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ORIGINAL RESEARCH

# Post-Traumatic Growth in Young and Middle-Aged Breast Cancer Patients After Modified Radical Mastectomy: A Phenomenological Study

Qiuyu Gu[1,2], Hongxia Hua[3], Linan Du[1], Haiying Liu[2]

[1]Wuxi School of Medicine, Jiangnan University, Wuxi, Jiangsu, 214122, People's Republic of China; [2]Healthcare-Associated Infection Management Office, Jiangnan University Medical Center, Wuxi, Jiangsu, 214002, People's Republic of China; [3]Department of Oncology, Jiangnan University Medical Center, Wuxi, Jiangsu, 214002, People's Republic of China

Correspondence: Haiying Liu, Healthcare-associated Infection Management Office, Jiangnan University Medical Center, No. 68, Zhongshan Road, Liangxi District, Wuxi, Jiangsu, 214002, People's Republic of China, Email 437225715@qq.com



**Background:** Breast cancer diagnosis and subsequent modified radical mastectomy represent a profound psychological threat for young and middle-aged patients, potentially serving as a catalyst for post-traumatic growth. However, the subjective lived experience of post-traumatic growth in this specific population remains poorly understood, limiting the development of targeted psychosocial support.

**Purpose:** To explore the lived experience of post-traumatic growth in young and middle-aged breast cancer patients after modified radical mastectomy, providing a reference for individualized nursing interventions in clinical practice.

**Patients and Methods:** Using phenomenological research methods, semi-structured interviews were conducted with 13 young and middle-aged breast cancer patients after modified radical mastectomy. The results were organized and analyzed using Colaizzi's phenomenological data analysis method, and themes were extracted.

**Results:** The refined themes can be divided into three main themes and six subthemes: traumatic experiences (disease burden, psychological burden), psychological adaptation (multifaceted social support, proactive self-coping), and self-growth (positive transformation, planning for a bright future).

**Conclusion:** Our findings reveal that post-traumatic growth in young and middle-aged breast cancer patients after modified radical mastectomy is dynamic, influenced by multiple factors. This necessitates personalized, stage-specific nursing interventions and robust social support to facilitate psychological adjustment and promote growth.

**Keywords:** post-traumatic growth, breast neoplasms, mastectomy, modified radical, young adult, middle aged, phenomenology

## Introduction

The most prevalent malignant tumor in women is breast cancer, and younger patients are becoming more prevalent worldwide.[1] China has a comparatively high percentage of young and middle-aged breast cancer patients when compared to wealthy nations.[2] The main surgical procedure for breast cancer is a modified radical mastectomy. However, conditions like post-operative breast deformity and unfavorable chemotherapy reactions can easily cause patients to experience high psychological stress, which can result in negative emotional states such as anxiety, uncertainty, and low self-esteem.[3–5] Young and middle-aged patients, on the other hand, are vital members of their families and communities. Cancer patients may experience additional psychological stress due to possible demands such as decreased income, worry about raising children, and difficulties accepting social work.[6–8]

According to research, positive psychology can improve self-regulation and adaptation, lessen the effects of negative emotions, and lower patients' stress reactions.[9] The functional model of post-traumatic growth is a key framework within the broader post-traumatic growth theory. This model proposes that trauma can lead to positive psychological growth, manifested in five core domains: a greater appreciation of life, the discovery of new possibilities, enhanced personal

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strength, deeper relationships with others, and positive spiritual change.[10,11] Post-traumatic growth (PTG) is an essential component of positive psychology. It refers to a sequence of good psychological experiences[10] that patients encounter during times of crisis, which can alleviate negative emotions and encourage healthy cognitive behavior.[12,13] PTG is dynamic and subject to change.[14]

