

A Qualitative Patient Journey Map of the Ophthalmic Day-Surgery Experience

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Objective: To identify the multidimensional health management needs of ophthalmic day surgery patients, and explore their preferences, adherence behaviors and self-management challenges throughout the care continuum via patient journey mapping, thereby providing targeted insights for optimizing clinical workflows, care services and enhancing care continuity.

Methods: A descriptive qualitative study was conducted from September to November 2024. Semi-structured in-depth interviews were carried out with 22 ophthalmic day-surgery patients and 10 healthcare providers at a tertiary hospital in Hubei Province, China. Collected data were systematically analyzed using content analysis to construct a comprehensive patient journey map for ophthalmic day surgery.

Results: The ophthalmic day surgery patient journey was segmented into five sequential phases along the treatment timeline: diagnosis, preoperative preparation, surgical intervention, postoperative recovery, and post-discharge monitoring. A total of 49 themes were identified across four core dimensions (health management tasks, emotional experiences, clinical pain points, and service improvement opportunities), with key findings including prominent age-related disparities in care experience, persistent preoperative anxiety among patients, insufficient adherence to medication and follow-up protocols, and critical gaps in post-discharge care continuity. Collectively, these themes formed a visualized patient journey map that fully reflects patients' dynamic preferences and self-management barriers across the entire care process.

Conclusion: The health management needs of ophthalmic day surgery patients are dynamic and multidimensionally interrelated across the whole treatment journey, with poor care continuity, weak multidisciplinary collaboration, and low adherence to self-management behaviors being the core clinical challenges. The constructed patient journey map reveals that optimizing age-friendly service design and establishing a continuous care system are the primary service implications for improving patient experience; targeted interventions addressing the above challenges can effectively enhance patients' treatment adherence and self-management capabilities, and further promote the high-quality development of ophthalmic day surgery services with a patient-centered approach.

Keywords: ophthalmic day surgery, patient journey mapping, health management need, qualitative research

Introduction

Day surgery has become an indispensable part of modern healthcare systems in recent years. Day surgery is a patient-centered and efficient healthcare delivery model in which the entire process, from admission to surgery to discharge, is completed within 24 hours, without overnight stays.¹ This model originated in the United Kingdom in the early 20th century and has been widely used due to its advantages of shortening the length of hospital stays, reducing medical costs, and improving bed turnover rates. The number of day surgeries in the United States accounts for 83% of the total surgeries, 79% in the United Kingdom, and 70% in Northern Europe.² There has been relatively mature research and practice regarding the appropriate scope, types of surgery involved, and patient admission criteria.

Patients with ophthalmology frequently have steady vital signs and are in good overall condition. There is little chance of bleeding during or after surgery, and the procedure takes very little time. Local anaesthesia, such as topical and

nerve block anaesthesia, is used for the majority of eye procedures. Ophthalmology is a suitable speciality for the advancement of day surgery because of these benefits.^{3,4} Compared to the traditional inpatient model, adult ophthalmology day surgery has been proven to be a more cost-effective medical option with good treatment outcomes and a low complication rate.⁵

However, it also faces specific challenges. Due to a lack of understanding of the surgery, patients often feel highly anxious before surgery.⁶ The rapid turnover inevitably shortens the preparation and observation time, resulting in less detailed care and rehabilitation guidance.⁷ The elderly population, a significant demographic in ophthalmology, often has hearing loss or communication barriers that impede the delivery of critical information, further complicating care.^{8,9} In addition, coordination between different departments, such as ophthalmologists, anesthesiology, and nursing teams, may not always be seamless, leading to potential delays or inefficiencies.¹⁰ These clinical challenges are closely associated with poor patient adherence to postoperative medication regimens and follow-up protocols, as well as unmet patient preferences for personalized care and accessible health guidance; non-adherence to core self-management behaviors in ophthalmic day surgery has been shown to increase the risk of postoperative complications, reduce visual function recovery efficiency, and even lead to repeated hospital visits, which directly compromise the clinical efficacy of day surgery and the overall patient experience.^{11,12} These challenges highlight the need for patient-centered care.

Patient Journey Mapping (PJM) is a strategic tool to visualize the entire patient experience within a healthcare system, from initial contact to posttreatment follow-up.¹³ It displays the patient's interactions with the healthcare system at different stages through a diagram or flowchart, including their emotions, behaviors, needs, and pain points. It has recently been used in health management fields such as chronic disease management, emergency services, and preventive healthcare. By identifying pain points, improving communication, and supporting data-driven decision-making, healthcare institutions can better design patient-centered care paths, optimize service processes, and improve the patient experience.^{14,15} Despite the widespread application of PJM in healthcare service optimization, existing research on ophthalmic day surgery lacks in-depth exploration based on this methodology, and there remains a critical research gap. The dynamic, multi-dimensional health management needs of ophthalmic day surgery patients across the entire care continuum have not been holistically captured and visualized, and the intrinsic link between clinical care challenges, patient adherence behaviors and care preferences has not been systematically clarified.

Given the unique advantages of PJM in gaining insight into patient needs and optimizing the patient experience, this study aims to fill the above research gap by constructing a comprehensive patient journey map for ophthalmic day surgery patients based on the PJM methodology. This study will conduct an in-depth analysis of patients' dynamic, multi-dimensional experiences and needs across the diagnosis, treatment, and recovery stages. It will explore task-related, emotional, and social dimensions, identify the core pain points affecting patient adherence, preference satisfaction and care continuity, and provide targeted recommendations for optimizing the medical process. It is hoped that this will promote the development of ophthalmic day surgery in a more humane and precise direction, effectively improve patients' treatment adherence and self-management capabilities through optimized service processes, and realize the efficient allocation of medical resources and the enhancement of patient experience and clinical treatment outcomes.

Methods

Study Design

Our PJM approach explores the experiences and needs of both patients and health care providers (HCPs) using a descriptive exploratory qualitative design. No inferential statistical analyses were performed in this study, consistent with the core aims of qualitative research to explore and interpret subjective experiences rather than quantify causal relationships. Consolidated Criteria for Reporting Qualitative Research (COREQ) reporting guidelines¹⁶ were utilized to ensure methodological consistency and promote transparency and replicability for other PJM studies. We detail the PJM methodology used according to the COREQ structure.

Conceptual Framework

This PJM approach draws on the framework of care delivery value chains (CDVC),¹⁷ designed by Rhatigan et al, which views care delivery (and patient value creation) as a holistic system rather than a collection of discrete or independent vertical interventions. The framework divides the disease cycle into six stages to understand, improve, and integrate the range of activities involved throughout the care cycle for any medical condition: 1) Monitoring and preventing (Medical history/Screening/Identifying risk factors/Prevention programs); 2) Diagnosing (Medical history/Specifying, organizing tests/Interpreting data/Consultation with experts/Determining the treatment plan); 3) Preparing (Choosing the team/Preintervention preparations/Pretreatment); 4) Intervening (Ordering and administering drug therapy/Performing procedures/Performing counseling therapy); 5) Recovering (Inpatient recovery/Inpatient and outpatient rehab/Therapy finetuning/Developing a discharge plan); 6) Monitoring and managing (Monitoring and managing the patient's condition/Monitoring compliance with therapy/Monitoring lifestyle modifications). These processes were further adapted to this PJM approach to further understand the experience and needs of ophthalmic day surgery patients at different stages of their lives.

