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Study on the Health Management Journey Map of Patients Undergoing Day Surgery for Thyroid Tumor: A qualitative study

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Abstract

Aims: To identify key health management needs of patients undergoing thyroid tumor day surgery at various stages of diagnosis and treatment based on the patient journey map, and to explore entry points for optimizing comprehensive care services throughout the disease course.

Design: Qualitative study.

Methods: From May 2025 to May 2026, 14 patients undergoing thyroid tumor day surgery were selected as study subjects using purposive sampling at a tertiary hospital in Nanchang. Data were collected through semi-structured interviews and descriptive qualitative research, followed by content analysis.

Results: Spanning the full continuum of the diagnostic and treatment trajectory, the health management experiences of ambulatory thyroid tumor patients were systematically synthesized into 19 distinct sub-themes across four interconnected domains: tasks, emotional trajectories, pain points (unmet needs), and involved stakeholders. These core sub-themes prominently illuminated critical clinical entry points, including systemic disease-specific knowledge deficits, complex clinical decision-making dilemmas, multidimensional post-operative symptom clusters, and tailored home-care dietary management requirements. Based on these empirical dimensions, a comprehensive health management patient journey map was successfully constructed.

Conclusion: The developed patient journey map for thyroid tumor day surgery patients clarifies intervention priorities, providing a reference for the development and refinement of health management tools for thyroid tumor patients in China.

Keywords: thyroid tumor; day surgery; patient journey map; health management; qualitative research

Reporting Method: The study adheres to the Consolidated criteria for Reporting Qualitative research (COREQ) guidelines.

Patient or Public Contribution: Patients Undergoing Day Surgery for Thyroid Tumor

1 Introduction

Ambulatory (day) surgery has become a major global trend in modern healthcare delivery, recognized as an innovative managed care model to optimize clinical efficiency, shorten hospital stays, and reduce healthcare expenditures [1]. Recent international evidence indicates that expanding ambulatory surgical pathways allows healthcare institutions to maximize bed turnover while maintaining clinical safety and treatment efficacy [2]. The widespread implementation of ambulatory surgery relies heavily on the integration of Enhanced Recovery After Surgery (ERAS) protocols, which aim to minimize surgical stress and accelerate functional recovery [3]. In hospital settings, day surgery is defined as a planned surgical procedure where patient admission, operation, and discharge are seamlessly completed within a 24-hour timeframe, with exceptional extensions capped at a maximum of 48 hours [4].

Driven by this rapid contraction of physical and temporal boundaries, the primary frontline of post-operative rehabilitation has abruptly migrated away from highly monitored hospital wards into complex domestic and community ecosystems [5]. Under this high-turnover clinical pathway, patients and their family caregivers are suddenly tasked with independent home-care execution and clinical symptom monitoring, which fundamentally shifts the responsibility of recovery onto the family ecosystem [6]. Improving the safety and quality of home-based rehabilitation has therefore emerged as a strategic priority for healthcare organizations to ensure successful surgical outcomes and prevent unplanned healthcare utilization [7].

2 Background

In recent years, the incidence of thyroid tumors in China has demonstrated a continuous upward trajectory, distinguishing itself as the solid malignancy with the most pronounced increase in incidence over the past two decades [8]. According to data released by the National Cancer Center in 2022, thyroid tumors rank second in cancer incidence among the population aged 15 to 44. Furthermore, within female malignancies, its incidence is surpassed only by breast and lung cancers, thereby posing a formidable threat to both the physical and mental well-being of citizens, as well as national socioeconomic development [9,10]. Surgical resection remains the primary therapeutic modality for thyroid tumors. Given that certain thyroid procedures feature short operative durations and exert minimal impact on systemic organ function, coupled with the widespread adoption of Enhanced Recovery After Surgery (ERAS) protocols within the surgical domain, numerous large-scale, tertiary grade-A hospitals across China have actively implemented ambulatory (day) surgery for thyroid tumors. Ample clinical evidence has subsequently validated the clinical efficacy and safety of this managed care model [11,12]. Day surgery is defined as a planned surgical procedure wherein admission, operation, and discharge are seamlessly completed within a 24-hour timeframe (strictly excluding outpatient procedures), with a maximum hospitalization duration capped at 48 hours for exceptional clinical extensions [13]. However, this radical compression of physical and temporal boundaries within the ambulatory model inherently dictates a dramatic paradigm shift: the primary frontline of patient rehabilitation has rapidly migrated

from highly monitored intra-hospital wards to complex domestic and community ecosystems. Under this high-turnover clinical pathway, patients and their family caregivers are abruptly tasked with independent home-care execution. Consequently, factors such as the necessity of lifelong endocrine medication titration, an intrusive fear of cancer recurrence, and post-operative cervical scar formation frequently predispose patients to a myriad of intricate, overlapping psychosocial vulnerabilities and severe disease-specific knowledge deficits, ultimately compromising their post-discharge quality of life [14,15]. Therefore, a comprehensive, multi-dimensional evaluation of patients' health management experiences across the entire care continuum is an imperative cornerstone for enhancing their long-term recovery outcomes. The patient journey map serves as an innovative tool and methodological approach to visually render the complex, dynamic interactions between patients and various components of the healthcare delivery system, which has been increasingly deployed within chronic disease management [16]. Given the distinct advantages of this methodology in eliciting deeply embedded unmet needs and optimizing the holistic patient experience, the present study utilizes a descriptive qualitative design to construct a health management journey map tailored for ambulatory thyroid surgery patients. By systematically deciphering their critical health management pain points to identify precise, micro-level intervention targets, this study aims to provide a robust, empirically grounded benchmark for the design and refinement of intelligent, full-course integrated care pathways for thyroid tumor patients in China.

3 The Study

3.1 Aims

This study aimed to systematically construct a multidimensional health management patient journey map for patients undergoing ambulatory (day) surgery for thyroid tumors within the Chinese healthcare context. Specifically, the study sought to comprehensively explore the dynamic health management tasks, psychological and emotional trajectories, and critical unmet needs (pain points) experienced by these patients across their full diagnostic, perioperative, and rehabilitative continuum, thereby identifying precise, empirical targets for developing full-course integrated care pathways.

3.2 Research Question

The central research questions guiding this descriptive qualitative inquiry were:

- (1)"What are the lived health management experiences and developmental trajectories of patients undergoing day surgery for thyroid tumors from initial diagnosis to their return to work?"
- (2)"What specific clinical, psychosocial, and structural barriers do these ambulatory patients encounter across different chronological milestones of their care journey?"

4 Methods

4.1 Study Design

Guided by the established procedural frameworks for patient journey mapping [17],

this study integrated a semi-structured interview approach with a descriptive qualitative research design to conduct in-depth interviews exploring the comprehensive health management needs of patients undergoing day surgery for thyroid tumors. Consequent to data synthesis, a structured health management journey map was subsequently constructed. Furthermore, this study strictly adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist to ensure methodological rigor and transparency.

4.2 Participant Recruitment and Researcher Preparation

Using a purposive sampling strategy guided by the principle of maximum variation, patients who underwent day surgery for thyroid tumors in the ambulatory care ward of a tertiary first-class hospital in Nanchang, China, were recruited between May 2025 and May 2026.