It is crucial to investigate the factors that contribute to beneficial improvements in the PTG level of young and middle-aged breast cancer patients after modified radical mastectomy.[15] Franco et al[16] indicated in their quantitative study that breast cancer patients experience PTG, and that a healthy lifestyle and psychosocial behavioral interventions serve as catalysts for such growth. Similarly, Choi et al demonstrated that breast cancer patients undergo PTG, with resilience being a key factor in enhancing PTG.[17] Although PTG is recognized as a significant psychological transformation following trauma, the specific nature of such growth among young and middle-aged breast cancer patients after modified radical mastectomy remains poorly understood. Particularly, how these patients concretely perceive and articulate the dimensions of the five growth domains has not been thoroughly explored. To address this critical knowledge gap, it is essential to adopt a phenomenological approach to explore the lived experiences and narrative accounts of PTG among young and middle-aged breast cancer patients after modified radical mastectomy. Grounded in the functional model of PTG,[11] this study aims to investigate how the five domains of growth are manifested in the life experiences of these patients. It also seeks to bridge this gap by examining the experiences of young and middle-aged breast cancer patients after modified radical mastectomy within the context of Chinese culture, exploring how China's collectivist culture shapes this patient group's PTG trajectories and unique expressions.

The phenomenological research approach centers on the low-inference interpretation of raw experiential data to achieve a direct and rich description of specific human experiences and perceptions.[18] Therefore, this study adopted a phenomenological methodology to explore the experiences of young and middle-aged breast cancer patients after modified radical mastectomy as they coped with their illness. With the additional aim of investigating their PTG, this research provides valuable insights to support healthcare professionals in developing tailored psychosocial rehabilitation interventions for this patient population.

# Materials and Methods

## Participants

From April to July 2025, purposeful sampling was used, with a maximum difference sampling strategy,[19] taking into account the diversity of the sample, to select young and middle-aged breast cancer patients after modified radical mastectomy at a tertiary hospital in Wuxi City for in-depth interviews. Rather than seeking statistical representativeness, we prioritized depth and diversity of perspectives. The sample size was determined by reaching a state of data saturation.[20] Recruitment stopped after 13 participants when no new themes emerged (confirmed by two independent coders). The inclusion criteria for participation were as follows: (1) have a pathological diagnosis of breast cancer; (2) have had a modified radical mastectomy for breast cancer; (3) be between the ages of 18 and 59; and (4) be aware of their diagnosis and willingly take part in the study. Exclusion criteria included: (1) patients with serious physical diseases or other malignant tumors; (2) patients who have had a major traumatic incident within the last six months; (3) patients with a history of mental problems or severe cognitive impairment; and (4) patients with TNM stage IV disease.

## Data Collection

Face-to-face semi-structured interviews were used for in-depth interviews in this study, which used a phenomenological research approach. Based on literature reviews and research objectives, researchers created interview outlines. They then reviewed these ideas with project team members and knowledgeable educators to create draft versions. Two patients were chosen for pre-interviews in order to verify the validity of the questions, and the formal interview outline was revised and eventually determined. Example questions included the following: (1) Could you talk about your treatment experience and psychological feelings after falling ill? (2) What challenges did you face following your illness? How did you handle and manage them? (3) What, in your opinion, has helped you to stick with your rehabilitation regimen during the course of treatment? (4) Have you observed any significant improvements in your perception of your life, relationships, future,

or self? Where can we see these changes? (5) What are your plans for the future? (The full interview guide is provided in the supplementary material.)

Researchers first built rapport through joint rehabilitation exercises with clinical specialists. After informed consent and confidentiality assurances, 30–60 minute interviews were conducted in soundproof demonstration rooms, recorded with consent, with nonverbal cues documented. Interviews used neutral, evidence-based techniques to avoid leading questions, adhering to methodological rigor.

## Data Analysis

Within 24 hours post-interview, two researchers independently verified and transcribed audio recordings verbatim. Transcripts were imported into NVivo 12 for systematic management. Data analysis followed Colaizzi's seven-step phenomenological method:[21] (1) Thoroughly reviewing and immersing in all interview transcripts; (2) Extract significant statements; (3) Summarize and synthesize core meanings from these statements; (4) Identify common characteristics or concepts to form themes, theme clusters, and categories; (5) Contextualize themes to the phenomena under study and describe them comprehensively; (6) Recognize similar concepts and refine the themes; (7) return the findings to participants for validation of authenticity. When there are conflicting viewpoints, the research team collaborates to discuss and evaluate them in order to identify the final theme. The study followed the COREQ reporting guidelines.[22]

To illustrate this analytical progression, Table 1 provides an excerpt from the coding process, showing the development from significant statements to formulated meanings and emergent themes.

