenced by stress and the need for emotional resilience, as suggested by the Stress and Coping Theory. Caregivers often

encounter high levels of stress due to the demands of their role, impacting their well-being. In this context, practitioners emphasized the importance of self-care and decision-making, aligning with the Self-Determination Theory. By promoting autonomy and empowering caregivers to take control of their caregiving responsibilities, the program helped to reduce stress and improve psychological well-being. These findings underscore the significance of fostering autonomy to enhance caregivers' capacity to manage their roles effectively.

Furthermore, the sessions on communication and advocacy skills revealed the application of Social Learning Theory and the Transactional Model of Stress and Coping. Caregivers improved their competence by observing practitioner demonstrations, engaging in role-playing activities, and practicing advocacy techniques. These interactive methods allowed caregivers to model effective behaviors and apply them in real-life situations. Additionally, stress management strategies introduced during these sessions reinforced the importance of coping mechanisms in addressing caregiving challenges. This alignment between theoretical frameworks and practical interventions highlights the value of incorporating peer feedback and role-playing to build both competence and confidence among caregivers.

In addition to communication skills, practical caregiving skills emerged as a critical area for caregiver development. The application of Self-Efficacy Theory and Adult Learning Theory in these sessions provided caregivers with hands-on training opportunities that significantly boosted their confidence and competence. As Bandura's Self-Efficacy Theory suggests, mastery experiences are crucial for building self-efficacy. By engaging in experiential learning activities, caregivers were able to apply their knowledge in practical scenarios, reinforcing their caregiving capabilities. This approach highlights the importance of skill-based training in future programs to ensure caregivers feel confident and capable in their roles.

The program also addressed stress management and resilience through activities aligned with Lazarus and Folkman's Transactional Model of Stress and Coping and Resilience Theory. Caregivers were encouraged to adopt adaptive coping strategies tailored to their unique stressors. Resilience-building exercises, emphasizing self-care and psychological well-being, helped caregivers navigate ongoing challenges more effectively. These strategies not only reduced stress but also enhanced caregivers' long-term resilience. Importantly, the ability to tailor stress management techniques to individual needs allowed caregivers to autonomously select and implement strategies that worked best for them, reinforcing the principle of autonomy.

Lastly, the development of support networks highlighted the relevance of Social Support Theory and Attachment Theory. Caregivers reported that forming connections within the caregiving community provided emotional security and reduced feelings of isolation. These supportive relationships served as a buffer against stress, promoting psychological well-being. The findings suggest that fostering a sense of relatedness among caregivers is essential for enhancing their mental health and reducing caregiving burdens. The inclusion of support networks in educational programs can thus play a crucial role in sustaining caregiver well-being.

Limitations and Future Research

While the findings are promising, some limitations should be considered. The study's cross-sectional nature limits causal interpretations: future research should explore longitudinal

designs to confirm these relationships over time. Additionally, investigating how contextual factors (e.g., severity of care burden, family support) interact with psychological capital to influence basic psychological needs and well-being could provide a more comprehensive understanding of these dynamics. Future interventions should continue to build on these findings, emphasizing tailored, skill-based, and supportive strategies to empower caregivers and promote their long-term well-being.

Conclusion

This study highlights the pivotal role of psychological capital in influencing basic psychological needs and psychological well-being. By fostering optimism, hope, resilience, and self-efficacy, individuals are better equipped to feel autonomy, competence, and relatedness, which in turn enhances psychological well-being. Both direct and mediated pathways through which psychological capital impacts psychological well-being underscore its value in interventions aimed at improving mental health and quality of life. Developing programs that nurture both internal psychological resources and fulfill basic needs may be key to enhancing psychological well-being across different populations.

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