The inclusion criteria were defined as follows:

- (1) Patients with a confirmed diagnosis of a thyroid tumor who had successfully completed day surgery;
- (2) Individuals aged ≥ 18 years possessing adequate literacy, communication capacities, and no evidence of cognitive impairment;
- (3) Willingness to provide informed consent and participate in the study.

The exclusion criteria comprised:

- (1) Patients in the end-stage phase of disease with an estimated survival of ≤ 6 weeks;
- (2) Individuals presenting with concurrent malignancies at other anatomical sites;
- (3) Those lost to follow-up after hospital discharge.

Consequent to these criteria, a final cohort of 14 patients was enrolled in the study.

4.3 Ethical Considerations

Data collection officially commenced following institutional review and formal ethical approval from the Institutional Review Board (IRB) of the tertiary grade-A hospital in Nanchang (Approval No. IIT2025467). This study was conducted in accordance with the ethical principles for medical research involving human subjects set forth in the Declaration of Helsinki.

Prior to the initiation of each semi-structured interview, all eligible participants were comprehensively briefed regarding the study's precise clinical objectives, methodological frameworks, and the visual mapping process. They were explicitly assured that all gathered experiential narratives would be deployed strictly for academic research purposes. Furthermore, participants were informed that the interviews would be digitally audio-recorded, that all personal identifiers would be thoroughly anonymized to ensure absolute confidentiality, and that declining participation or choosing to withdraw from the inquiry at any chronological juncture would incur no negative repercussions or disadvantages regarding their subsequent clinical follow-up care. Written informed consent was systematically obtained from each participant prior to conducting the qualitative sessions. To guarantee data security, the researchers personally transcribed and cross-verified the interview transcripts, encrypted all digital assets, and secured them in a password-protected

laboratory database accessible exclusively to the primary research team. Upon completion of the interview trajectories, participants were provided with a standardized token of appreciation to compensate for their time and contribution to the study.

4.4 Data Collection

Face-to-face, in-depth interviews were conducted exclusively by the primary investigator. The semi-structured interview guide was rigorously formulated through an extensive literature review, multidisciplinary investigator group discussions, and pilot interviews. The finalized prompt schedule comprised the following core investigative inquiries:

- (1) Reflecting upon your entire clinical trajectory—spanning from initial symptom onset and diagnostic evaluations to inpatient surgery, subsequent therapy, and your eventual return to employment—which specific healthcare experiences left the most profound impression on you?
- (2) Across the distinct phases of diagnostic evaluation, inpatient surgery, extended treatment, and convalescent rehabilitation, what specific health management activities did you actively participate in, and what distinct challenges or impediments did you encounter during these processes?
- (3) Which particular stages or concrete events throughout your diagnostic and therapeutic continuum resonated with you most deeply, and could you elaborate on the precise circumstances surrounding those moments?
- (4) Throughout the entirety of your disease diagnosis and management trajectory, which individuals provided you with health-management-related support, and what specific roles did they play across these varying chronological phases?

Prior to the commencement of data collection, the primary investigator contacted the prospective participants to establish a supportive and trusting rapport. The participants were explicitly informed regarding the researcher's professional identity, as well as the overarching objectives and scope of the study. Following the attainment of full, informed verbal and written consent, formal informed consent forms were duly signed. To respect participant autonomy and comfort, the interview venues were selected based entirely on the patients' preferences, utilizing either a quiet outpatient lounge or a designated clinical counseling room to ensure strict confidentiality. Consequent to obtaining explicit permission, all interview sessions were digitally audio-recorded. Concurrently, the investigator closely observed and documented any non-verbal cues, emotional fluctuations, and behavioral nuances exhibited by the patients.

Any ambiguities or uncertainties arising during the dialogue were immediately clarified with the participants to ensure communicative validation. This iterative process of data collection persisted until no novel themes or insights emerged, signifying that a state of data saturation had been rigorously achieved, at which point the interviews were concluded.

4.5 Data Management and Analysis

Qualitative data were systematically evaluated utilizing content analysis [18]. To

minimize recall bias and ensure data integrity, all digital audio recordings were transcribed verbatim and cross-checked within 24 hours following the conclusion of each narrative interview.

The concrete procedural steps executed during the content analysis process were delineated as follows:

(1) Immersive Textual Familiarization: The interview transcripts were subjected to iterative, repetitive readings to acquire a comprehensive and nuanced familiarity with the core narrative substance.

(2) Initial Meaning Unit Identification: Salient phrases, conceptual expressions, and segments of manifest research significance within the raw data were meticulously extracted and highlighted.

(3) Independent Coding and Consensus Validation: Two investigators independently audited the textual data and systematically compared the preliminary coding structures; any discrepancies were resolved through reflexive consensus discussions to establish the finalized coding schema.

(4) Deductive and Inductive Conceptual Categorization: The emergent codes were systematically categorized by cross-referencing the pre-established four-phase clinical trajectory of thyroid tumor management with a three-dimensional framework evaluating patient tasks, emotional fluctuations, and core pain points.

(5) Thematic Synthesizing and Synthesis: The intrinsic interconnectedness and latent patterns among the validated codes were deeply excavated and cross-analyzed, ultimately culminating in the abstraction and formulation of the core thematic clusters. By integrating the pre-established structural framework of the patient journey map with the rich, empirical data and descriptive narratives elicited from the in-depth interviews, the dynamic trajectories and temporal shifts in patients' health management needs were systematically delineated across the clinical and rehabilitative continuum. Consequent to this synthesis, a multidimensional, visual health management journey map was constructed to render these intricate patient-system interactions explicit.

4.6 Rigour and Reflexivity

This study ensured the rigour and trustworthiness of qualitative research through the principles of credibility, auditability, fittingness, and confirmability proposed [19]. To ensure credibility, participants were selected via purposive sampling based on their direct ability to articulate their multi-stage ambulatory care experiences, and face-to-face interviews were conducted in private, comfortable clinical rooms to foster an atmosphere of trust. To minimize recall bias, digital recordings were transcribed verbatim within 24 hours and verified with participants for communicative validation, followed by an independent double-auditing process where two researchers separately coded the transcripts and resolved discrepancies through consensus discussions. To establish auditability, a detailed and transparent explanation of the research purpose, semi-structured prompt schedules, and content analysis steps was provided, alongside a visually integrated journey map that clearly tracks the analytical progression from raw quotes to abstract themes. To guarantee fittingness,

the general demographic and clinical characteristics of the 14 diverse participants were meticulously described to evaluate transferability, and data collection persisted iteratively until empirical saturation was rigorously achieved in compliance with the COREQ checklist. To maintain confirmability and reflexivity, the multi-disciplinary research team—comprising nursing experts and clinical oncology researchers—consistently bracketed their professional preconceptions during data analysis. Researchers utilized field notes to document non-verbal cues and engaged in regular reflexive team debriefings to prevent provider-centered institutional biases, thereby ensuring that the emergent emotional trajectories and systemic pain points remained strictly grounded in the empirical, lived realities of the ambulatory oncology patients.