## Quality Control

To uphold the highest standards of methodological rigor, this study was guided by the principles of credibility, transferability, dependability, and confirmability, as established by Lincoln and Guba.[23]

Credibility was ensured through multiple strategies. Leveraging the researcher's clinical background in oncology nursing helped build rapport and trust. To mitigate potential bias, interviews followed a semi-structured guide with open-ended questions. Regular peer debriefings critically challenged emerging interpretations, and member checking with selected participants confirmed the accuracy and resonance of the identified PTG experiences.

Transferability was enhanced through purposive sampling with maximum variation. We recruited participants differing in age (within the young and middle-aged spectrum), time since surgery, educational attainment, marital status, and average monthly household income. This approach ensured a diverse range of experiences related to body image, femininity, and psychosocial adaptation, allowing for the capture of rich, context-bound data. Thick, descriptive reporting of the participants' characteristics and the recovery context will enable readers to assess the applicability of our findings to other similar settings.

Dependability was achieved by maintaining a clear audit trail. This comprehensive record includes the initial research proposal, the evolving interview protocol, all raw anonymized interview transcripts, detailed field notes documenting non-verbal cues and researcher reflections immediately post-interview, and meeting notes from team discussions. This trail ensures the research process is logical, traceable, and potentially replicable by other researchers.

**Table 1** Example of Thematic Analysis

| Meaningful Statements | Coding | Subthemes | Themes |
|---|---|---|---|
| "Chemotherapy causes hair loss. After losing all my hair, wearing a wig in summer is unbearably hot, yet I can't go out without it. This makes me reluctant to visit crowded places". | "Hair loss from chemotherapy led to social withdrawal". | Disease burden | Traumatic experiences |
| "Both the surgery and chemotherapy were incredibly difficult. They left me unable to eat or sleep properly". | "Surgery and chemotherapy resulted in poor eating and sleeping". | | |
| "My sleep has been poor ever since I fell ill. For the past three years, I've had to rely on sleeping pills every night to get any rest". | "Sleep quality deteriorated following the illness". | | |

To further improve confirmability, researchers explicitly documented their pre-existing assumptions and expectations prior to data collection. For instance, the team deliberately maintained an open stance throughout data collection and analysis, equally valuing expressions of negative emotions and struggles, even though positive growth was hypothesized. A reflexive journal was maintained to record personal reactions, emotional responses, and decision-making rationales, helping to separate the researchers' perspectives from the participants' narratives. Notably, having not shared similar trauma, the researcher avoided assumptive language like "I understand how you feel", employing active listening instead. Analyst triangulation through independent coding and consensus discussions further reduced individual bias.

## Ethical Approval

This study has received ethical approval from the Ethics Committee of the Jiangnan University Medical Center (Number: 2024Y-302). The research was conducted in full compliance with the Declaration of Helsinki. Prior to data collection, all participants signed a paper-based written informed consent form. They were informed that their data would be used for research purposes, including the publication of strictly anonymized responses and direct quotes.

# Results

## General Information About the Interviewees

A total of thirteen young and middle-aged breast cancer patients after modified radical mastectomy were included in the final analysis. Participants were coded as N1 to N13. Participants ranged in age from 32 to 59 years (median: 52 years old), with postoperative durations spanning 1 month to 4 years. Detailed demographic and clinical characteristics are presented in Table 2.