Participants and Setting

Using purposive sampling method, patients who received ophthalmology day care at the eye center of a tertiary hospital in Hubei Province from September to November 2024 were selected as the study population, and in addition, the health care workers of the eye center were also surveyed. The predominant types of ophthalmic day surgeries among the study participants included cataract surgery, glaucoma surgery, vitreoretinal surgery, and ocular surface surgery. Patient Inclusion Criteria: (1) Meets national requirements for ophthalmic outpatient surgery indications with a clinically confirmed diagnosis of ophthalmic disease. (2) Aged ≥ 18 years; (3) Voluntary participation; (4) Ability to understand and communicate verbally or through words. Patient Exclusion Criteria: (1) Concurrent severe systemic diseases, such as severe cardiovascular/cerebrovascular disease or poorly controlled diabetes; (2) Postoperative complications such as infection or corneal edema; (3) Patients scheduled for outpatient surgery but converted to inpatient status due to various reasons (eg., intraoperative complications, anesthesia issues); (4) Hearing impairment causing communication difficulties; (5) History of psychiatric disorders or severe cognitive impairments affecting comprehension, expression, memory, or orientation.

Inclusion criteria for healthcare personnel: (1) Licensed physicians (surgeons, outpatient evaluators) or registered nurses with ≥ 2 years of experience at the hospital's ophthalmology center; (2) Regular participation in ophthalmic outpatient surgery (eg., performing several related procedures weekly or interacting with relevant patients); (3) Possess strong professional communication skills to clearly describe surgical procedures and details of physician-patient interactions; (4) Voluntarily agree to participate in this study. Exclusion criteria: (1) Non-permanent staff such as administrative personnel, residents, or nursing interns; (2) Individuals temporarily suspended from outpatient surgery duties during the study period due to maternity leave, sick leave, or personal leave.

Sample selection considered age, gender, education level, marital status, monthly income, professional title, and years of experience to maximize diversity. Sample size followed the principle of saturation, ceasing data collection when no new information emerged to describe the research topic.¹⁸ Ultimately, 22 patients and 10 healthcare providers participated in this study. Among them, 18 participants completed one face-to-face semi-structured in-depth interview, and 4 patients underwent a second supplementary interview to ensure the comprehensiveness and depth of data collection for complex clinical experiences. Their basic information is presented in [Table 1](#) and [Table 2](#).

Interview Outline

In this study, an interview outline was developed through literature review, team discussions, and pre-interviews. The research team comprised five experts from the fields of ophthalmology, ambulatory surgery, nursing management, and clinical psychology, along with three staff members holding master's degrees in nursing. Based on pre-interview findings, the outline was refined into a structured framework incorporating open-ended questions and specific inquiry strategies designed to guide the conversation. The interview guide first addressed demographic and disease baseline questions to establish a communication context. Participants were then guided to share specific healthcare journeys, behaviors, and

Table I Patient Demographic Data (n=22)

No.	Number of Medical Visits	Prior Eye Surgery	External Hospital Visit	Gender	Age	From Another Region	Distance to Hospital (km)	Education	Marital Status	Number of children	Employment	Living Conditions	Residence	Monthly Income	Payment Method	Medical History
N1	3	Yes	Yes	Female	72	Yes	63	Primary or less	Married	1	Unemployed	With children	Rural	3000 - 5000	Rural Cooperative Insurance	Yes
N2	1	No	Yes	Male	72	Yes	148	High School	Married	2	Retired	Alone	Urban	>5000	Urban Employee Insurance	Yes
N3	3	Yes	Yes	Female	86	No	9.4	Junior High	Widowed	3	Retired	Alone	Urban	3000 - 5000	Urban Employee Insurance	Yes
N4	1	No	No	Female	61	Yes	551	High School	Married	2	Retired	With children	Urban	<3000	Urban Employee Insurance	No
N5	1	No	No	Male	58	Yes	131	College degree or higher	Married	1	Employed	With spouse	Urban	>5000	Urban Employee Insurance	No
N6	2	Yes	No	Male	69	Yes	1997	College degree or higher	Married	1	Retired	With spouse	Urban	>5000	Urban Employee Insurance	No
N7	1	No	Yes	Female	47	Yes	142	Primary or less	Single	0	Employed	Alone	Urban	<3000	Rural Cooperative Insurance	Yes
N8	1	No	No	Male	67	No	70	College degree or higher	Married	1	Employed	With spouse	Urban	>5000	Urban Employee Insurance	Yes
N9	3	Yes	No	Female	55	Yes	228	High School	Married	1	Retired	With spouse	Urban	3000 - 5000	Urban Employee Insurance	No
N10	3	Yes	No	Female	63	Yes	795	College degree or higher	Married	2	Retired	With spouse	Urban	>5000	Urban Employee Insurance	No
N11	1	No	No	Male	63	No	22	High School	Married	3	Employed	With spouse	Urban	<3000	Rural Cooperative Insurance	Yes
N12	2	Yes	No	Female	18	No	13	High School	Single	0	Unemployed	With parents	Urban	>5000	Public Funding	No
N13	2	Yes	No	Male	59	No	37	College degree or higher	Married	1	Retired	With spouse	Urban	>5000	Urban Employee Insurance	No
N14	1	No	No	Female	72	No	6.9	Junior High	Married	1	Retired	With spouse	Urban	>5000	Rural Cooperative Insurance	No

N15	4	Yes	Yes	Male	53	Yes	326	Junior High	Married	2	Employed	With spouse	Urban	3000 - 5000	Rural Cooperative Insurance	Yes
N16	1	No	No	Female	86	No	17	Junior High	Widowed	3	Retired	With children	Urban	3000 - 5000	Urban Employee Insurance	Yes
N17	1	No	No	Male	76	No	0.7	High School	Married	1	Retired	With spouse	Urban	3000 - 5000	Urban Employee Insurance	Yes
N18	1	No	No	Female	53	No	6.1	High School	Married	1	Retired	With spouse	Urban	3000 - 5000	Urban Employee Insurance	Yes
N19	3	Yes	Yes	Male	49	No	65	High School	Married	2	Employed	With spouse	Urban	>5000	Rural Cooperative Insurance	No
N20	1	No	No	Female	60	Yes	186	High School	Married	3	Retired	With spouse	Urban	<3000	Rural Cooperative Insurance	Yes
N21	2	Yes	Yes	Male	71	No	8	Junior High	Married	1	Retired	With spouse	Urban	3000 - 5000	Urban Employee Insurance	Yes
N22	1	No	No	Male	53	Yes	382	Junior High	Married	2	Employed	With spouse	Urban	3000 - 5000	Rural Cooperative Insurance	No

Table 2 Demographic Data for Healthcare Personnel (n=10)