5 Results

This study included 14 participants: 11 females and 3 males. Of the participants, four were in their 20s (21 – 29 years), seven were in their 30s (30 – 39 years), two were in their 40s (40 – 42 years), and one was in his 60s (60 years), with an average age of 35.29 ± 11.23 years. Regarding marital status and family structure, 10 participants were married, three were unmarried, and one was divorced, with an average number of children being 0.86 ± 0.77 . In terms of socio-demographic indicators, the occupational distribution of the cohort comprised office staff ($n = 5$), farmers ($n = 3$), teachers ($n = 2$), manual laborers ($n = 2$), students ($n = 2$), and a nurse ($n = 1$). The educational level of the participants spanned primary school ($n = 3$), junior high school ($n = 1$), senior high school ($n = 2$), junior college ($n = 3$), Bachelor's degree ($n = 3$), and Master's degree ($n = 2$). The surgical modalities experienced by the ambulatory participants included total thyroidectomy ($n = 6$), unilateral thyroidectomy ($n = 2$), unilateral partial thyroidectomy ($n = 3$), unilateral thyroid lobectomy ($n = 2$), and endoscopic unilateral thyroidectomy ($n = 1$).

The data analysis identified a total of 131 codes, which were categorized into 4 interconnected domains and 19 sub themes.

5.1 Screening and Diagnostic Phase

5.1.1 Patient Tasks

(1) Early Symptom Recognition: Patients routinely exhibited a profound deficit in their foundational understanding of the initial clinical manifestations of thyroid tumors. This lack of diagnostic awareness and proactive vigilance frequently culminated in the inadvertent omission or trivialization of atypical physiological anomalies.

N3: "My neck was just a bit thick; I thought it was due to weight gain and didn't suspect a medical issue."

N6: "I didn't have any symptoms in my day-to-day life; it was only discovered during a medical check-up. I hadn't felt anything at all before that."

N8: "I was completely unaware that a cervical mass or discomfort during swallowing could potentially be indicative of a thyroid disorder."

N12: "I presumed that my hoarseness was merely a transient symptom of internal heat

('Shanghuo'), completely failing to suspect any correlation with my thyroid gland."

N14: "There were absolutely no symptoms in the initial stages. By the time it was identified, the mass had already developed significantly; in fact, it was only after someone else recommended it that I underwent a thyroid evaluation."

(2)Therapeutic Decision-Making: Patients exhibited a marked deficiency in their knowledge base regarding thyroid oncology therapeutics, culminating in pronounced difficulties in comprehending and selecting appropriate treatment modalities.

N1: "I had absolutely no idea whether a total thyroidectomy or a hemithyroidectomy would be a superior option for me, so I simply deferred to the physician's judgment."

N2: "I'd like to know what the surgical procedure involves; since it's a minimally invasive surgery, the recovery should be relatively quick, right?"

N7: "I've seen photos online where the wounds look terrifying—like the result of a suicide attempt."

N11: "Is a partial thyroidectomy likely to result in a recurrence? What impact would a total thyroidectomy have on my body?"

N12: "If a total thyroidectomy is performed, does that mean I am strictly bound to lifelong medication adherence?"

5.1.2 Emotional Status

(1) Anxiety: A substantial majority of patients experienced severe anxiety during the diagnostic waiting period. Concurrently, a subset of patients struggled to psychologically accept their diagnosis in the acute short term due to pervasive concerns regarding the life-threatening nature of malignancies, thereby engendering a profound sense of dread toward the impending surgical intervention.

N1: "When I first heard the diagnosis that I had cancer, I was overwhelmed by intense anxiety and terror. It felt as though my entire world was collapsing, and I sincerely believed I would not survive."

N5: "The thought of going to the operating table fills me with worry: what if something goes wrong and I die? What will my family do then?"

N11: "The moment the doctor told me I had been diagnosed with thyroid cancer, my head spun; however, I felt less anxious after the doctor explained that it wasn't something to worry too much about and that recovery after surgery is generally very good."

(2) Guilt: A subset of patients expressed profound feelings of guilt toward their family members, driven by pervasive apprehensions regarding the temporary or permanent impairment of their familial roles and functional responsibilities.

N6: "I've just gotten married, but after the treatment, I don't know when I'll be able to have children; I feel like I've let everyone down."

N13: "I can't manage looking after the child anymore. My partner works out of town, and my family members are in poor health and unable to help with childcare; now

I've fallen ill myself—what am I supposed to do?"

5.1.3 Core Pain Points

(1) Demands for Early Diagnosis and Timely Intervention: Because thyroid tumors routinely present without overt clinical symptoms during their initial stages, patients may exhibit only a painless cervical mass or nodule. This insidious clinical presentation frequently culminates in significant diagnostic and therapeutic delays. Among the cohort, a total of 10 patients explicitly reported experiencing an initial diagnostic misjudgment, which subsequently led to a delay in initiating therapeutic intervention.

N1: "Someone made a joke that my neck looked a bit enlarged, but I didn't pay any attention to it at first, assuming I had simply gained weight."

N5: "Initially, I mistakenly misattributed it to a late post-operative complication stemming from my cervical cancer resection five years ago."

N9: "I was consistently presenting with hypotension and occasional vertigo, so I went to the hospital for an evaluation, but they failed to detect any underlying issues at that time."

5.2 Perioperative Phase

5.2.1 Patient Tasks

(1) Management of Respiratory Symptom Clusters: Patients undergoing thyroid tumor resection are highly susceptible to an array of post-operative symptoms, including coughing, pharyngeal pain, nausea, and emesis, with pharyngeal pain and coughing demonstrating the highest incidence rates. Severe or paroxysmal coughing not only significantly impedes wound healing but may also precipitate incisional hemorrhage and hematoma formation. In critical scenarios, these complications can induce acute airway obstruction and subsequent asphyxiation, thereby presenting a direct and severe threat to patient survival. Within the current interview cohort, a total of 9 patients explicitly reported experiencing post-operative respiratory and upper airway discomfort.

N11: "During the first night following my surgery, I was coughing and expectorating sputum continuously. The pharyngeal pain was excruciatingly severe whenever I attempted to deglutit."

N13: "At this very moment, I simply do not dare to swallow my own saliva; my throat is intensely painful, and it feels as though there is a physical obstruction lodged inside my pharynx."

(2) Cervical and Neck Symptom Management: During thyroid surgery, patients' necks are placed in a state of prolonged hyperextension for extended periods, which frequently precipitates severe post-operative cervical discomfort and muscle soreness.

N7: "During the first night post-operatively, the anterior aspect of my neck felt intensely uncomfortable. I was completely at a loss as to which lying position was

appropriate, and I was terrified of turning over. Fortunately, it began to ameliorate slightly by the second post-operative day."

N10: "My neck has been quite painful since the surgery, and I am too frightened to rotate my head. I have no idea how long this will persist before resolving, and I keep worrying whether it will remain like this permanently."

5.2.2 Emotional Status

(1) Reluctance Regarding Wound Aesthetics: The psychological and physical repercussions of post-operative scarring on patients' health-related quality of life are non-negligible. Specifically, the horizontal cervical incision scar exerts a significantly more pronounced and disruptive psychological impact on young female cohorts.

N2: "Following the surgery, I absolutely did not dare to look in the mirror to examine my own surgical incision."

N4: "I inherently possess a keloid-prone constitution; even minor bumps and scrapes in my daily life result in scars that are remarkably difficult to resolve. I am completely uncertain as to how long it will take for this surgical scar to fade away."

N7: "The surgical wound on my neck looks utterly unsightly—almost as if I had been slashed with a knife. If I had anticipated that it would leave such a conspicuous scar, I would have willingly paid a premium to undergo an aesthetic, minimally invasive incision instead."

