

# Post-traumatic growth in thyroid cancer patients after surgery:A qualitative study

Key words:thyroid cancer;post-traumatic growth;qualitative research;head and neck cancer;positive psychology

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August 22, 2022

## Abstract

**Objective:**To gain insight into the real experiences of post-traumatic growth of thyroid cancer patients and to provide reference for optimizing postoperative care measures for thyroid cancer patients.**Design:** a qualitative study.**Methods:**Using a phenomenological study method in qualitative research, 15 patients within six months after radical thyroid cancer surgery in our hospital from March to April 2022 were interviewed in a semi-structured manner by purposive sampling, and the data were analyzed using the Colaizzi 7-step method.**Results:** Two first-level themes were summarized: (1) post-traumatic growth facilitators for thyroid cancer patients (cognitive processing, positive coping strategies, multiple sources of support); and (2) post-traumatic growth experiences for thyroid cancer patients (personal changes, improved relationships).**Conclusion:** Post-traumatic growth can occur in thyroid cancer patients after surgery, and healthcare professionals should guide patients' positive psychology and tap into their inner positive potential in order to promote healthy recovery and improve the quality of life of thyroid cancer patients.

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**Key points :**(1)As a physical and psychological disease, thyroid cancer cannot develop without the influence of psychosocial factors.Patients' psychological status affects their disease prognosis and recurrence.Therefore, the psychological needs of thyroid cancer patients deserve external attention.

1. Current research on surgical treatment of thyroid cancer tends to focus on cancer eradication, potential complications, and negative emotions, while positive growth seen in patients after surgery has been rarely reported.
2. With the dual trauma of disease and COVID-19, thyroid cancer patients of all genders and ages exhibited varying degrees of post-traumatic growth.
3. Previously, health education was focused on patients after hospitalization, but it is recommended that some level of knowledge be provided when patients are diagnosed.
4. It is recommended that health care professionals should pay timely attention to the psychological condition of postoperative thyroid cancer patients, and can guide patients to make positive psychological adjustment and cope by identifying PTG-promoting factors.

**Acknowledgments** :Special thanks to the government for their financial support.Thanks to each author for their contributions.Thank you to the hospitalized patients.

## Introduction

As the most prevalent malignant tumor in the endocrine system(Chen W et al.2016), the incidence of thyroid cancer has been on the rise globally for the past 30 years, with an annual increase of 4%(Chen A Y et al.2009).According to 2020 statistics, there are 586,000 cases of thyroid cancer worldwide, with the 9th highest incidence rate(Sung H et al.2021).Although the ATA guidelines support the option of active surveillance for patients with low-risk thyroid cancer, a Japanese study showed that 10% of patients opted for surgery for various reasons(Sugitani I et al.2010).Some studies have reported that surgery is still the standard of care for most thyroid cancer patients(Laha D et al.2020).Patients commonly experience a range of physical and psychological symptoms after surgery, and current studies have focused on cancer eradication, potential complications(Filetti S et al.2019), and negative emotions in the surgical treatment of thyroid cancer(Randle R W et al.2017), while positive growth in postoperative patients has rarely been reported.

Traumatic events are experiences that may threaten an individual's life, physical and mental health, and cause unusual suffering. While some people can only feel pain in the face of trauma, others can experience positive changes in their lives after a traumatic event(Sumall E C et al.2009), which is defined as Post-traumatic Growth (PTG)(Ochoa C et al.2017).A meta-analysis has shown that cancer patients who experience PTG are more likely to adapt to their disease, will experience less distress and post-traumatic stress symptoms, as well as exhibit healthier behaviors and higher treatment adherence(Sawyer A et al.2010). Thus, the successful occurrence of PTG in cancer patients is critical to their recovery and quality of life.

As a physical and mental disease, thyroid cancer cannot develop without the influence of psychosocial factors, and the positive psychological needs of thyroid cancer patients deserve external attention.Therefore, understanding the positive psychology of postoperative thyroid cancer patients and actively identifying and tapping into their positive regulatory potential are of great clinical significance in promoting both postoperative recovery and quality of life for thyroid cancer patients.

## 1.Methods

### 1.1Recruitment

Using a purposive sampling method, patients who underwent surgery at our hospital or came to the hospital for review 6 months after surgery in March to April 2022 were selected for interview.Inclusion criteria:(1) Patients who meet the diagnostic criteria for thyroid cancer and are within six months of radical thyroid cancer surgery;(2) Age > 18 years;(3) Clear awareness and articulate language;(4) Voluntary participation in this study.Exclusion criteria:(1) Failure of the patient to provide valid information;(2) Also involved in other studies.The sample size is considered saturated when no new themes emerge.

