Research Progress on Patient Journey Mapping in the Field of Nursing

Fei Chen

Yunnan Open University, Kunming 650032, Yunnan, China

Abstract: In recent years, improving patients' medical experience has become increasingly prominent in medical activities, and patient experience has become the core of medical service models. As an emerging visualization tool for exploring patient experience, patient journey mapping has been increasingly applied in the field of medical and health services, with unique advantages in exploring patient experience. This study reviews the overview, content and types, application and effects in the nursing field, and presentation methods of results of patient journey mapping, aiming to provide reference for improving patient experience.

Keywords: Patient journey mapping; Patient experience; Nursing management

1. Introduction

In recent years, with the release of the Action Plan for Further Improving Nursing Services (2023–2025), China's medical services have entered a new stage targeting at enhancing patient experience and improving medical consultation feelings [1]. To focus on the growing diversified nursing service needs of the people, further improve nursing services, and continuously enhance patient experience, medical technologies, products, and processes related to patient experience will help promote the development of modern medical service models. Patient journey mapping is a novel visualization tool, referring to a series of events triggered when patients first have medical and nursing needs, including the experiences, emotions, behaviors, and emotional status of individuals and/or nursing staff, family members, and/or caregivers throughout the process of discovering symptoms, diagnosis, treatment, and rehabilitation [2]. It helps identify key difficulties to improve patient experience [3]. The interactions and cognitive changes between patients and medical staff during the medical journey can help researchers identify "moments of truth", touchpoints that greatly affect patient experience and find the real factors and gaps influencing patients' medical experience [4,5]. Relevant research on patient journey mapping has been carried out in many foreign countries, and domestic scholars have also begun to apply this tool in the development of chronic disease health management service systems [6–11]. This paper will review its overview, content and types, application

and effects in the nursing field, and presentation methods of results, providing reference for its application and development in China's nursing field.

2. Origin and development of patient journey mapping

Journey mapping was first used by CROSIER in market research and service design. It is a method and tool to explore the relationship between consumers' shopping experience or product use experience and emotional experience. It promotes product optimization through data analysis to improve consumer experience [12]. Due to its ability to integrate multi-source data and derive the characteristics of events in different scenarios and time points, it has gradually been applied in the medical field [13]. At present, there are various concepts of patient journey mapping. Curry et al. defined the patient journey as "a patient-centered activity, the entire process of patients receiving services in the medical system" [14]. Barton et al. described it as "the trajectory of behaviors taken by patients at different stages of the disease, usually including diagnosis, management, and interaction with health professionals" [15]. In general, patient journey mapping is a patient-centered project aimed at generating a visual or descriptive map trajectory by recording elements during the patient's medical process, so as to better understand the obstacles, facilitating factors, experiences, emotions, behaviors, and emotional status of individuals and/or nursing staff, family members, and/or caregivers throughout the process of discovering symptoms, diagnosis, treatment, and rehabilitation, and further identify key difficulties to improve patient experience.

3. Content and types of patient journey mapping

3.1. Content of patient journey mapping

The patient journey consists of 3 stages, 12 steps, 4 key clues, and 3 core elements. The 3 stages are: diagnosis stage, treatment stage, and follow-up stage. The 12 steps are: consultation, examination, diagnosis, referral, treatment plan selection, pre-treatment preparation, initial treatment, stable treatment plan, monitoring, maintenance treatment, treatment termination, and rehabilitation. To fully understand the patient journey, 4 key clues can be adopted: timeline, disease line, task line, and emotional line. The timeline helps understand the development of the journey over time, the disease line focuses on the progression of the disease and its impact on treatment, the task line focuses on the tasks and behaviors that patients and medical staff need to complete at each step, and the emotional line mainly reflects the changes in the emotional experiences of patients and medical staff over time. In addition, we must also pay attention to 3 key elements: behaviors, perceptions, and emotions. Behaviors include specific actions taken by patients and medical staff during the journey, such as compliance with medical advice and medication use; perceptions include the understanding and expectations of patients and medical staff on the disease and treatment; emotions describe the emotional experiences of patients and medical staff at different stages and steps, such as anxiety and satisfaction.

3.2. Types of patient journey mapping

According to different patient journeys, there are currently 5 types of journey mapping:

(1) Psychological (cognitive) model mapping, which can display a visual analysis of the possible cognitive process changes of patients in interaction with medical staff during the medical process.

(2) Medical experience mapping, used to show the overall experience of patients' medical activities.

(3) Patient journey mapping, which can show the interaction process between patients, medical activities, and medical staff.

(4) Service blueprint mapping, mainly showing experiences from a system perspective, as well as the relationship between organizational processes, patients, and medical and health service delivery;

(5) Spatial mapping, a general view of the relationship between patients, medical processes, and service delivery.