(2) Anxiety Regarding Pathological Sequelae: A total of 2 respondents explicitly voiced intense apprehensions regarding potential recurrent laryngeal nerve (RLN) injury.

N6: "Post-operatively, I presented with hoarseness. I remember locking myself in the restroom, desperately exerting all my effort to vocalize, but I completely failed; I was so overwhelmed with panic that I burst into tears. Subsequently, after gathering related information online, I became consumed by the terrifying anxiety that the surgery might have accidentally injured my recurrent laryngeal nerve."

N9: "If this hoarseness persists permanently into the future, what will happen when I attend my child's parent-teacher conferences? Will my child's classmates ridicule them for having a mute mother? I am profoundly tormented by the fear that this condition will incapacitate me for the rest of my life."

5.2.3 Core Pain Points

(1) Burden of Post-Operative Wound Self-Management: Driven by the rapid turnover rates inherent to ambulatory surgery (day surgery), patients are urgently required to master the clinical knowledge essential for independent wound care. In practice, however, patients routinely exhibit a pervasive deficit in these capabilities, culminates in a substantial self-management burden.

N1: "My incision has not fully healed yet; is it genuinely safe for me to be discharged

at this stage? Is there any risk that the wound might dehiscence during my transit home?"

N5: "Can I visit a community hospital for routine wound dressing changes? What is the recommended frequency for these changes, and when exactly can the sutures be removed?"

N7: "Regarding my sleeping posture, should I remain supine or lie on my side? Will turning over exert excessive tension or traction on the incision line?"

N10: "Are there any specific dietary restrictions or nutritional requirements I should adhere to? Concurrently, how soon post-operatively will it be safe for me to bathe?"

5.3 Extended Care Phase

5.3.1 Patient Tasks

(1) Cervical Functional Exercises: Owing to a pervasive dread of incisional hemorrhage or localized pain, a significant majority of patients exhibited a marked reluctance to perform post-operative cervical functional exercises. This sedentary behavior progressively exacerbated their cervical discomfort, thereby impairing optimal wound healing and precipitating scar contracture.

N2: "I distinctly recall the physician instructing me to perform neck exercises; however, I am overwhelmed by a profound dread regarding the wound. The mere realization that this anatomical site has undergone surgery induces this persistent apprehension."

N4: "I am uncertain whether it is purely a psychological manifestation, but whenever I mobilize my neck, I consistently perceive a persistent foreign body sensation deep within the tissues."

N9: "The physician advised me that I should engage in cervical exercises during the later stages of recovery, but I routinely experience cognitive lapses regarding this task. Once my daily schedule becomes demanding, it completely slips my mind; currently, I sense that the underlying tissues around the incision are beginning to exhibit localized contracture and adhesion."

(2) Medication Self-Management: Patients exhibited relatively low medication adherence during home-based therapy. A significant majority demonstrated detrimental behaviors such as missing doses or unilaterally discontinuing therapy, with adherence rates progressively declining over prolonged treatment durations. Furthermore, a subset of younger cohorts underestimated the clinical necessity of strict adherence to prescribed dosages and schedules, occasionally harboring a misplaced sense of security.

N7: "Initially, I adhered strictly to the prescription. However, over a prolonged duration, I felt it was no longer necessary to continue, reasoning that I could simply resume the medication if symptoms recurred in the future."

N8: "Taking it for a few days is perfectly manageable, but over the long term, pill burden and non-adherence set in. Moreover, I read online that 'all medications carry

inherent toxicities,' so I am terrified that long-term therapy might induce systemic toxicity."

N9: "I typically take it only when I happen to remember; if a dose slips my mind, I just let it go, rationalizing that missing a single dose would be clinically inconsequential."

N13: "When my workplace schedule becomes chaotic and demanding, I frequently experience inadvertent omissions."

5.3.2 Emotional Status

(1) Anxiety Regarding Cervical Scarring: Post-operative scarring within the anterior cervical region leaves a permanent physical mark on the body's surface, which frequently precipitates body image disturbance among patients. Consequently, a subset of individuals even develops moderate-to-severe levels of perceived stigma [20].

N4: "My boyfriend commented that the scar on my neck looks repulsive, and he even consciously avoids looking at my neck altogether."

N5: "Will this scar eventually resolve entirely? Are there any topically applied ointments or therapeutic creams that could effectively diminish its hyperpigmentation?"

N11: "The scar on my neck has currently faded significantly; in order to minimize its visibility, I have undergone numerous aesthetic interventions at a medical spa."

N14: "During a blind date two days ago, the other individual persistently cross-examined me regarding the etiology of this cervical scar. I was completely disinclined to explain it further, as I could distinctly perceive their underlying aversion and subtle rejection toward me purely because of this scar."

(2) Anxiety Regarding Disease Recurrence: Driven by heterogeneities in tumor histopathology or inappropriate selections of surgical approaches, post-operative tumor recurrence remains a critical clinical risk. Within the current interview cohort, a total of 10 patients explicitly demonstrated intense vigilance and profound apprehension regarding potential disease relapse.

N1: "This marks the second time I have undergone thyroid surgery. I explicitly consulted my physician regarding whether it could recur yet again following a secondary procedure, but they were unable to provide a definitive guarantee. If it relapses a third time, I genuinely lack the fortitude to carry on living."

N2: "My sole purpose in undergoing this operation was the hope of achieving a complete margin-free resection, ensuring the tumor will never relapse. Even if I have to endure localized cervical pain post-operatively, such physical discomforts are entirely consequential."

N3: "Is this specific pathology prone to recurrence? Furthermore, are there any strict dietary restrictions I must adhere to? As long as a measure is clinically proven to prevent relapse, I will comply with it with absolute rigor."

5.3.3 Core Pain Points

(1) Multi-Channel Informational Support Requirements: Due to the compressed length of hospital stay and accelerated discharge pacing inherent to ambulatory surgery, patients frequently encounter a pervasive deficit in perioperative information acquisition, which readily precipitates a sense of abandonment and profound psychological insecurity.

N2: "I was operated on and discharged all within the same day, leaving so many of my lingering inquiries unaddressed before I had the chance to ask. It was only after returning home that I realized I was utterly lost regarding the correct medication regimens."

N3: "The physicians and nursing staff were constantly overwhelmed with clinical tasks. It felt as though the moment I began to grasp a fraction of the information, I was already being discharged; consequently, I could not accurately retain the precise dietary restrictions and nutritional allowances."

N9: "Upon returning home, even when I experienced minor discomforts, I hesitated to reach out routinely out of fear of disturbing the medical staff. I felt this lingering sense that once you are discharged, you are essentially left detached from the care system with no further support."

N10: "We were merely handed a single discharge leaflet, but numerous practical nuances remain incomprehensible to me. I deeply desire for a professional to thoroughly walk me through the specific details once again."

N14: "The pacing of ambulatory surgery is incredibly rapid; it felt as though I was merely being 'shuffled through a rigid pipeline.' I found myself completely unprepared, both psychologically and from an informational standpoint."

5.4 Rehabilitation and Return-to-Work Phase

5.4.1 Patient Tasks

(1) Re-engaging in Occupational and Social Roles: Upon completion of active treatment, patients routinely encounter multifaceted barriers during their transition to re-enter the workforce and reintegrate into socio-communal activities.