**Table 2** The Characteristics of Patients (n = 13)

| ID | Age (Y) | Marital Status | Residence | Education Level | Employment Status | Per Capita Monthly Household Income (yuan) | Disease Duration (months) |
|---|---|---|---|---|---|---|---|
| N1 | 59 | Widowed | County town | Junior high school | Retired | 1000–3000 | 9 |
| N2 | 45 | Married | Urban | Bachelor's degree | Employed | >6000 | 1 |
| N3 | 46 | Single | Township | Associate degree | Employed | >6000 | 5 |
| N4 | 32 | Married | Urban | Junior high school | Employed | >6000 | 14 |
| N5 | 59 | Married | Urban | Associate degree | Retired | 1000–3000 | 20 |
| N6 | 43 | Married | Urban | Senior high school | Retired | >6000 | 9 |
| N7 | 51 | Married | Rural | Junior high school | Employed | 3000–6000 | 2 |
| N8 | 52 | Married | Township | Junior high school | Retired | 3000–6000 | 42 |
| N9 | 35 | Married | Urban | Bachelor's degree | Employed | >6000 | 1 |
| N10 | 54 | Divorced | County town | Senior high school | Retired | 3000–6000 | 36 |
| N11 | 53 | Married | Urban | Senior high school | Retired | 3000–6000 | 17 |
| N12 | 55 | Married | Urban | Illiterate | Retired | 1000–3000 | 28 |
| N13 | 59 | Widowed | Urban | Bachelor's degree | Employed | 3000–6000 | 48 |

## Thematic Framework of PTG in Young and Middle-Aged Breast Cancer Patients After Modified Radical Mastectomy

Through qualitative analysis of interview data, the PTG experiences of these patients were categorized into three main themes and six subthemes: traumatic experiences (disease burden, psychological burden), psychological adaptation (multifaceted social support, proactive self-coping), and self-growth (positive transformation, planning for a bright future). See Table 3.

## Theme 1: Traumatic Experiences

### Disease Burden

The majority of participants reported that treatment imposed significant burdens on their lives, including pain, disrupted sleep, and hassles brought on by chemotherapy-induced hair loss, all of which severely impacted their long-term quality of life.

During chemotherapy, I could eat and sleep normally, but radiotherapy was unbearable. The skin on my chest was extensively broken, and my hands and feet were numb. I lost my appetite and could not sleep, worrying if this meant my condition was deteriorating. (N1)

After surgery, I underwent endocrine therapy and chemotherapy—it was agonizing. I had no choice but to resign myself to it. I heard radiotherapy might be next, and online sources warned about severe side effects. I am terrified it will damage other organs and hope to avoid it (sigh). (N3)

Chemotherapy caused complete hair loss. Wearing a wig in summer is stifling, but going out without one is impossible. This made me reluctant to visit crowded public places. (N7)

### Psychological Burden

As young and middle-aged patients, they bore greater social and familial responsibilities than elderly patients, resulting in heightened psychological distress.

#### Fear of Recurrence and Metastasis

Most participants reported persistent anxiety about disease progression and adverse outcomes.

Alas, my biggest fear is the cancer itself. I am terrified of metastasis. One moment, I hear about survivors living decades without issues, the next, I learn of younger patients with widespread metastases. This constant oscillation between hope and despair makes me afraid that all this suffering might end in vain. (N3)

My primary concern is the disease worsening—whether it might recur or metastasize. (N6)

I still struggle to accept my cancer diagnosis. I rarely even caught a cold before. Now, the fear of recurrence and metastasis haunts me daily (tearing up). (N7)

#### Diminished Self-Identity

Most participants perceived breasts as a symbol of femininity, and undergoing a modified radical mastectomy led to the loss of this symbol. This notion may cause them to fall into the predicament of body image disturbance.

**Table 3** Themes and Subthemes

| Themes | Subthemes |
|---|---|
| Traumatic experiences | Disease burden |
| | Psychological burden |
| Psychological adaptation | Multifaceted social support |
| | Proactive self-coping |
| Self-growth | Positive transformation |
| | Planning for a bright future |


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I used to be so pretty. Now I am devastated by my appearance. Losing my breast makes me feel incomplete as a woman (tearing up). (N7)

I sometimes feel embarrassed when exposing my chest for hospital examinations. During ultrasounds, lifting my clothes reveals the mastectomy scar. After losing a breast, I can no longer wear beautiful dresses. This has created persistent psychological dissonance. (N11)

In summer, wearing the prosthesis feels like carrying a heater that causes profuse sweating, yet going without it affects appearance. The poor ventilation limits clothing choices; low-cut garments become impossible to wear. (N12)

### Concerns Regarding Offspring's Future Development and Well-Being

As pivotal family figures, young and middle-aged individuals bear primary parental responsibilities. A cancer diagnosis triggers profound concerns regarding their offspring's future development.