### 1.2Research Methods

#### 1.2.1Develop interview outline

Before the formal interview, a pre-interview outline was prepared by reviewing the literature and consulting with our thyroid surgery specialists, taking into account the purpose of the interview. After pre-interviewing the 2 patients, the outline was revised based on the results of the pre-interview, and professionals trained in qualitative interviewing were asked to validate the outline and finalize the interview outline.

### 1.2.2 Data Collection Methods

Face-to-face, semi-structured interviews were conducted with patients according to a defined interview outline. The purpose, content, and method of this interview were explained to the patients before the interview to protect their privacy. Select a quiet, private, empty demonstration room as the interview site. The interviews were recorded, and the patients' body movements, emotions, and expressions were recorded. The duration of each interview was 15-30 minutes.

### 1.2.3 Data Analysis Methods

The audio files were listened to and manually transcribed into text within 24 h after the interview, and the data were analyzed using the Colaizzi 7-step method by another researcher who checked the audio recordings against the textual data.

### 1.3 Quality Control

(1) The researchers were trained systematically in qualitative research and then conducted interviews and established a good trusting relationship with the patients before the interviews. (2) Two researchers independently transformed, analyzed, and checked the data, and held subject group discussions when differences in opinion arose, and finally formed themes of the real experiences of thyroid cancer patients after surgery. (3) The integrated themes and descriptions were explained to the patients to ensure the rigor of the study. (4) This study followed the COREQ guidelines.

### 1.4 Ethics

This study was approved by the hospital ethics committee. (Blinded for review)

## Result 2.1 General information of interview subjects

Fifteen patients were finally established for interview in this study. The general information of the study population is shown in Table 1.

Table 1 General information of study subjects

Patient No.	Gender	Age	Marital Status	Education level	Place of origin	Career	Whether there is medical insurance	Interview timing
1	Female	29	Married	Bachelor	City	Staff	Yes	One month after surgery
2	Female	27	Divorce	Junior college	Rural	Self-employed	No	Day 2 after surgery
3	Female	43	Married	Junior college	Rural	Unemployed	Yes	Day 3 after surgery
4	Female	39	Married	Bachelor	City	teacher	Yes	Day 2 after surgery

5	Male	45	Married	Bachelor	City	Worker	Yes	Day 4 after surgery
6	Female	49	Married	Bachelor	City	Salesman	Yes	Six months after surgery
7	Female	35	Married	technical sec-ondary school	City	Staff	Yes	40 days after surgery
8	Male	52	Married	Bachelor	City	Driver	Yes	30 days after surgery
9	Female	52	Married	Junior High School	City	Unemployed	No	Six months after surgery
10	Male	65	Married	technical sec-ondary school	Rural	Retirement	Yes	Day 4 after surgery
11	Female	30	Married	Bachelor	City	Nurse	Yes	30 days after surgery
12	Female	31	Married	Junior college	City	Self-employed	Yes	Six months after surgery
13	Female	32	Married	Junior High School	City	Farmer	Yes	Day 4 after surgery
14	Male	47	Married	Junior college	Rural	Retirement	Yes	Day 4 after surgery
15	Female	29	Married	Bachelor	City	Civil Service	Yes	Day 3 after surgery

## 2.2Interview Results

After analyzing the interview data, three themes were finally derived: (1) patients' psychological distress after experiencing thyroid cancer; (2) patients' post-traumatic growth-promoting factors; and (3) patients' post-traumatic growth experience. Among them, psychological distress after experiencing thyroid cancer included two sub-themes of multiple stressors and stress reactions; post-traumatic growth-promoting factors of patients included three sub-themes of cognitive processing, positive coping and multi-source support; post-traumatic growth experience of patients included two sub-themes of personal change and interpersonal relationship improvement. The thematic framework is shown in Figure 1.