N2: "Upon returning to my occupational role, I found myself failing to properly execute even marginally complex tasks. I am consumed by an intense apprehension that I will remain completely incapacitated for any form of employment in the future."

N6: "I perceive that my post-operative vocal volume remains significantly diminished. Prolonged phonation rapidly triggers vocal cord fatigue, which implies that it is currently unfeasible for me to resume my classroom teaching responsibilities."

N10: "After learning about my diagnosis, my peers actually cross-examined me on whether this pathology was contagious. It is genuinely beyond all reason and utterly preposterous!"

N11: "The department nurse manager has already exempted me from rotating onto late-night and overnight shifts. I plan to adapt to this pace gradually; however, if the

clinical workload proves too physically demanding, I will formally petition the Nursing Department for a lateral transfer to a relatively less demanding ward."

(2) Nutritional and Dietary Management Requirements: Post-discharge interviews revealed that patients undergoing ambulatory thyroid surgery exhibit pronounced informational requirements regarding post-operative dietary self-management. A substantial majority of respondents highlighted a pervasive deficit in systematic and precision-guided nutritional counseling, coupled with persistent anxieties that inappropriate dietary intake might detrimentally affect wound healing, thyroid function recovery, and long-term prognosis.

N6: "I presented with mild hyperthyroidism pre-operatively, during which I strictly restricted my dietary iodine intake. Post-operatively, the physician advised me to adjust my diet but failed to clarify the specific quantitative criteria. Consequently, I am highly uncertain whether I should maintain this rigid iodine restriction or if it can be moderately liberalized. I earnestly desire professional, precision-guided nutritional counseling to assist me in managing my dietary regimen."

N9: "I am still experiencing mild localized pharyngeal discomfort post-operatively, presenting with a persistent foreign body sensation during swallowing. I am entirely unclear as to how long it will take before I can transition back to a normal diet, nor do I know how to optimize macronutrient combinations to guarantee sufficient nutrition. My primary fear is that nutritional deficits might detrimentally impair incisional healing."

N14: "I have been informed that consuming pungent, spicy, or greasy foods post-operatively can readily precipitate incisional erythema and swelling. However, when my family prepares meals, it is virtually unavoidable that certain seasonings are incorporated. Lacking a concrete, structured dietary menu for reference, I find myself meticulously ruminating over my daily meal plans repeatedly, which induces substantial psychological anxiety."

5.4.2 Emotional Status

(1) Anxiety Regarding Reproductive Health and Childbearing: Within traditional domestic structures, female individuals routinely shoulder the primary responsibilities of pregnancy, childbirth, and child-rearing. Consequently, a substantial subset of young female patients diagnosed with thyroid tumors exhibits a heightened level of childbearing anxiety. Their core apprehensions center on whether post-operative maintenance medications and potential Iodine-131 (¹³¹I) therapeutic interventions might exert detrimental or teratogenic effects on fetal growth and development.

N2: "I am highly apprehensive that thyroid hormone medications might exert adverse effects on the fetus. Furthermore, I am consumed by deep anxiety regarding whether it is safe to maintain physical proximity to my infant upon returning home after treatment, or if the residual radiation exposure could inflict long-term harm on them."

N9: "Although the physician reassured me that the risks to the infant are clinically

negligible, I inevitably harbor lingering reservations. I remain genuinely terrified of potential implicit adverse outcomes for the child, as well as the underlying threat of hereditary genetic transmission."

N12: "Taking these medications long-term must inevitably entail detrimental consequences for the offspring, right? Will the baby I conceive present with congenital deficits or developmental delays—such as stunted stature or cognitive impairment?"

5.4.3 Core Pain Points

(1) Informational Requirements for Accessible and Expedited Medical Services:

Post-discharge findings indicate that due to the compressed length of hospital stay juxtaposed against a prolonged post-operative rehabilitation trajectory, a significant majority of patients undergoing ambulatory thyroid surgery report a critical deficit in efficient, accessible communication channels. This structural barrier severely impedes their ability to acquire timely, professional medical support, thereby precipitating heightened psychological anxiety.

N3: "If a dedicated communication platform were accessible post-discharge, I could utilize it to consult professionals whenever encountering clinical anomalies such as incisional discomfort or localized swallowing disturbances. This would eliminate the logistical burden of unnecessary hospital readmissions while mitigating persistent psychological distress."

N11: "Although I possess the personal contact information of my attending physician, I am acutely aware of their overwhelming clinical workload. Consequently, I feel extreme reticence in repeatedly disturbing them with minor post-operative queries. It would be immensely beneficial if a dedicated healthcare liaison or nursing professional were designated explicitly to coordinate post-operative consultations."

N14: "Post-operatively, I occasionally experience mild localized cervical swelling. I am entirely uncertain whether this falls within the parameters of a normal physiological recovery trajectory; however, when attempting to consult a clinician, I find myself confronting a complete lack of accessible pathways. Ultimately, I am forced to rely on self-directed internet searches, which induces heightened cognitive anxiety due to my persistent skepticism regarding the accuracy of online information."

The multi-dimensional Health Management Journey Map for patients undergoing thyroid tumor day surgery was constructed across four chronological care stages, as shown in Figure 1.