My predominant anxiety centers on my children—one in university, the other in third grade. Although the elder is collegiate, he remains developmentally dependent until securing employment. The younger remains unaware of my diagnosis to preserve his psychological vulnerability. (N2)

While current childcare remains manageable, persistent distress surfaces regarding longitudinal parenting capacities. The prospect of potentially missing critical milestones—his maturation, marriage—invokes profound sorrow (wiping tears). (N4)

## Theme 2: Psychological Adaptation

### Multifaceted Social Support

Young and middle-aged breast cancer patients after modified radical mastectomy perceive multifaceted social support from family, friends, peers, and healthcare professionals. This support aids in their recovery from trauma, enhances self-efficacy in disease management, and facilitates personal growth.

### Encouragement from Family and Friends

A supportive family environment can reduce the time patients spend dwelling on their trauma and provide them with strong psychological support. Notably, one patient reported that her grandmother, over ninety years old, offered daily encouragement, which significantly boosted her confidence in recovery.

My children and family have been very supportive. They have relieved me from housework, and my husband accompanies me for daily walks in the park. Friends who know about my illness also message to check on me. One friend even designed a cashmere coat specifically to conceal the chest area; that garment holds profound significance for me. (N5)

My entire family maintains a remarkably positive mindset. My grandmother, in her nineties, even reassured me with encouragement. Consequently, I felt less anxious and focused on complying with the medical treatment regimen. (N9)

After the surgery, I was restricted from lifting heavy objects, which my husband took care of. Relatives and friends consistently showed their concern. During periods of emotional distress, my family and friends were always willing to listen, offering comfort and encouragement. Knowing me well, they provided tailored advice to help me gradually adjust. They truly are my pillar of strength. (N10)

### The Power of Peer Support

Peers, sharing similar experiences, possess a profound understanding of the patients' pain and challenges. This shared understanding fosters mutual support and encouragement, bolstering the courage to confront the illness. Furthermore, witnessing peers who have successfully navigated their difficulties instills hope and empowers patients to envision new possibilities.

During my surgery, I connected with several fellow patients in the ward. We later coordinated our hospital visits for chemotherapy and follow-up appointments. Being with them felt incredibly reassuring, and we offered each other mutual encouragement. (N3)

I joined a cancer rehabilitation association. We regularly communicate within this community, comprised entirely of individuals like myself. There, I did not feel different or isolated. (N11)

Fortunately, I had a few fellow patients—those who underwent surgery around the same time. We confided in each other. It is important to have one or two such confidants. (N12)

### Guidance from Healthcare Professionals

Numerous participants emphasized the indispensable role of healthcare professionals' care and guidance during hospitalization. This support effectively addressed their knowledge gaps regarding the disease and significantly alleviated anxiety and apprehension.

The nurses on our ward demonstrated exceptional diligence. They instructed me on performing the rehabilitation exercises and provided an illustrated exercise booklet. During this visit, one nurse even assessed my exercise progress (laughter). (N6)

The doctors and nurses in the department were consistently supportive. I have now joined the dedicated communication platform (WeChat group) for our breast surgery department. It's incredibly helpful as I can ask any questions there, which prevents me from encountering unreliable information online and subsequently experiencing unfounded anxiety. (N12)

## Proactive Self-Coping

When confronted with adverse events that may hinder PTG, young and middle-aged breast cancer patients after modified radical mastectomy proactively employ coping strategies. These strategies are manifested primarily as acceptance and tolerance, downward comparison, and self-regulation.

### Acceptance and Cognitive Adjustment

Some patients recognized the irreversibility of their situation. Rather than dwelling in complaint, they consciously reframed their perspective, demonstrating acceptance and adaptive cognitive restructuring.