No.	Gender	Age (Years)	Occupation	Professional Title Status	Years of Work	Education	Nurse Level
M1	Female	25	Nurse	Junior	2	Bachelor	N1
M2	Female	28	Nurse	Junior	7	Bachelor	N2
M3	Female	30	Nurse	Intermediate	8	Bachelor	N3
M4	Female	34	Nurse	Intermediate	14	Bachelor	N3
M5	Female	44	Nurse	Intermediate	22	Bachelor	N2
M6	Female	48	Nurse	Intermediate	30	Bachelor	N4
M7	Female	49	Nurse	Intermediate	30	Bachelor	N2
M8	Female	42	Nurse	Junior	21	Bachelor	N1
M9	Female	31	Doctor	Junior	5	PhD	
M10	Female	35	Doctor	Intermediate	10	PhD	

experiences (tasks, emotions, pain points, and improvement areas) based on each stage of the CDVC framework. These questions were phrased neutrally to encourage participants to share personal perspectives and actual experiences without reservation. Throughout the study, the research team dynamically updated this guide based on new insights provided by interview participants. At the conclusion of each interview, participants were invited to add additional comments. The content of the structured interview guide for patients is shown in [Figure 1](#). The interview questions for healthcare providers are as follows: (1) What actions do patients need to take at each stage? (2) What challenges and barriers do patients encounter during the healthcare journey at each stage? (3) What measures do you believe could be implemented to improve existing workflows?

Data Collection

Two researchers with systematic training in qualitative research methods and semi-structured interview skills conducted the data collection via face-to-face semi-structured in-depth interviews. Prior to interviews, researchers introduced themselves to participants, explained the purpose and significance of the study, and established trust. Written informed consent was then obtained from all participants, covering interview recording, data analysis, and the publication of anonymized responses and direct quotes. To protect privacy, researchers used coded identifiers instead of participants' real names in all research records and transcripts. During interviews, researchers centered on the themes, encouraging participants to truthfully state facts and accurately express genuine thoughts while avoiding suggestive or leading questions. Facial expressions, emotional shifts, gestures, and other nonverbal behaviors of participants were observed by the researchers. Clarifications were sought from participants whenever needed, concluding the interview upon reaching data saturation when no new information emerged. Each interview lasted 40 to 60 minutes, was conducted in a quiet and private conference room without other personnel present, and was recorded using a digital voice recorder with dual backup to ensure data security.

Data Analysis

Content analysis was employed to analyze interview data,¹⁹ following a five-step systematic process: familiarization with recordings and texts, developing a classification framework, coding significant statements, abstracting themes from codes, and integrating findings to form an overall framework. Transcripts were produced verbatim within 24 hours post-interview and submitted to participants for verification and revision to ensure the accuracy and authenticity of the content. Two independent researchers with qualitative research experience coded the data using NVivo 12.0 (QSR International: Melbourne, Australia), a specialized tool for qualitative data management and analysis; the researchers first extracted meaningful semantic statements from the transcripts, then assigned initial open codes to each statement, and further clustered initial codes into categories based on semantic relevance and logical connections. These were organized according to the five stages of the ophthalmic day surgery patient journey preliminarily constructed based on the CDVC framework, along with tasks, emotions, pain points, and improvement areas related to health management. To ensure the rigor of the analysis, inter-coder reliability was assessed during the coding process; discrepancies in coding between the

Introduction & welcome

Thank you and welcome

Introduce the research team

Introduce the topic, research questions, and importance

Obtain informed consent for recording the interview results

Opening question

Could you please introduce yourself?

- Please provide your basic information, including gender, age, monthly income, educational background, marital status, employment status, and medical history.
- Briefly describe your symptoms and when they first appeared.

Healthcare Journey and Behavior

(1) Please describe your healthcare journey.

- Identify the step with the longest wait time.
- Which healthcare professionals did you interact with during this process?

(2) What experiences did you have during your medical care? Which events left a lasting impression on you?

- Please list the positive aspects
- Please list any additional challenges or obstacles
- When facing these obstacles, how do you think improvements could be made?

(3) How did you feel about interacting with healthcare staff during your medical visit?

(4) What health management activities did you participate in at each stage of your medical visit?

(5) What were your needs for health management at each stage?

(6) What other needs do you feel were not met?

Closure

Thanks for sharing information and experience

Research team members check the content

Feedback and analysis

Figure 1 The structured interview guide.

two researchers were resolved through group discussion with a third senior qualitative research expert in the team until a consensus was reached. This process yielded comprehensive descriptions, identified similar viewpoints, and resolved all coding disagreements through the aforementioned approach. By integrating the previously developed ophthalmic day surgery patient journey map framework with data and insights from the interviews, the study further mapped the evolving health management needs throughout the patient's disease experience. This was visualized through the journey map using Microsoft Vision 2019. Finally, researchers collaborated with representative interviewees to review themes, discuss enhancements to the map content based on thematic data categories, and ensure its completeness and consistency.

Ethical Considerations

The study was conducted in accordance with the Declaration of Helsinki²⁰ and was approved by the Medical Ethics Committee of Tongji Hospital Affiliated with Tongji Medical College of Huazhong University of Science & Technology, China (approval number: TJIRB202409005). All research procedures strictly complied with ethical requirements; participants were informed of their right to withdraw from the study at any time without any adverse consequences, and all research data were anonymized and stored in a password-protected computer to ensure confidentiality.

Results

This study conducted 22 interviews with patients and 10 interviews with healthcare providers. Eighteen participants were interviewed once each, while participants N2, N11, N16, and N20 underwent a second interview to ensure comprehensive data collection. Building upon the journey framework established through desk research, we delved deeper into interview content. By analyzing 49 themes across four dimensions, tasks, emotions, pain points, and improvement areas. We reconstructed the multifaceted challenges patients face at each stage of their ophthalmic day surgery journey and the emotional shifts throughout their health management process. 49 themes were identified across four dimensions: health management tasks, emotions, pain points, and improvement opportunities. This revealed the multifaceted challenges patients face at each journey stage, emotional fluctuations during health management, and obstacles encountered in accessing quality healthcare. A comprehensive narrative map of patient experiences across these dimensions was developed, forming the Ophthalmic Day Surgery Patient Journey Map (Figure 2).

Journey Framework Construction

Patient journey maps typically feature a horizontal axis (timeline) and a vertical axis (task axis).²¹ Integrating the CDVC framework, this study divides the horizontal axis for ophthalmic day surgery patients into five stages (beginning from the second stage of CDVC, as patients present with pronounced ocular discomfort symptoms upon arrival): Diagnosing (symptom assessment, outpatient examination, definitive diagnosis), Preparing (admission examination, admission assessment, information gathering, surgery scheduling, admission education), Intervening (preoperative preparation, intraoperative anesthesia administration, intraoperative monitoring, postoperative assessment, postoperative care and education), Recovering (discharge assessment, discharge care plan), Monitoring and managing (postdischarge follow-up). The journey framework was preliminarily constructed based on the clinical experience of these patients and routine clinical tasks at different stages. The vertical axis incorporates health management tasks, emotions, pain points, and improvement areas identified in the patient journey based on this study's objectives. It also analyzes the relevant personnel involved in health management at each stage and their coverage span based on interview content.