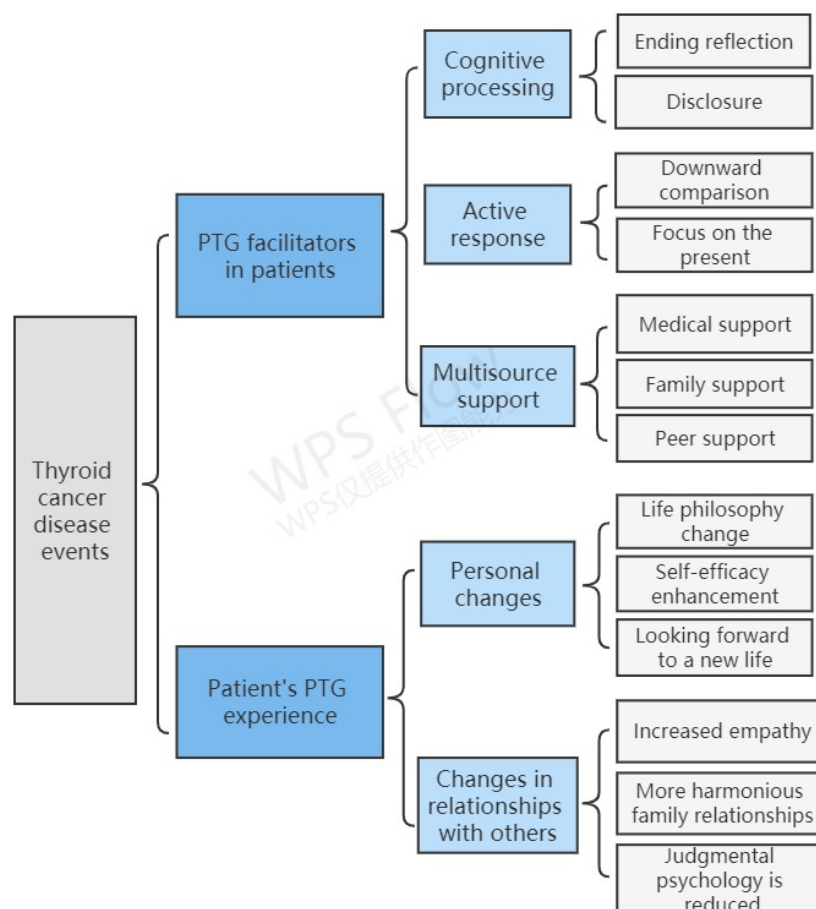


Figure 1 Thematic framework of postoperative PTG in thyroid cancer patients

### 2.3PTG-promoting factors in thyroid cancer patients

Some studies have shown that cognitive processing, positive coping strategies, and high-quality support are all facilitators of PTG(Barskova T et al.2009).

#### 2.3.1Cognitive processing

Ending Reflection:After diagnosis, patients often reflect on the causes of their illness and gain strength in the face of adversity.P7:"I think I have this disease may be related to my love of sulking and impatient nature."  
(2)Disclosure:After the illness, the patient will communicate and confide in others in order to achieve a positive outcome in the trauma.P8:"I was uncomfortable in my heart and told my wife, and after that I was much more comfortable."

#### 2.3.2Positive coping strategies

Downward comparison:Patients engage in psychological self-protection through comparison, resulting in greater gratitude for the present moment.P2:"In fact, I think I am very lucky that this thyroid cancer is so much better than other cancers."

Focus on the present:Patients who have experienced the trauma of thyroid cancer are more inclined to focus on the present moment and promote post-traumatic growth in a range of ways.P13:"The epidemic has slowed

down the city, so I can finally slow down a little bit too. In the future, emotions must be controlled and relaxed when things go wrong.” 2.3.3High quality support

Support from medical and nursing staff:Health care professionals contribute to the occurrence of post-traumatic growth by providing knowledge support, therapeutic care support, and psychological support to patients.P1:”The doctors and nurses at your hospital were very nice and gave me a very friendly feeling, which made me feel much more comfortable.”Currently, the Internet has become the safest and most convenient channel for patients to consult and seek medical treatment, breaking the spatial limitation between doctors and patients and accelerating the post-traumatic growth of patients.P7:”The epidemic made everything inconvenient, but fortunately doctor built a group chat, I forgot to take Levothyroxine last time,so I asked him in the group chat what to do, and he soon replied to me.” (2)Support from family members:Family support, a major support system, has a sustained positive contribution to post-traumatic growth in thyroid cancer patients.P13:”Since being hospitalized, my daughter often cares about me through WeChat, and my lover has learned to cook and wash clothes by herself when I am not at home, which is quite gratifying.”

(3)Peer Support:During a patient’s visit, the support and encouragement of the patient’s friends are an important factor in contributing to the patient’s post-traumatic growth.P1:”Before the surgery, I was very nervous and couldn’t sleep, so the aunt in the bed next to me kept comforting me and encouraging me.”

## 2.4 Post-traumatic growth experience for thyroid cancer patients

### 2.4.1Personal changes

(1)Life Philosophy Change:Affected by the trauma of the disease, the patient re-examines the meaning of life.P13:I used to save money for my family and come here to work hard, but now I have some money in my hand, but my health is broken. My daughter says it’s best for the family to be healthy and safe.”