I refuse to define myself solely as a patient. If I dwelled on that thought constantly, how could life go on? I believe in carrying on as usual. (N8)

Since the illness has occurred, what choice remains now? Acceptance is the path forward. I commit to coming for treatment when required and focusing on what needs to be done. (N11)

During my hospitalization, a bed neighbor—an elderly woman—remarked on my developing this illness in my fifties. My response was: 'Given the circumstances, should I simply cry every day?' I resolved to be strong. Moreover, I view this as a manageable condition. (N13)

### Downward Comparison

Patients engaged in deliberate social comparisons to reframe their perception of illness severity and prognosis. This adaptive cognitive process enhanced their confidence in treatment adherence and served as a catalyst for PTG.

I maintain perspective by comparing my condition to more severe cases, such as liver tumors. Given the relatively higher survival rates for breast cancer, this comparison alleviates my fears. (N12)

There are people younger than me who have this disease, and my condition is not particularly bad right now. (N13)

### Self-Regulation

Young and middle-aged breast cancer patients after modified radical mastectomy demonstrated strong self-regulation capacities. When encountering stress, they actively employed cognitive and behavioral strategies to enhance psychological resilience and facilitate PTG.

I watch videos—whenever I feel down, I immediately turn to comedy clips. Lifting my mood helps me regain balance. (N1)

After my diagnosis, I chose to reset mentally. Now, I see myself as healthy—this chapter is closed. Dwelling on negativity serves no purpose. I adopt a pragmatic mindset: "Every extra day lived is a bonus". Life is mine to shape, so I actively adjust my outlook. (N5)

I study breast cancer-related knowledge every day. Knowledge reduces my fear, stabilizes my mood, and supports recovery. (N11)

## Theme 3: Self-Growth

### Positive Transformation

Post-illness, patients demonstrated enhanced health consciousness and prosocial tendencies. This dual transformation manifested through: Lifestyle restructuring (prioritizing preventive health behaviors) and Altruistic motivation (deriving self-worth through helping others).

#### New Philosophy of Life

Many respondents said that they would adopt a healthy lifestyle in the future and pay attention to their physical and mental health.

I now exercise daily with 30-minute aerobics at home—persistent practice since learning its therapeutic benefits. Recently, I have explored online flower-arranging tutorials, though my initial attempts remain, artistically unrefined (laughs). (N4)

My dietary habits underwent a complete revision. Gone are the days of erratic meals and indulgence. Now, I proactively research nutrition guidelines, strictly avoiding greasy and hyper-sweet foods that might compromise recovery. (N7)

#### Altruistic Consciousness

Most patients developed heightened empathy and pronounced altruistic awareness following psychological trauma. By assisting those in distress, they attained self-fulfillment and a sense of accomplishment, facilitating mutual healing.

I learned about the free prosthetic breast program via public welfare channels, but chose not to apply. My reasoning was simple: with so many battling this illness, claiming one would mean depriving someone truly in need. I could not bear that moral burden—it must go to those with greater financial hardship. (N5)

During each hospital visit, I make a point to counsel fellow ward patients. I encourage them to focus on positive aspects and engage with the outside world—small steps toward mental liberation. (N8)

When returning for check-ups, I actively support post-surgical patients. As a survivor, I share hard-won insights to ease their journey. This is my way of paying forward the help I received. (N11)

### Planning for a Bright Future

Reconstructing a meaningful future serves as a tangible manifestation of PTG, reflecting patients' successful adaptation to their illness and subsequent personal growth. This process is characterized by restoring life rhythms and initiating new life chapters.

#### Restoring Life Rhythms

I have returned to work and plan to continue until retirement. While the job can be demanding, my supervisor has been accommodating—I have been assured no further night shifts. Maintaining my professional routine grounds me; I strive to work steadily, just as before. (N3)

My days now revolve around caring for my child. We take leisurely walks to the neighborhood park—these simple rhythms anchor me. My focus is unwavering: nurturing my family becomes my restorative purpose. (N4)

My husband and I will keep running our business, though we will streamline operations. At my age, with children and elders relying on us, I cannot afford to pause. Work itself sustains me—idleness has no place in my recovery. (N7)

#### Embarking on New Life Chapters

I now actively seek new experiences—exploring unfamiliar places, acquiring skills, and enriching myself. Those long-delayed dreams? I am finally bringing them to life because every day feels profoundly precious after illness. (N2)