Diagnosing

Task

Early Symptom Management: Early-stage patients feel unwell but do not know how to handle it, often brushing it off.

- N2: My eyes have been bothering me for two or three years. I could still use my phone and stuff before, but lately they have gotten blurry and tear up all the time. I just figured it's part of getting old, so I did not do anything or take any medicine.
- N14: My eyes felt off for three or four years, but I did not pay attention. It was not until I rubbed them and they started bleeding that I went to the hospital.

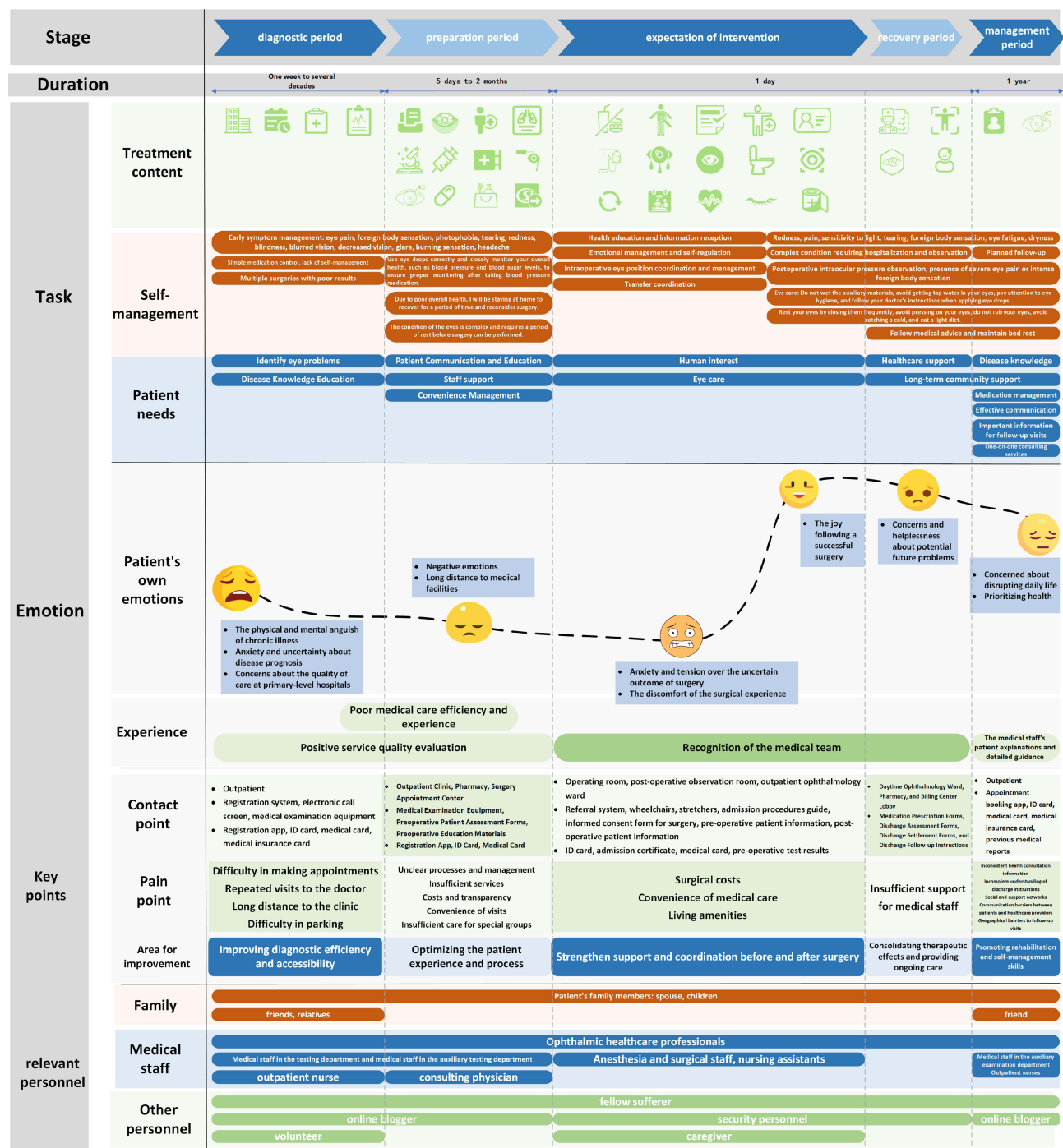


Figure 2 Ophthalmic day surgery patient journey map.

Initial Consultation and Diagnosis: Patients get diagnosed through tests after seeing a doctor, but how long it takes varies.

N1: My eye was swollen and hurting, and I could not see at night. The surgery back home did not help, so I switched hospitals. I had a bunch of tests there, and it took about a week to get a diagnosis.

N5: I get a regular check-up and an eye exam every year. Two years ago, they figured out my eye problem in just half an hour.

Multiple surgeries and cross-hospital consultations: Some patients need multiple surgeries or to go to different hospitals because their condition is complicated or the first surgery did not work.

- N19: My eye problem came from an injury. I have been using medicine for over ten years to keep it in check. This year, the doctor said I might go blind if I do not get surgery. I was treated at another hospital before, and now I am following up here and getting ready for surgery.
- N21: I had cataract surgery before, but then I got macular issues. When they checked me before the next surgery, they found my heart was off, so I had to get heart surgery first. The cataract surgery I had somewhere else did not turn out well.

Emotions

Physical and mental strain from chronic illness: Patients are stressed out both physically and mentally because of pain and losing their eyesight.

- N1: My eye's been swollen, hurting, and I cannot see at night for over a year. The surgery back home did nothing, so I feel terrible physically and get so annoyed.
- N3: Family Member: They got glaucoma seven years ago, and the symptoms are really bad. They have been suffering for so long and are always in a bad mood.

Anxiety and uncertainty about disease prognosis: Patients worry about getting better, if it will come back, and feel unsure about everything.

- N20: My vision got blurry last year, and it's worse this year. The county hospital said it was cataracts, but when I went to another hospital, they said I have glaucoma and need surgery. I am worried how the surgery will go and what problems might pop up after.
- N11: I am scared I will go blind. Who's going to take care of me when I am old? I am so anxious and do not even know if this can be fixed.

Concerns about primary care hospital treatment: Patients do not trust small hospitals' skills or processes, so they'd rather go to big ones.

- N2: My family does not trust small hospitals to do eye surgery. They say eyes are too important, and small hospitals are not reliable. I also think their skills are not good enough, so I came here instead.
- N4: I got checked at a city hospital, but their diagnosis and treatment seemed unprofessional. I did not even get treated there; I came straight here.

Pain Points

Insufficient Self-Management and Health Literacy: Patients do not know much about their symptoms or how to take care of themselves.