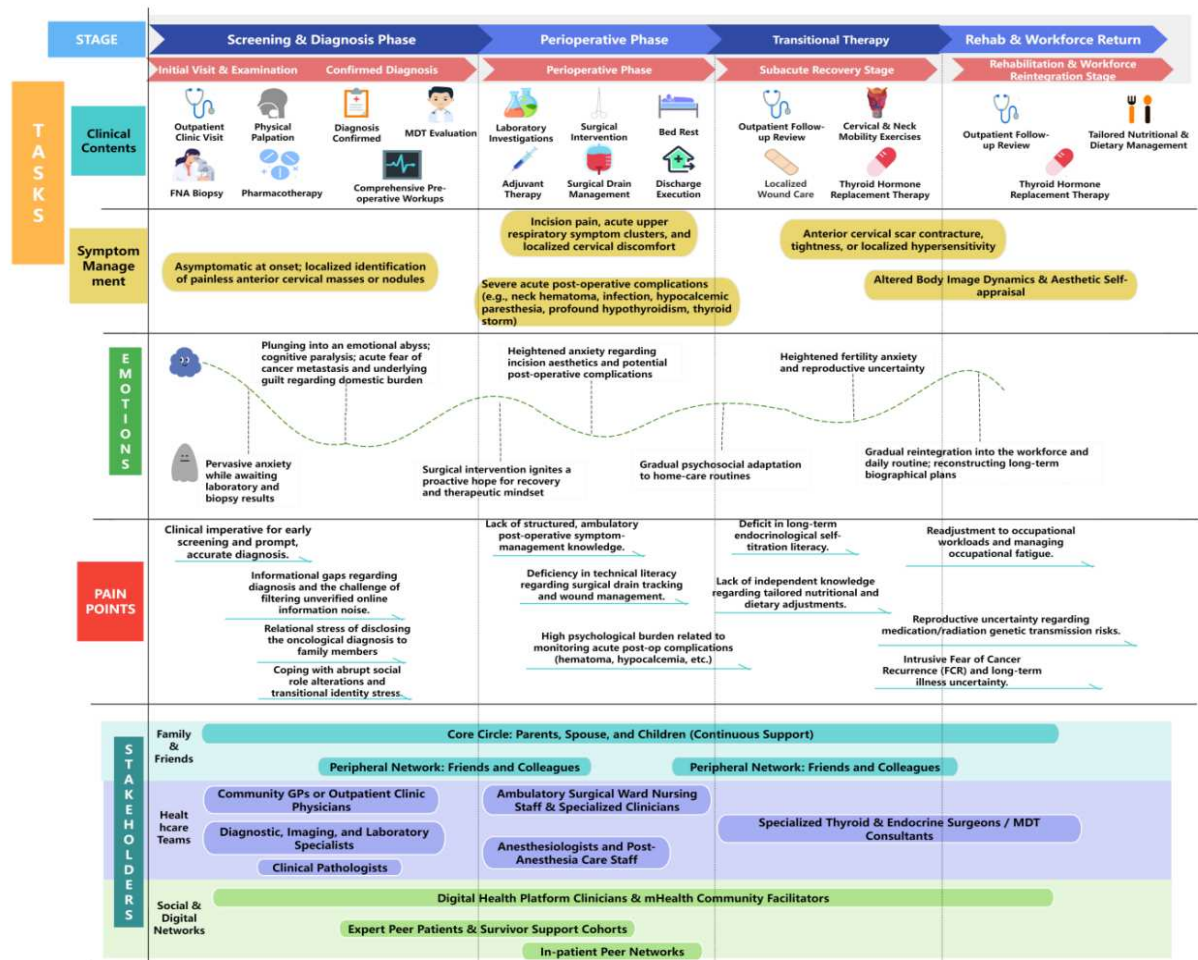


Figure 1 Health Management Journey Map of Patients Undergoing Day Surgery for Thyroid Tumor

6 Discussion

6.1 Using Patient Journey Mapping to Improve Ambulatory Care Workflows and Resource Allocation

Applying ambulatory surgery to thyroid oncology reduces length of stay and increases bed turnover. However, shorter hospital stays leave less time for perioperative education and guidance, making home recovery a major factor in overall care quality [21,22]. Traditional transitional care often lacks clear timing and proactive follow-up, leading to unmet patient needs and inefficient resource use [23]. To address these issues, the patient health journey map developed in this study links patient tasks, emotional changes, and reported pain points across the care continuum. This visual tool helps multidisciplinary teams identify and address patient needs at specific clinical stages [24].

Tracking emotional trajectories revealed two distinct peaks in psychological distress: during the immediate perioperative period and shortly after discharge. Identifying these timeframes allows nurses to schedule supportive interventions before anxiety escalates. In addition, the journey map provides a clear structure for connecting routine health data—such as Electronic Health Records (EHRs), patient-reported outcomes, and remote symptom tracking—to specific care stages [25]. With these connected data points, clinical teams can move from reactive care to scheduled

follow-ups, offering targeted education and advice before key transition events like returning to work, dietary changes, and peak scar formation. This approach helps reduce unplanned hospital visits and improves patient satisfaction [26].

6.2 Information Barriers and Psychosocial Concerns in Young Female Patients: Application of Transition Theory

The brief hospital stay in ambulatory thyroid surgery limits time for direct patient-clinician communication. Based on Meleis's Transition Theory, the combination of limited information and emotional distress acts as a negative personal condition that hinders a smooth recovery transition [27]. Young female patients, who represent a large proportion of thyroid tumor cases, face specific physical, psychological, and social challenges. The journey map highlighted three main concerns in this group: Fear of Cancer Recurrence (FCR) and Uncertainty: Limited disease-specific knowledge often increases uncertainty about long-term prognosis and recurrence. FCR is a common issue among young cancer survivors that requires structured psychological support [28,29]. Body Image Concerns and Social Avoidance: Surgical scars on the neck frequently cause distress over physical appearance, leading to reduced self-esteem and social withdrawal [30]. Fertility Concerns and Role Changes: Young women of reproductive age often worry about whether thyroid hormone therapy or radioactive iodine (^{131}I) treatment will affect future pregnancies or fetal health. A lack of clear counseling on these topics adds to personal and family stress [31]. To address these challenges, nursing staff need to take an active role in guiding patients through recovery transitions. Hospitals can support this by diversifying how health information is delivered. Mobile applications and printed educational materials can provide clear guidance on scar management and everyday rehabilitation, reducing uncertainty [32]. Furthermore, care teams should include specialists from thyroid surgery, endocrinology, obstetrics/gynecology, psycho-oncology, and dermatology. This multidisciplinary team can offer timely fertility assessments, scar treatments, and psychological support during the critical periods identified on the journey map [33].

6.3 Addressing Resource Limitations to Support Post-Discharge Care

Shifting care from hospital wards to the home places greater responsibility on patients, families, and local clinics. According to Meleis's Transition Theory, community conditions—including available local resources and family support—directly influence recovery outcomes [27,34]. Currently, transitional care for ambulatory thyroid surgery faces several practical limits: hospital follow-up is often brief and standardized, family members often lack training to manage post-operative symptoms, and primary care clinics may lack specialized nursing staff for thyroid care [35].

Improving post-discharge support requires better coordination among hospitals, community health centers, and families. Formal agreements and shared communication protocols can help build a connected care network across these three levels [36]. Digital tools, such as mobile health platforms, enable remote consultations, symptom reporting, and guided recovery exercises, giving patients steady access to

advice after leaving the hospital [37,38]. Additionally, care should extend beyond basic wound monitoring to include neck mobility exercises, dietary guidance, and long-term scar care [39]. Involving trained community volunteers and local rehabilitation services can further expand support options, helping establish consistent, long-term care for ambulatory surgical patients [40].

7 Study Strengths and Limitations

7.1 Study Strengths

This study is meaningful because it explored the full-course health management trajectory of ambulatory thyroid surgery patients in depth from the holistic perspective of the patients themselves. Our findings offer important insights into transitional care and day surgery recovery by highlighting patients' emotional trajectories, severe disease-specific knowledge deficits, the distinct psychosocial vulnerabilities unique to young female patients, and the critical need to establish a digitally intelligent, integrated management system to strengthen post-discharge safety and continuity of care.

7.2 Study Limitations

Despite the study strengths, this study also had several limitations. First, as a descriptive qualitative study involving a purposive sample of ambulatory patients, the diversity of the data and universal representativeness of the findings across different medical tiers were restricted. Second, participants' experiences were exclusively derived from a single tertiary grade-A hospital, thereby constraining the transferability of the experiential trajectories to diverse geographic regions or heterogeneous healthcare cultural contexts. Third, the qualitative interviews focused predominantly on the single narrative perspective of individual patients, which omitted the synchronous, multi-stakeholder insights from primary family caregivers and specialized thyroid surgery clinicians, potentially limiting the comprehensive analysis of the reciprocal care ecosystem. Fourth, the varying post-operative intervals among the included patients may have introduced recall variability or recall bias regarding their acute perioperative emotional states and transient physical symptoms.

Therefore, future research should include a broader and more diverse sample across various healthcare settings, regions, and multiple clinical centers to enhance the diversity of data and transferability of findings. Moreover, longitudinal study designs or mixed-methods approaches that track patients dynamically from pre-admission to long-term rehabilitation may help strengthen the depth, objectivity, and chronological credibility of the data. Further research is also needed to design and evaluate the clinical effectiveness of digital health management tools based on these mapped patient journey trajectories.