(2)Self-efficacy Enhancement:Self-efficacy is an important part of the patient’s growth from trauma and belongs to the category of positive psychological activity(Lotfi-Kashani F et al.2014).Patients see the traumatic event of thyroid cancer as a life path exercise and feel more confident to tackle future challenges.P1:”I used to think I was fragile, but I’ve really come through this.”

(3)Envisioning a New Life:Although the patients experienced the trauma of thyroid cancer, they still had hope for their future lives, indicating that the traumatic event brought real benefits and growth to the patients.P1:”Now that medicine is so advanced, the epidemic will pass, and by the time I’m feeling better, I’ll be able to have a baby. (smile)”

### 2.4.2Changes in relationships with others

(1)More harmonious family relationships:After experiencing the traumatic event of thyroid cancer, patients feel warmth from family members as well as others, which is an important experience for post-traumatic growth.P15:”I used to be so busy at work that I rarely had time to chat with my parents for a long time, but now that I’m in the hospital, I can video chat with them every day, which is a blessing in disguise.”P13:”Since being hospitalized, my daughter often cares about me through WeChat. If I wasn’t sick, there are some things she wouldn’t say to me.”

(2)Increased empathy:Because patients have experienced the pain of a traumatic event, they are more likely to develop empathy for others on top of that.P7:”I can’t understand the pain of surgery when I’m not sick, but now I can feel it. . . I will cheer up my friends who are going to have surgery around me.”

(3)Judgmental psychology is reduced:Respondents generally reported that the experience of thyroid cancer as a disease had made them more tolerant of others and less judgmental of their behavior.P7: ”After I got sick, I was a lot less judgmental of others.We are all carrying a lot of weight with the epidemic, and we all have our own difficulties, so we need more tolerance and understanding.”

## 3.Discussion

PTG theory suggests that traumatic events such as cancer cause individuals to change their original world-view and cognitive-behavioral patterns, to cope with traumatic events while experiencing pain, and to actively seek solutions to problems(Tedeschi R G & Calhoun L G 1996). The post-traumatic growth experiences of thyroid cancer patients in this study are largely consistent with PTG theory.

### 3.1 Seek effective responses to promote positive transformation of negative emotions

It has been suggested that negative emotions, such as anxiety, seriously affect the prognosis of patients(Sharpe L et al.2018). With the outbreak of the new crown epidemic, a series of adverse reactions occur in individuals and society, and the physical and mental health and well-being of individuals are seriously threatened(Minihan E et al.2020).The results of this interview showed that thyroid cancer patients usually experience negative emotions such as shock and sadness. And, there was a positive trend of shifting the negative emotions of thyroid cancer patients during the treatment.In Fujimoto's study of PTG in cancer patients, it was concluded that a future-oriented positive coping style plays a key role in the patient's reintegration into the social environment and reestablishment of social functioning as an extremely valuable spiritual resource(Fujimoto T & Okamura H 2021).Several patients in this study showed a vision of a new life. The hope that patients perceive in the pain of trauma contributes to post-traumatic growth, and the expectation of new possibilities is an important part of motivating patients to cope positively.Health care professionals should conduct a comprehensive assessment of the patient's coping style and apply individualized coping strategies to shift the patient's perspective on grief. Patients may be guided to engage in patient-to-patient communication or to vent negative emotions through disclosure, etc.

### 3.2 Strengthened support systems to help patients through difficult times together.

As an inert cancer, thyroid cancer has a high survival rate, a low recurrence and metastasis rate. However, some patients in this interview still expressed traumatic stress reactions such as fear and even collapsed after diagnosis. Our research found that patients with low knowledge of thyroid cancer exhibited more severe physical and psychological stress, and that psychological stress decreased with increasing knowledge, which is consistent with Morton's findings(Morton R P 2003). Currently, health education provided by health care professionals is mostly focused during hospitalization and follow-up. Therefore, it is necessary to provide early knowledge support at the time of patient screening and diagnosis.

It has been shown that social support system has a positive contribution to PTG in cancer patients(Ruf M et al.2009).It has been argued that patients with a harmonious and stable family structure have a stronger desire to overcome the disease(Barnett M E et al 2014).This interview found that in addition to support from within the family, social support from friends, co-workers, and health care professionals inspired patients.Therefore, medical and nursing staff can start with the different family characteristics of the patient and focus on strengthening the internal support system of the patient's family, taking into account the social support of the patient.