- N2: My eyes started bothering me two or three years ago, but I thought it was just old age. I only used some eye drops, but I had no idea how to take proper care of them.
- N16: I had symptoms years ago, but I just bought eye drops randomly and used them. I did not know I needed to see a doctor or that there's a right way to use medicine, now my eyes are worse.

Complex and Difficult Registration Process: Registering is a hassle and hard to do, which slows everything down.

- N17: I did not know there were easy ways to register. I had to ask a bunch of people to figure out how to do it, and it wasted so much time.
- M3: Patients do not know about online registration or how to use the self-service machines. Old people who need senior citizen appointments have to wait in line, and they are always complaining about how hard it is to register.

Repeated Medical Visits: Patients have to go to the hospital multiple times because their condition comes back or the diagnosis is not clear, which takes a lot of time and energy.

- N1: The surgery back home did not work, so I switched hospitals. I had to take so many tests there to get a diagnosis, and now I have to go back for follow-ups. Running back and forth is tiring and such a hassle.
- N9:

I had LASIK in 2003. My eyes started having problems two or three years ago, and I went to a bunch of hospitals. Finally, someone recommended this place, and it was such a pain to get here.

Poor Accessibility: The hospital is far away, transportation is inconvenient, and parking is a nightmare.

M6: They have to take a long train ride for day surgery, so they have to arrive a day early and find a place to stay near the hospital, which is really inconvenient.

Areas for Improvement: Enhancing Diagnostic Efficiency and Accessibility

- N1: After I switched hospitals, it took a week to get diagnosed, and some tests made me wait. I hope results come faster so I can get diagnosed and treated sooner.
- N5: It did not take long for me to get diagnosed, but I saw how complicated the tests are for others. I wish they'd simplify the process so people do not have to run around so much.
- M6: Day surgery patients have to wait in the same line as regular patients for tests, so we should create a green channel for them. We have to take photos of special test results and send them to a group chat; if we could connect the systems so doctors can see them directly, it would be faster.

Preparing Tasks

Follow treatment protocols: Patients have to finish surgery bookings, insurance registration, etc., and some need to keep communicating back and forth.

- N10: I had the check-up on May 10th, then went home waiting for the surgery call. I had to put off the surgery because of family stuff. Since registering was such a pain, I had to stay up midnight to grab a slot.
- N20: I booked a specialist appointment, and they said I needed surgery. I paid the fees, but could not get blood drawn that afternoon. The doctor said I could do it during surgery. Then later they said I needed a heart check. I kept calling, but no one picked up, so I had to run back and forth multiple times.

Home Preparation: Patients have to put eye drops as the doctor says before surgery and keep their other illnesses in check.

- N14: They told me on July 14th that my surgery was on the 25th. I administered eye drops daily until the day before surgery and was very worried that it might interfere with the procedure.
- N7: After the check-up, I waited at home for a week. Three days before surgery, I started putting eye drops like the doctor said. But my blood pressure was too high, so they canceled the surgery. I went home to get my blood pressure down, kept using the eye drops, and rebooked once it stabilized.

Surgery Delay Risk: Some patients have their surgery put off or canceled because of their body's numbers or missed checks.

- N7: My original surgery got canceled cause my blood pressure was too high. I went home to control it, then rebooked.
- N11: First check on June 5th showed my eye pressure was too high. I took medicine to lower it, then went back on the 11th. But I wanted to see a specialist, so I spent ages grabbing an appointment. After numerous examinations and evaluations, I finally underwent surgery on June 25th, which took more than a month to complete.

Emotions

A mix of negative emotions: Patients get anxious and annoyed 'cause the process is long, they wait forever, and worry about how the surgery will go.

- N15: I traveled from another city, transferring between four buses and trains, and the journey took three to four hours. Sometimes there are too many patients, so I miss the last trip home. The cost and hassle of coming here make me so frustrated.
- N7: The whole process was stressful. When they canceled the surgery "cause of my blood pressure", I got even more nervous. My blood pressure went up and down with how I felt, and only calmed down when I walked into the operating room.

Positive Feedback on Quality Service: Patients are really happy when medical staff are nice and talk to them patiently.

- N16: My family member has hearing difficulties, but the staff communicated with them patiently and explained the condition repeatedly, demonstrating great responsibility. I am so grateful, I even recommended this place to friends.
- N1: Yeah, I had to wait, but the staff were nice and answered all my questions patiently. It made me feel at ease.

Pain Points

Cumbersome Diagnostic Process: Patients have to go back and forth between different locations for examinations and registration, which is a significant waste of time and energy.

- N17: I booked a specialist, but the checks took 5 hours! Everything was messy and disorganized, the waiting rooms were packed, and I had to go up and down different floors for tests. I am from out of town, so I had to stay for four days, and the cost was very high (sighs).
- N14: They said on July 14th I'd have surgery, but it was on the 25th. I had to come to the hospital 4 times in between "cause the process was unclear and such a hassle".

Insufficient Convenience Services: Things like guidance and test bookings are inconvenient, often making patients late.

- N18: The hospital is huge, and the areas aren't marked clearly. It was my first visit, and I could not find the examination room as no one offered assistance. Wish someone could show me the way.
- N17: No one told me the order of the tests, so I just followed the crowd to queue. Follow-up appointments, queuing for numbers, and registration are all combined in one area, leading to chaos and considerable time wasted.

Insufficient care for special groups: Old people and out-of-town patients cannot use smart phones or understand the process, and no one helps them specifically.

- N2: I am 70 years old and cannot book or pay online, so I have to rely on my children. I must come one day in advance. As out-of-town individuals, we face significant travel difficulties, and dedicated services for older adults are needed.
- N8: I am elderly and unable to use online services or machines, so I have to wait for staff assistance. Fortunately, I have family members with me; otherwise, I would not be able to see the doctor at all.

Areas for Improvement: Optimizing the Patient Experience and Processes

- N13: Even during my hospital stay, I still need to pay for a specialist appointment to obtain medication, which is unreasonable. It is hoped that hospital expenses can be directly covered by insurance to simplify the process.
- N17: Wish they'd give me a list of what tests to do when I check in. They should make the wards clearer, add more signs, or have people guiding us.
- M7: The wards are too small, and various types of patients are accommodated together without separation. We staff do not have time to explain things to patients. Suggest putting patients with the same doctor together, so we can talk to them all at once and make the experience better.

Intervening Tasks

Surgical Cooperation: Patients have to hold the position the doctor says and cooperate with the operation.

- N6: The surgery took almost two hours. When they were stitching, I was scared to move in case it went wrong. After the anesthesia wore off, I just had to bear the discomfort.
- N7: The surgery was about 20 minutes. When they put the lens in, it hurt a little. I'd heard it might be uncomfortable, but I cooperated fully, and felt okay after.

Emotional Management & Self-Regulation: Patients have to calm themselves down to get rid of bad feelings.

- N2: At first, I was nervous during the eye surgery, but then I trusted the doctor and relaxed a bit. Felt better after it was over.

N20: I was extremely nervous during the surgery, feeling unable to breathe and with stiff fingers. I took deep breaths and trusted the doctor, which provided some relief.