8 Implication for Policy and Clinical Practice

The findings show that current follow-up systems are not enough for day surgery patients, who face many self-care challenges after leaving the hospital. These results

offer useful ideas for both hospital policy and clinical nursing.

First, at the clinical level, hospitals need better and faster ways to support patients at home, especially during the risky first few days after discharge. Medical teams should build easy-to-use digital platforms or mobile apps. These tools can give patients clear guidance on wound care and diet, and let them report symptoms directly to doctors.

Second, for frontline nurses, they play a key role in finding home care risks. Nurses should pay close attention to signs of early complications, neck scar problems, and voice changes. For young female patients, nurses must provide extra emotional support to help them deal with worries about neck scars and future pregnancy issues related to hormone or radiation therapy. Training programs should focus on improving nurses' skills in home care education and digital tracking tools.

Third, at the policy level, health managers should recognize patients as active partners in healthcare. When evaluating the quality of day surgery centers, managers should look beyond hospital indicators. They should include post-discharge metrics, such as how well patients manage their symptoms at home and the rate of unplanned hospital returns. This will help shift the healthcare system toward full-cycle health management.

9 Conclusion

Utilizing a descriptive qualitative design, this study pioneered the construction of a comprehensive health management journey map tailored specifically for patients undergoing ambulatory thyroid surgery within the Chinese healthcare context. Through a panoramic, visually integrated framework spanning four key reflective dimensions—tasks, emotional trajectories, pain points (unmet needs), and involved stakeholders—this study systematically maps the continuum across four distinct, chronological stages: screening and diagnosis, the perioperative phase, transitional therapy, and rehabilitation and reintegration into the workforce. In doing so, it illuminates critical nexus points for clinical optimization, including systemic disease-specific knowledge deficits, fragmented channels of information acquisition, heavy post-discharge self-management burdens, and the intricate, overlapping psychosocial vulnerabilities unique to young female patients. The health management journey map engineered in this study transcends the inherent boundaries of traditional, fragmented post-discharge follow-ups, thereby providing a robust, empirically grounded framework for clinical multi-disciplinary teams to precisely identify micro-level intervention targets and re-architect intelligent, full-course integrated care pathways.

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References

- [1] Ahmed, A., A. A. Omar, S. Amin, et al. Establishing a Multidisciplinary One-Stop Thyroid Clinic: An Innovative Model to Expedite Thyroid Cancer Diagnosis and Enhance Patient-Centered Care. *International Journal of Surgery* (2026). *International Journal of Surgery*. <https://doi.org/10.1097/JS9.0000000000004826>.
- [2] Luo, Jiangrong., Xie, Chunbao., & Fan, Dan. (2025). Historical development and experience of day surgery in China: From the perspective of anesthesiologists. *Pediatric Anesthesia*, 35(2), 112–120. <https://doi.org/10.1111/pan.15078>.
- [3] Chinese Ambulatory Surgery Alliance, & Thyroid Surgery Group of Chinese Society of Surgery. (2022). Expert consensus on the quality and safety management of day surgery for thyroid diseases in China (2022 edition). *Chinese Journal of Practical Surgery*, 42(11), 1211–1216. <https://doi.org/10.19538/j.cjps.issn.1005-2208.2022.11.01>.
- [4] Segal, R., et al. (2023). Quality of recovery after day-case surgery: The gap between hospital discharge and full return to normal activities. *Journal of Clinical Nursing*, 32(11-12), 2845–2856. <https://doi.org/10.1111/jocn.16393>.
- [5] Reinhard, S. C., Given, B., Petlick, N. H., et al. (2008). Supporting family caregivers in providing care. In R. G. Hughes (Ed.), *Patient safety and quality: An evidence-based handbook for nurses*. Agency for Healthcare Research and Quality.
- [6] Tuhin, M., & N. S. A. (2026). Digital health interventions after ambulatory surgery: Beyond pain scores and unplanned visits. *European Journal of Anaesthesiology*, 43(4), 374–375. <https://doi.org/10.1097/EJA.0000000000002145>.
- [7] Ahmed, A., Omar, A. A., Amin, S., et al. (2026). Establishing a multidisciplinary one-stop thyroid clinic: An innovative model to expedite thyroid cancer diagnosis and enhance patient-centered care. *International Journal of Surgery*. Advance online publication.
- [8] National Health Commission of the People's Republic of China. (2022). Notice on releasing the recommended catalogue of day surgery statistics and standards (2022 edition). *Gazette of the National Health Commission*, 2022(5), 12–18.
- [9] Bray, F., M. Laversanne, H. Sung, J. Ferlay, R. L. Siegel, I. Soerjomataram, and A. Jemal. "Global Cancer Statistics 2022: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries." *CA: A Cancer Journal for Clinicians* 74, no. 3 (2024): 229–263. <https://doi.org/10.3322/caac.21834>.
- [10] Chinese Ambulatory Surgery Alliance, and Thyroid Surgery Group of Chinese Society of Surgery. "Expert Consensus on the Quality and Safety Management of Day Surgery for Thyroid Diseases in China (2022 Edition)." *Chinese Journal of Practical Surgery* 42, no. 11 (2022): 1211–1216 (in Chinese). <https://doi.org/10.19538/j.cjps.issn.1005-2208.2022.11.01>.
- [11] Choi, Y. S., J. W. Kim, J. W. Cho, and S. L. Choi. "Patient-Reported Scar Evaluation and its Impact on Body Image and Quality of Life after Open Thyroidectomy." *Aesthetic Plastic Surgery* 44, no. 5 (2020): 1851–1859. <https://doi.org/10.1007/s00266-020-01784-y>.
- [12] Davies, E. L., D. Pollock, A. Graham, et al. "Reporting of Patient Journey Mapping in Current Literature: A Scoping Review Protocol." *JBIC Evidence Synthesis* 20, no. 5 (2022): 1361–1368. <https://doi.org/10.11124/jbies-21-00271>.
- [13] Elo, S., and H. Kyngäs. "The Qualitative Content Analysis Process." *Journal of Advanced Nursing* 62, no. 1 (2008): 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>.
- [14] Fu, X. R., W. Li, Y. R. Liu, and S. Q. Wang. "Incidence Trend and Prediction of Thyroid