I have enrolled in a vocal music class at the community senior college, attending every Friday morning. With my piano at home, I plan to master it next—turning postponed passions into present pursuits. (N12)

# Discussion

## PTG Demonstrates Dynamic Development in Young and Middle-Aged Breast Cancer Patients After Modified Radical Mastectomy

According to Tedeschi et al's PTG theory, when individuals are exposed to traumatic events, their pre-existing worldviews and cognitive schemas are disrupted.[11] This disruption not only triggers traumatic responses but also prompts continuous reflection on the event and efforts to seek solutions and adapt to the aftermath. Throughout this process, factors such as individual characteristics, social support, and coping strategies play influential roles,[24] ultimately leading to the emergence of PTG. Young and middle-aged breast cancer patients after modified radical mastectomy experienced PTG in the process of coping with traumatic events, and PTG displayed dynamic changes. Patients progress through three stages after illness: traumatic experiences, psychological adaptation, and self-growth. These stages may intersect and overlap during development, aligning with existing research findings that growth and distress often coexist and interact as an ongoing dynamic process.[25–27] (1) Traumatic experiences: Following their cancer diagnosis, young and middle-aged breast cancer patients after modified radical mastectomy suffer from a range of detrimental physical and psychological repercussions. The traumatic experiences of patients are a key prerequisite for PTG. (2) Psychological adaptation: Patients gradually strengthen their personal resilience through receiving multi-source external support and actively coping on their own, mastering coping strategies, and discovering new meaning, which marks the beginning of PTG. (3) Self-growth: Actual growth is made by patients through self-adjustment and outside assistance. New life ideas, altruistic awareness, and constructive preparation for a better future are all examples of this growth.

## Traumatic Experiences are a Key Prerequisite for PTG in Young and Middle-Aged Breast Cancer Patients After Modified Radical Mastectomy

Young and middle-aged breast cancer patients after modified radical mastectomy experienced enormous physical and psychological burdens in the early phases of trauma, according to this study.[28] Due to breast loss following surgery, a lack of awareness about the disease, and treatment side effects, young and middle-aged individuals with breast cancer are prone to experience negative emotions, including dread and a decline in self-identity.[4,29,30] According to research, breasts are the second symbol of female identity. Patients who lose their breasts may have a chronic sense of self-deprecation, which can have a significant negative impact on their quality of life as well as their mental and physical health.[31] Furthermore, young and middle-aged breast cancer patients are also responsible for raising children, in contrast to older breast cancer patients. They are unable to provide their children with good care because of their disease, and they fear that their future incapacity to spend time with their children would negatively impact their physical and emotional well-being.[32] However, with proactive self-adjustment, young and middle-aged breast cancer patients after modified radical mastectomy may overcome inertial thought patterns, identify traumatic experiences from multidimensional perspectives, rebuild cognitive frameworks, and ultimately derive positive psychological changes from trauma.[33] Nevertheless, it is crucial to note that not all patients successfully navigated this transition. Contradictory data from our study reveal that a subset of participants reported deriving no positive meaning from their trauma, instead maintaining predominantly negative cognitions. As one participant expressed, "I'm still so young, yet I've already got this disease—I don't even expect to get better". This divergence highlights the complex and non-universal nature of post-traumatic psychological adaptation, suggesting that individual differences in cognitive processing may significantly influence the meaning-making process. As a result, medical personnel have to closely monitor alterations in patients' mental states. Nursing interventions such as cognitive psychological intervention and illness health education can be given to patients at this stage in order to alleviate their suffering, correct their unfavorable opinions, and enhance their quality of life.[34,35]