Accepting Postoperative Care Education: Patients need to understand how to take care of themselves after surgery.

N19: After surgery, the nurse told me how to use the eye drops and when to come back. She said putting the ointment is hard, so to ask for help if I need it. I did what she said at home, and asked if I had questions.

N16: The staff explained how to take care of my eye, when to follow up, and what to watch out for. I took notes and asked right away if I did not get something.

Emotions

Anxiety and tension regarding surgical outcomes: Patients are not sure how it will go, so they get anxious.

N20: I was deeply worried that the surgery might go wrong because eyes are extremely important. Even when entering the operating room, I remained nervous, fearing that my vision would not improve.

N7: Before the surgery, I was nervous about the pain and if it'd work. Hearing other people's stories made me more anxious, my blood pressure even went up "cause of nerves". Only relaxed once the surgery started.

Discomfort-related emotions: Some patients feel bad during or after surgery "cause they're uncomfortable"

N6: The surgery lasted a long time, and I felt hot and nauseous during the procedure. After the anesthesia wore off, the pain was severe, making me fully aware of how terrible illness can be.

N19: I had to stay in the hospital for the second surgery. I could not put the ointment on by myself, and when I called the nurse, I had to wait ages. No one helped when my eye felt bad, which made me so annoyed.

Trust in medical team: Patients trust the staff when they are nice and good at their jobs.

N16: The staff talked patiently to my hearing-impaired family member, and the surgery was done carefully. I trust them, so I recommend this place.

N10: When I went back for follow-up, the doctor explained why my vision was up and down clearly, and told me what to do. They seemed really professional, so I believed them.

Calm mindset: Some patients stay calm "cause they've had surgeries before or trust the staff".

N15: I have undergone numerous surgeries, so I know that nervousness does not help. I focused solely on recovering and followed the staff's instructions.

N22: The checks and surgery went smoothly. I was not nervous at all, trusted the doctor, and did everything they said for aftercare and follow-ups.

Pain Points

Financial Burden: Patients spend a lot on surgery, travel, and other stuff.

N15: As I am from out of town, I have to bear the costs of transportation, examinations, and surgery. My family has an average income, so this imposes a significant financial burden.

N6: The special artificial lens is not covered by insurance. I did not want to wait, so I had to pay for it myself. It cost a lot, and it hurts to spend that much.

Insufficient Convenience: Out-of-town patients have trouble traveling, and multiple checks mean more trips back and forth.

N2: I am from out of town, so I have to come a day early for consultations. My family comes with me, and finding a place to stay is a hassle.

N15: I need to transfer between multiple buses and trains to reach the hospital, and the journey takes a very long time. Sometimes, due to the large number of patients, I cannot see the doctor on the same day and have to make an additional trip.

Inadequate Living Support: The hotels near the hospital are bad, making daily life hard.

N20: I stayed at a nearby hotel before and after the surgery, but the accommodation was dirty and located in a poor area. I could not find any decent place to stay.

- N17: I stayed 4 days “cause I’m from out of town”. The hotels nearby are either too expensive or gross, and there’s nowhere good to eat.

Areas for Improvement: Strengthen Pre- and Post-Operative Support and Coordination

- N19: After surgery, when I call the nurse to help with the ointment, I always have to wait. Hope they come faster to make the service smoother.
- N18: The hospital is very large, so I easily get lost when going for examinations. It is hoped that someone can guide patients before and after surgery to ensure a smooth process.
- M6: The checks before and after surgery, and explaining things to patients, do not connect well. Suggest we work better between departments, assign someone to explain the process, make the instructions clearer, and make sure we follow up with patients.
- M7: Patients have so many questions, but we nurses are too busy to answer right away. It is suggested that more staff be hired or a dedicated communication mechanism be established to assign specific personnel to address patients’ questions.

Recovery

Tasks

Self-Observation and Reporting: Patients have to watch their eye condition and tell the doctor right away if something’s wrong.

- N10: After returning home, I noticed redness at the corner of my eye. I immediately informed the doctor and followed their advice by monitoring the condition and using the prescribed medication.
- N11: The doctor said the first three months after surgery are when it stabilizes. I cannot get my eye wet or lift heavy things. I check it every day, and if something’s wrong, I am ready to tell them.

Implementing Care Plan: Patients have to take care of themselves and go to follow-ups like the doctor says.

- N7: When I left the hospital, the doctor gave me eye drops and said to come back in a week. I used the drops on time and went to the follow-up.
- N19: The doctor advised me to attend regular follow-up appointments. I can administer the eye drops independently, but applying the ointment is difficult, and I wish a nurse could provide assistance. Nevertheless, I still attend all follow-up appointments on time.

Establishing Care Support System: Patients need someone to help take care of them.

- N10: I wanted my kids to take care of me after surgery, but they are busy. We help each other, and I will tell them if I feel bad.
- N8: My spouse will take care of me when I get home, helping me obtain medication and reminding me to use the eye drops. I feel safe with their care.

Emotions

Joy over successful surgery: The surgery goes as well as expected, and patients are happy.

- N17: During the follow-up visit, their vision had improved significantly, allowing them to see clearly. The entire family was overjoyed.
- N16: When the bandage was removed, their vision had improved greatly, enabling them to see distant objects. We are very happy and look forward to the surgery on the other eye.

Concerns and helplessness about long-term recovery: Patients worry about getting better slowly, or feel stuck “cause it’s hard”.

- N10: My vision goes up and down after surgery. I know the doctor left a little myopia on purpose, but I still worry it will get worse.
- N19: My eye condition is complex, so I underwent three surgeries within a short period. Applying the ointment is extremely challenging, and I am concerned about the subsequent recovery.

Pain Points

Insufficient continuity of care support: Patients cannot get help fast after leaving the hospital.

- N19: My family was not with me in the hospital. I could not put the ointment on right, and when I called the nurse, I waited forever. It's so hard to get help.
- N4: When I went to get my medicine, they said I did not have the prescription. If they'd told me or given it to me when I left the hospital, I would not have to run back. The care after discharge is so messy.

Areas for Improvement: Consolidating Treatment Outcomes and Sustained Care

- N15: Joining the patient group was helpful for asking questions. Hope there are more ways like that, and someone reminds us about follow-ups regularly.
- N10: I do not know if the weird stuff with my eye is normal. When I ask, I have to wait for an answer. Wish I could get help fast and get detailed reminders.
- M7: Patients always forget to take their medicine or go to follow-ups. Suggest we tell them over and over when they leave, then call them later to remind them, and give advice that fits their situation.
- M6: There is a WeChat group for day surgery patients, but it only remains active for one week. This duration is too short, and the group should be maintained until all follow-up appointments are completed. Send them eye care and medicine reminders regularly, and explain things based on their specific illness.

Monitoring and Management

Tasks

Follow-up visits as prescribed: Patients have to go to follow-ups on time and tell the doctor how their eye is doing.