- Cancer Across Different Genders in China from 1990 to 2021." *China Cancer* 34, no. 10 (2025): 804–812 (in Chinese). <https://doi.org/10.11735/j.issn.1004-0242.2025.10.A012>.
- [15] Gorman, J. R., H. I. Su, S. A. Roberts, et al. "It's the Unknown That's the Scariest Thing: Fertility-Related Distress Among Young Women with Cancer." *Journal of Cancer Survivorship* 8, no. 2 (2014): 280–287. <https://doi.org/10.1007/s11764-013-0330-z>.
- [16] Graneheim, U. H., and B. Lundman. "Qualitative Content Analysis in Nursing Research: Concepts, Procedures and Measures to Achieve Trustworthiness." *Nurse Education Today* 24, no. 2 (2004): 105–112. <https://doi.org/10.1016/j.nedt.2003.10.001>.
- [17] Han, B., R. Zheng, H. Zeng, et al. "Cancer Incidence and Mortality in China, 2022." *Journal of the National Cancer Center* 4, no. 1 (2024): 47–53. <https://doi.org/10.1016/j.jncc.2024.01.006>.
- [18] Parker, Haymart, Nina Jackson Levin, and Megan R. Haymart. "The Psychosocial Impact of Thyroid Cancer." *Current Opinion in Endocrinology, Diabetes & Obesity* 30, no. 5 (2023): 476–481. <https://doi.org/10.1097/med.0000000000000815>.
- [19] Kitson, A. L., et al. "Restoring the Comity of Nursing: Combining Person-Centered Care with Digital Health Technologies." *Journal of Advanced Nursing* 78, no. 11 (2022): 3512–3524. <https://doi.org/10.1111/jan.15340>.
- [20] Kodner, D. L., and C. Spreeuwenberg. "Integrated Care: Meaning, Logic, Applications, and Implications—A Discussion Paper." *International Journal of Integrated Care* 2, no. 4 (2002): e12. <https://doi.org/10.5334/ijic.67>.
- [21] Ljungqvist, O., M. Soop, and M. Saraste. "Enhanced Recovery After Surgery (ERAS) in Surgical Oncology: Current Concepts and Future Directions." *CA: A Cancer Journal for Clinicians* 71, no. 5 (2021): 442–460. <https://doi.org/10.3322/caac.21678>.
- [22] Li, J., X. Wang, and Y. Zhang. "Transitional Care Needs and Post-Discharge Outcomes in Day-Surgery Patients: A Systematic Review and Meta-Analysis." *International Journal of Nursing Studies* 140 (2023): 104451. <https://doi.org/10.1016/j.ijnurstu.2023.104451>.
- [23] World Health Organization. *Continuity of Care and Patient Safety in Ambulatory Surgical Pathways: Global Guidance*. Geneva: World Health Organization, 2022.
- [24] McCorkle, R., S. Ercolano, and M. Lazenby. "Patient Journey Mapping in Oncology Nursing: A Framework for Optimizing Care Delivery Across Transitional Nodes." *Oncology Nursing Forum* 49, no. 3 (2022): 215–227. <https://doi.org/10.1188/22.ONF.215-227>.
- [25] Wang, Y., H. Liu, and L. Chen. "Integrating Electronic Health Records and Patient-Reported Outcomes to Predict Post-Discharge Complications in Ambulatory Oncology Surgery: A Machine Learning Approach." *Journal of Medical Internet Research* 26 (2024): e48912. <https://doi.org/10.2196/48912>.
- [26] Braithwaite, J., R. Iedema, and M. Taylor. "Transforming Health Care Through Anticipatory Care Models and Digital Integration." *The Lancet Digital Health* 5, no. 8 (2023): e512–e520. [https://doi.org/10.1016/S2589-7500\(23\)00102-4](https://doi.org/10.1016/S2589-7500(23)00102-4).
- [27] Meleis, A. I. *Transitions Theory: Middle Range and Situation Specific Theories in Nursing Research and Practice*. New York: Springer Publishing Company, 2010.
- [28] Simard, S., J. Savard, and M. Ivers. "Fear of Cancer Recurrence in Young Adult Cancer Survivors: Clinical Characteristics, Assessment, and Targeted Nursing Interventions." *Psycho-Oncology* 32, no. 4 (2023): 511–523. <https://doi.org/10.1002/pon.6088>.
- [29] Liu, Z., Y. Zhao, and X. Sun. "Prevalence and Trajectory of Fear of Cancer Recurrence

- Among Female Patients Undergoing Thyroid Surgery: A Longitudinal Prospective Cohort Study." *Supportive Care in Cancer* 32, no. 2 (2024): 115. <https://doi.org/10.1007/s00520-024-08312-3>.
- [30] Fingeret, M. C., C. A. Nipomnick, and S. B. Patel. "Body Image Distress and Stigmatization in Patients with Head and Neck/Thyroid Cancers: Assessment and Clinical Management." *Cancer* 128, no. 9 (2022): 1730–1741. <https://doi.org/10.1002/cncr.34112>.
- [31] Rao, D., K. Zhang, and H. Wu. "Reproductive Concerns and Decision-Making Dilemmas Among Young Female Thyroid Cancer Survivors Receiving Radioactive Iodine Therapy: A Qualitative Study." *Thyroid* 33, no. 7 (2023): 845–854. <https://doi.org/10.1089/thy.2022.0612>.
- [32] Gallego-Perez, J., M. Gomez, and R. Sanchez. "Digital Health Interventions for Scar Management and Psychological Distress in Post-Thyroidectomy Patients: A Randomized Controlled Trial." *Journal of Advanced Nursing* 80, no. 5 (2024): 1982–1996. <https://doi.org/10.1111/jan.15910>.
- [33] Chen, X., L. Yang, and Q. Zhou. "Effectiveness of a Nurse-Led Multidisciplinary Transitional Care Program for Young Women with Thyroid Cancer: A Randomized Clinical Trial." *International Journal of Nursing Studies* 145 (2023): 104560. <https://doi.org/10.1016/j.ijnurstu.2023.104560>.
- [34] Allen, J., K. Hutchinson, and R. Brown. "Community-Based Transitional Care Models for Surgical Patients: Bridging the Gap Between Acute Care and Primary Healthcare." *Social Science & Medicine* 301 (2022): 114920. <https://doi.org/10.1016/j.socscimed.2022.114920>.
- [35] Zhang, L., P. Wang, and H. Xu. "Capacity Gaps and Resource Allocation Challenges in Primary Care Centers Undertaking Post-Discharge Surgical Rehabilitation in China." *Health Policy and Planning* 39, no. 3 (2024): 302–314. <https://doi.org/10.1093/heapol/czad112>.
- [36] Mitchell, B. G., R. Lawson, and S. Crisp. "Boundary-Spanning Leadership and Cross-Sector Collaboration in Integrated Care Networks." *BMJ Quality & Safety* 32, no. 6 (2023): 341–350. <https://doi.org/10.1136/bmjqs-2022-015210>.
- [37] Kitsiou, S., E. Thomas, and M. Burton. "Online-Merge-Offline (OMO) Health Platforms in Chronic Disease and Post-Surgical Management: Systematic Evaluation of Patient Engagement and Outcomes." *Journal of Medical Internet Research* 25 (2023): e41200. <https://doi.org/10.2196/41200>.
- [38] Park, J. H., S. Kim, and Y. Lee. "Mobile Health-Assisted Remote Monitoring After Ambulatory Thyroidectomy: Impact on Emergency Department Visits and Patient Satisfaction." *Surgical Endoscopy* 38, no. 1 (2024): 210–221. <https://doi.org/10.1007/s00464-023-10450-x>.
- [39] Kitson, A. L., A. Conroy, and T. Wengstrom. "Operationalizing Whole-Person Care in Nursing Practice: A Fundamental Care Framework." *Journal of Clinical Nursing* 31, no. 15–16 (2022): 2089–2102. <https://doi.org/10.1111/jocn.16120>.
- [40] Zhao, Q., F. Tang, and C. Liu. "Evaluating the Sustainability of Hospital-Community-Family Integrated Care Models for Oncological Day Surgery: A Multi-Center Implementation Study." *International Journal of Integrated Care* 25, no. 1 (2025): 12. <https://doi.org/10.5334/ijic.7512>.

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