## The Emergence of Psychological Adaptation Marks the Initial Phase of PTG

The findings demonstrate that progressive acceptance of external assistance concomitant with persistent internal self-realignment characterizes the psychological adjustment phase, culminating in post-trauma life adaptation. Strong social support lessens the misery caused by illness. Patients feel both deep acceptance and the creation of new meaning via these exchanges when they see ongoing understanding, helpful support, and emotional solidarity from friends, family, other patients, and healthcare professionals.[36] It vividly reflects the PTG theory's dimensions of Relating to Others and New Possibilities. Consequently, healthcare providers should: (1) Conduct regular health education seminars, (2) Encourage consistent patient-family communication, (3) Establish peer-support networks via social media platforms (eg, WeChat), enabling recovered patients to share firsthand recovery narratives within these platforms demonstrates significantly greater persuasive impact and emotional resonance. Positive coping strategies alleviate psychological burdens and enhance self-regulatory capacity in patients.[37–39] Studies indicate that self-disclosure interventions for young and middle-aged breast cancer patients after modified radical mastectomy enhance psychological adaptation, optimize coping strategies, and facilitate psychological growth.[40] Consequently, patients demonstrating robust self-regulatory capacity require reinforcement interventions, whereas those with compromised adaptation warrant medical staff mindfulness therapy and positive coping skills training. This can help patients understand their condition correctly and maintain a positive and optimistic attitude.[41,42]

## Self-Growth Represents the Long-Term Significance of PTG

This study demonstrates that young and middle-aged breast cancer patients after modified radical mastectomy transform traumatic experiences into tangible growth, manifested through positive behavioral shifts and proactive future planning. Multiple participants articulated commitments to abandoning detrimental lifestyle patterns, maintaining structured wellness routines, embracing eco-conscious principles, and deriving self-actualization through altruistic engagements. The adoption of transformed lifestyles and pursuit of altruistic engagement vividly embody the PTG theory's dimensions of new possibilities and personal strength. The interview results showed that young and middle-aged breast cancer patients after modified radical mastectomy experienced a certain degree of PTG, which is consistent with the results of previous quantitative studies.[43] It is worth noting that the findings of this study addressing religious beliefs differ from those of Geng Yufang et al.[44] This study detected no meaningful association between religious faith and PTG. This may be because few young and middle-aged patients hold them, so religious beliefs are rarely utilized to deal with trauma. Following their recovery from their sickness, the majority of responders started making plans for a bright future. Instead of giving up on themselves, they pursued new opportunities and looked forward to a bright future. Healthcare professionals should proactively identify patients with PTG potential, implement cognitive training to fortify positive cognition, enhance self-agency, and facilitate dual positive transformations in cognition and behavior, and promote their maximum growth.

# Limitations

There were some limitations in this study. Firstly, interviews were conducted in a single hospital in China, and the views of the participants were influenced by the medical environment. Secondly, this study is a phenomenological study, which may not accurately capture the evolving experiences of PTG of young and middle-aged breast cancer patients after modified radical mastectomy over time. Additionally, although this study enrolled patients across diverse postoperative recovery phases, recall bias may have occurred during the interviews. It is recommended that future multi-center longitudinal designs track PTG trajectories across treatment stages, thereby providing personalized intervention timing for this population. Finally, given that progeny-related future concerns emerged as a salient theme among participants, future longitudinal investigations should delineate the dynamic interplay between PTG and offspring-focused distress trajectories.

# Conclusion

In summary, young and middle-aged breast cancer patients after modified radical mastectomy represent a medically vulnerable cohort with distinctive psychological experiences. This population collectively demonstrates PTG through traumatic experiences, psychological adaptation, and self-growth. This research extends the PTG theory by

contextualizing it within China's collectivist cultural environment. The manifestation of PTG domains—particularly in new possibilities, personal strength and relating to others—reflects culturally embedded patterns of coping and meaning-making. These findings underscore the necessity for healthcare providers to recognize the dynamic interplay between cultural context and post-traumatic psychological development. Importantly, while this study emphasizes growth, it does not overlook the disease burden and psychological burden faced by many young and middle-aged breast cancer patients after modified radical mastectomy. Throughout the treatment journey, growth and suffering often coexist. Therefore, these findings offer practical significance for clinical practice. The development of culturally responsive and stage specific psychosocial interventions, tailored to align with patients' psychological progression, can effectively mobilize patients' internal resources, foster holistic mind-body adaptation, and facilitate successful reintegration into family and social environments.

## Data Sharing Statement

The original contributions presented in the study are included in the article. Further inquiries can be directed to the corresponding authors.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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## Disclosure

The authors report no conflicts of interest in this work.

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