- N2: The doctor said come back in two weeks and then a month. I do not live here, so every time I have to take the train and plan ahead. Scared I will miss the train, so I just try my best to be on time.
- N8: Had to go back the day after surgery for a check, and another one later. Traveling back and forth in the heat is a hassle, but the doctor said I have to. Afraid it will mess up my recovery, so I go no matter what.

Long-term Home Care and Self-Management: Patients have to take care of their eye every day and use medicine like the doctor says.

- N11: After returning home, I followed the doctor's instructions by using the eye drops, resting adequately, avoiding eye contact with water, and refraining from lifting heavy objects. Gonna be careful for three months, scared it will not heal well.

Daily Life Adaptations: Patients have to change their daily routine based on how they are healing.

- N15: I run a business, so I have to keep working after surgery. It is hot, and I am worried that sweating might cause eye infection, so I exercise extreme caution while working.
- N22: My wife cannot move around much, so I have to put my own eye drops and remember follow-ups. I have to wait until my son's tutoring is over to go with me. I avoid things that strain my eyes and take it slow to get used to it.

Emotions

Concerns about daily life impact: Patients worry their eye will mess up their work and life.

- N15: My family relies on my business for income. I am afraid that poor recovery will lead to loss of income, so I remain anxious while working.
- N2: My son wants me to move to his city, but I have to come back every two weeks for follow-ups. Worried the trip is too much, and if something goes wrong there, no one can help.

Reassurance from Medical Guidance: Patients feel better when staff explain things patiently.

- N10: I joined the patient WeChat group, so I can ask questions. During follow-up visits, the doctor patiently explains the precautions, and their guidance provides me with reassurance.
- N16: Asked the nurse if I could wipe my eye with tissue. She said use clean cotton swabs and told me how to do it. Now that I know, I feel more secure.

Heightened Health Awareness: Patients care more about their eye health after surgery.

- N10: After I left the hospital, I looked up how to take care of my eye and talked to other patients. I am way more careful with my eyes now, scared something else will go wrong.
- N5: I read the discharge instructions carefully, wrote down what to watch out for and when to follow up. Did everything they said to get better fast.

Pain Points

Inconsistent Health Advice: Different staff give conflicting advice, which confuses patients.

- N16: I asked the doctor if I could use a tissue to wipe my eye, and they recommended using a cotton swab instead. Then I asked the nurse for a cotton swab, and they said a tissue was fine. I do not know who to listen to, and I am scared I will get an infection.
- N19: The doctor prescribed a bunch of medicines, and sometimes I forget how to take each one. When my eye feels weird, I ask in the WeChat group, but the staff are always too busy. I just wish they'd reply quickly and tell me if I need to come to the hospital. Additionally, the answers provided by staff are inconsistent; some say I do not need to return for follow-up, while others advise me to do so. The conflicting stuff makes it impossible to decide.

Incomplete Understanding of Discharge Instructions: Patients do not get clear instructions on how to take care of themselves or use their medicine.

- N20: When I left the hospital, the doctor spoke quickly and quietly, so I missed half of what was said, and no detailed written instructions were provided to take home. I am old, so I forget things easily, and now I have no idea how to take care of my eye.
- N19: The doctor never clearly explained how much of each medicine to take or when. I just stare at the medicine boxes at home confused, and I can only ask in the group chat. I wish they'd explain it better when I leave.

Insufficient online support and communication barriers: Patients do not have enough help, and it's hard to reach staff quickly.

- N22: My wife is unable to assist, and my son is busy with tutoring, so I have to handle follow-up appointments and eye drop administration independently. When something goes wrong, there's no one to ask for advice.
- N16: I tried calling the staff for help, but the landline never gets answered. If there's an emergency, I cannot reach anyone. I wish there was an easier way to get in touch.

Geographical barriers to follow-up visits: Out-of-town patients have trouble with travel and finding places to stay.

- N2: Every time I come for a follow-up, I have to take the train and stay in a hotel near the hospital the night before. It costs a lot and is such a hassle. I wish the hospital was closer to my home.

Areas for Improvement: Promoting Recovery and Self-Management Skills

- N10: We hope the hospital can provide detailed care materials. Video tutorials would be particularly helpful as they are easier for older adults to understand. Also, it'd be great if we could reach someone quickly when we have questions.
- N2: I do not live here, so every follow-up is a big hassle. It'd be awesome if out-of-town patients could get priority appointments or earlier tests. Simple follow-up appointments could be conducted online to save patients from unnecessary travel back and forth.
- M7: A lot of patients forget the discharge instructions right away. I suggest we tell them over and over when they leave, and give them a sheet with pictures to take home. Furthermore, calling patients to send reminders later would also be beneficial, helping them better manage their post-surgery care.

Discussion

This study constructs a patient journey map for ophthalmic day surgery patients based on the CDVC framework. It organizes the journey into five sequential phases (Diagnosing, Preparing, Intervening, Recovering, and Monitoring and Managing) along the horizontal axis, while mapping tasks, emotions, pain points, and improvement opportunities along the vertical axis, systematically identifying 49 health management themes. This visualization clearly outlines patients'

behavioral logic and emotional fluctuations across all treatment stages, while defining key stakeholders and their roles at each phase. It provides empirical evidence for dynamically matching medical resources and optimizing service workflows.²² Pain points identified in the Diagnosing phase, such as lengthy examination queues and inconveniences for out-of-town patients, highlight efficiency bottlenecks from sharing diagnostic resources between day surgery and general patients. Challenges in the Preparing phase, including elderly patients' difficulties with smart device operation and unclear process understanding, indicate a need for enhanced age-friendly service provision. Issues in the Monitoring and Managing phase, such as heavy transportation burdens for follow-ups and delayed consultation responses, expose gaps in continuity of care. This aligns with Bulto et al's perspective that journey maps can identify touchpoints, bottlenecks, and optimize patient-centered care,²³ providing direct reference for hospitals to design differentiated services, such as establishing green channels for outpatient surgery examinations and assigning dedicated patient navigators.

This study reveals that health management needs for ophthalmic day surgery patients span the entire treatment journey and dynamically evolve with disease progression, exhibiting a multidimensional interplay characterized by physiological needs as the foundation, psychological needs as the priority, and social support as the supplement. Almidani's research similarly highlights that adults with visual impairments face greater barriers in accessing healthcare, ultimately leading to severe negative health impacts, including psychosocial consequences.²⁴ At the physiological level, patient needs revolve around restoring ocular function throughout the journey. These needs range from symptom recognition and diagnosis during the Diagnosing phase, to surgical cooperation and pain management during the Intervening phase, to self-care and complication prevention during the Recovering phase. Psychologically, anxiety permeates the entire journey. Preoperative anxiety stems from uncertainty about surgical outcomes, such as fear of blindness and skepticism about primary care capabilities. Intraoperative anxiety arises from procedural dread, such as tension-induced blood pressure fluctuations. Postoperative anxiety shifts toward concerns about long-term recovery, such as anxiety over fluctuating vision. Notably, these persistent negative emotional states and the information asymmetry behind them are key factors that directly reduce patients' willingness to implement self-management behaviors and further lead to poor adherence to postoperative medication and follow-up protocols, which are the core adherence problems identified in the study results. Socially, challenges include transportation and accommodation burdens for out-of-town patients, lack of caregiving support for elderly patients, and post-operative adaptation to work and daily life, further complicating care. Due to the eye's sensitivity and critical function, patients demand higher trust thresholds for medical technology and stricter adherence to nursing details, such as precise post-operative medication and ocular hygiene.²⁵ Additionally, some patients experience information gaps, which diminish postoperative comfort.¹² This information gap not only exacerbates patients' psychological anxiety but also directly leads to their incomplete understanding of discharge instructions and incorrect medication use, which are important manifestations of low adherence to patient health management behaviors. This indicates healthcare providers should transition from experiential guidance to evidence-based education, delivering personalized instruction tailored to patient characteristics like age and literacy level such as creating illustrated manuals and video tutorials while leveraging smart tools like medication reminder apps to enhance patient self-management. The above targeted interventions can directly improve patients' cognitive level of postoperative health management, thereby effectively enhancing medication adherence and follow-up compliance, and further improving patients' active engagement in the whole process of treatment and recovery.