### 3.3Guiding patients to perceive PTG and promoting good psychological adjustment

The occurrence of PTG in thyroid cancer patients depends on factors such as personal traits, cognitive processing, and mental strength. Good personality traits and personal past experiences are favorable conditions for traumatized individuals to achieve growth. Therefore, under the dual trauma of the epidemic and the disease, healthcare professionals should provide positive guidance to patients, tap into their inner resources, and create conditions for their growth.

Cognitive processing is a key part of the patient's acceptance of trauma toward growth, the patient's ability to make efforts to regulate pain is extremely important to the process of PTG production, and whether or not cognitive processing is perfect influences the occurrence of PTG(Baník G & Gajdošová B 2014), while disclosure plays a key role in cognitive processing.Therefore, health care workers should patiently guide patients in cognitive processing, listen to their stories, and respond positively with empathy, which will help strengthen patients' perception of personal value, stimulate their inner potential, and make them brave to fight against trauma.

In terms of spiritual perception, this study did not conclude that growth in religious beliefs in thyroid cancer patients. The reason for this analysis may be related to the differences in cultural beliefs between China and the West. The increase in empathy is seen as an increase in the power of religious beliefs in the West, while in China it is attributed to Confucianism. Therefore, when guiding patients to perceive PTG, health care professionals should fully consider the differences between Chinese and Western cultures, respect the cultural backgrounds of different countries.

#### 4 Conclusion

In this study, we conducted semi-structured interviews with 15 post-operative thyroid cancer patients and found that the patients' post-traumatic growth experiences could be categorized into two themes: positive transformation at the personal level and more harmonious relationships with others, and the positive impact on patients' physical and psychological recovery should not be overlooked. In addition, the patient's mention of caregiver growth was noted during the interviews in this study, and future research could further explore the post-traumatic growth experiences of caregivers of thyroid cancer patients.

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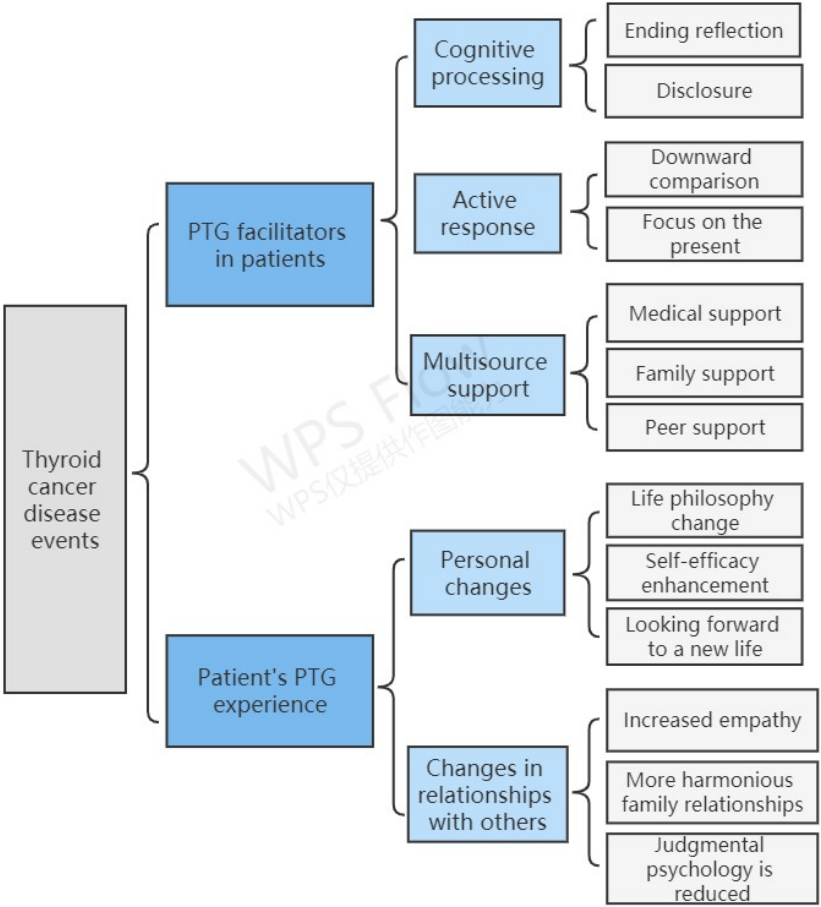
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Table. General information of study subjects.docx available at <https://authorea.com/users/502922/articles/582800-post-traumatic-growth-in-thyroid-cancer-patients-after-surgery-a-qualitative-study-key-words-thyroid-cancer-post-traumatic-growth-qualitative-research-head-and-neck-cancer-positive-psychology>