This study's emotional analysis reveals that negative emotions are the core factor affecting the healthcare experience of ophthalmic day surgery patients. These emotional fluctuations are closely linked to information asymmetry and inadequate communication. During the Diagnosing phase, patients experience irritability due to prolonged wait times for test results, which fundamentally stems from anxiety about the unknown progression of their condition. In the Preparing phase, patients facing surgery delays become increasingly anxious due to delayed communication feedback, reflecting insufficient attention to patients' psychological states by healthcare providers. During the Monitoring and Managing phase, patients become confused by conflicting explanations from different healthcare providers, highlighting deficiencies in multi-team communication and coordination. Notably, emotional issues are more pronounced among elderly and out-of-town patients: the former experience helplessness due to difficulty understanding procedures, while the latter feel heightened anxiety from unfamiliarity with the out-of-town healthcare setting. This aligns with Zhang et al's findings that

preoperative anxiety and information gaps are common among ophthalmic day surgery patients.¹¹ Additionally, some patients conceal negative emotions, such as feigning ease postoperatively, to spare family members worry, further complicating psychological intervention. Therefore, healthcare providers should integrate emotional assessment into routine care protocols. This involves establishing an empathy-based communication model through one-on-one preoperative counseling, real-time psychological support during surgery, and regular postoperative emotional follow-ups. Simultaneously, peer support mechanisms like patient mutual-aid groups can be leveraged to alleviate anxiety and enhance treatment confidence through shared experiences. The improvement of patients' emotional experience can effectively enhance their trust in the medical team and their initiative in cooperating with treatment, which is a crucial psychological basis for improving patients' adherence to health management behaviors and active engagement in follow-up care.

This study identified significant gaps in continuity of care for ophthalmic day surgery patients during the monitoring and management phase, primarily manifested in three issues: unclear discharge instructions, inconvenient out-of-area follow-ups, and delayed follow-up responses. Some patients experienced suboptimal care due to unclear medication details or lack of knowledge about managing abnormal symptoms; out-of-area patients often lost follow-up contact due to high travel costs and scheduling conflicts. Regarding multidisciplinary collaboration, when preoperative examinations revealed underlying conditions like hypertension or cardiac abnormalities, the transition to eye surgery was often disjointed, creating risks of treatment process gaps. For instance, patients might need to transfer departments for primary condition management before rescheduling their eye surgery. These issues expose the limitations of the current day surgery management model, which prioritizes intraoperative care over postoperative care and single-department focus over collaboration.

Based on the frequency and clinical impact of identified pain points, ophthalmic day surgery care improvement opportunities are prioritized into three tiers with specific measurable interventions and a phased implementation strategy is adopted to ensure feasibility for clinical practice and future research. Core urgent improvements focus on care continuity and include developing a standardized discharge guidance kit with 100% one-on-one explanation and patient confirmation, extending the patient WeChat group for at least 3 months with a 2-hour working-hour response time, establishing a phased postoperative telephone follow-up system at 1 day, 1 week, 1 month and 3 months post-discharge and providing in-home guidance for elderly patients. Key optimization items target service efficiency, such as setting up a dedicated green channel to shorten preoperative examination time to within 4 hours, assigning navigators for 100% on-site guidance for elderly patients over 65 in smart medical operations and providing paper versions of electronic medical documents for them, and creating expedited pathways and offering accommodation and transportation assistance for out-of-town patients. Long-term construction items center on systemic multidisciplinary care, which involves forming a fixed multidisciplinary team for 100% preoperative joint assessments of patients with underlying diseases, clarifying intraoperative handover and sharing postoperative records to break departmental silos, and building a cooperative network with primary medical institutions in other regions to achieve interconnected examination and follow-up data. All measures requiring resource investment are rolled out in phases by prioritizing core urgent items with low input and quick results, then implementing key optimization items gradually and advancing long-term construction items in line with regional medical development plans.

Limitation and Future

This study has the following limitations: Firstly, the sample was sourced from a single tertiary hospital in Hubei Province, which limits the generalizability of findings due to regional healthcare model differences. Secondly, data collection relied on retrospective interviews, with potential information inaccuracy caused by memory bias. Finally, family caregivers' subjective experiences were not included, failing to fully reflect the interaction among patients, caregivers and the medical team. For future research, quantitative research methods should be integrated to conduct triangulation verification with patient-reported outcome measures for the subjective emotional experience and adherence behaviors identified in this study, and longitudinal interventional studies should be carried out to quantitatively evaluate the impact of journey map-informed optimization strategies on patient-reported outcomes and healthcare service efficiency. In addition, subsequent research will expand the sample to multi-center and multi-level medical institutions

across different regions to improve the generalizability of findings, and incorporate family caregivers' subjective experience to comprehensively explore the interaction mechanism among patients, caregivers and medical teams. We will further explore the influencing factors of ophthalmic day surgery nursing experiences and establish a sustainable patient-centered service optimization mechanism to continuously improve healthcare service quality and patient experience.

Conclusion

Based on the CDVC framework, this study used semi-structured interviews and content analysis to develop a five-stage patient journey map for ophthalmic day surgery, identifying 49 health management themes that capture patients' task challenges, emotional shifts and core pain points. Findings show patients have phased multidimensional needs, focusing on ocular function recovery physiologically, experiencing persistent anxiety psychologically and facing social burdens like out-of-town treatment and insufficient care support. Current care gaps include poor continuity, weak multidisciplinary coordination and inadequate special population support. This study clarifies the link between dynamic patient needs and adherence via visual mapping, highlighting improved medication and follow-up adherence as the core optimization goal tied to resolving information asymmetry and enhancing care continuity. Clinically, institutions should prioritize standardized discharge guidance, expand digital follow-up through communication groups and telephone check-ins and build age-friendly systems with multidisciplinary collaboration mechanisms to boost patient self-management and advance patient-centered care.

Data Sharing Statement

The datasets used or analyzed during the current study are available from Ying Wang upon reasonable request.

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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

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