4. Application and effects of patient journey mapping in the nursing field

4.1. Application in nursing management

4.1.1. Improving patient experience

Published articles show that current studies mainly collect and analyze data through qualitative research methods such as interviews, observations, and thematic analysis to further draw and construct patient journey experience maps. Patient journey mapping can identify obstacles and facilitating factors for good or bad patient experience during the medical process, thereby improving patient experience. Riddder et al. interviewed 40 perioperative patients who had undergone outpatient surgery and drew a patient journey map including duration, emotional state, and location changes from the perspectives of pre-operation, intra-operation, and post-operation. The results showed that the surgical process, sense of insecurity, comfort from medical staff, loneliness, and lack of information were the influencing factors of perioperative patient experience. Lin Ying et al. based on the Peak-End Rule, used semi-structured interviews to qualitatively obtain the trajectory of peak and end experiences of chronic disease patients in the three stages before, during, and after disease monitoring [9]. Based on the conclusions, they constructed a chronic disease patient health management journey map with user behaviors and needs, behavioral processes, emotional experiences, obstacle factors, and facilitating factors as the main content; and proposed that solutions to improve patient experience should be found at the two time points of peak and end experiences of patients.

4.1.2. Promoting the development of mobile medical systems

Abroad, patient journey mapping is mainly used to evaluate the usability and accuracy of mobile medical systems in follow-up. Aggarwal et al. conducted a scoping review of literature on the use of mobile medical systems to reduce the harm of opioid drugs and integrated the review content into the patient journey map to further promote the development and improvement of medical systems. The results showed that existing mobile medical systems mainly focus on patient treatment, with less attention to prevention and rehabilitation, which is inconsistent with patients' actual needs. That is, future research should develop more suitable functions and modules for patients under the inspiration of patient journey mapping.

Domestically, the role of patient journey mapping in follow-up is mainly to draw the experience journey maps of chronic disease patients and their families, which serves as the functional framework of mobile medical systems and the scheme basis of chronic disease management systems. Zhou Yan used questionnaires to investigate the participation of autistic children and their guardians in rehabilitation training, and explored the rehabilitation process of autistic children and the views of rehabilitation therapists on rehabilitation training courses through non-participatory observation and semi-structured interviews [10]. Combined with autistic management procedures and children's trajectories, she drew 4 types of experience maps for guardians of autistic children, namely cautious

type, rational and highly educated type, anxious type, and positive and optimistic type. She obtained the positive and negative touchpoints and demand points of mothers of different types of autistic children in the three stages before, during, and after rehabilitation training, which served as the functional framework of the mobile medical management system for autistic children. Zhao Zhiqiang et al. used observation and interview methods to explore the behaviors of elderly patients during the medical process from the three stages of pre-treatment, during treatment, and post-treatment, and constructed a journey map with user behaviors, needs, emotional changes, pain points, and opportunity points as the main elements [11]. It can intuitively see the pain points that need to be improved in the medical process of elderly patients at different stages, providing a basis for the development of health service systems for urban elderly groups.

In summary, domestic research on patient journey mapping is mostly concentrated in universities, taking a certain disease as the research object, and guiding the development of health management systems or software through patient journey mapping. Moreover, these studies basically do not include the views and perspectives of medical staff and other medical and health professionals, and have not really landed in clinical practice to serve clinical practice, with certain limitations.

4.2. Application in process optimization

The current hospital management model is patient-centered. Patient journey mapping can not only be used to explore patients' medical experience but also play many roles in optimizing work processes and formulating diagnosis and treatment plans. Since patient journey mapping is dynamic and visual, it can dynamically grasp the patient's emotional change process by drawing emotional change trajectories, describe the interaction between patients, medical staff, and medical and nursing activities, thereby evaluating and identifying obstacles and facilitating factors affecting medical and nursing activities. Lagura et al. investigated the experience of 8 patients with metal hypersensitivity after implanting medical devices. The results showed that the time from symptom appearance to clear diagnosis was prolonged, and patients did not seek medical treatment in a timely manner. Therefore, early evaluation and screening should be carried out after patients implant medical devices to reduce unnecessary waste of medical resources and pain for patients.

4.3. Application in promoting patients' medical seeking behavior

Some studies have focused on the medical situation of vulnerable groups, patients with opioid use disorders, and patients with mental disorders. The results showed that although these groups have realized the existence of health risks, shame leads to delayed medical treatment or non-medical treatment, resulting in disease progression. Patient journey mapping is patient-centered, which can capture the trajectory of shame changes experienced by patients after discovering symptoms, thereby identifying obstacles to patients' medical seeking behavior. Interventions can be carried out to reduce patients' shame and promote medical seeking behavior. Providing effective, safe, and supportive patient-centered care requires understanding the progressive experiences and evolving processes of patients.

5. Presentation methods of patient journey mapping results

5.1. Presentation method of classic patient journey mapping

A classic patient journey map usually consists of a horizontal axis (timeline) and a vertical axis (task axis). The

horizontal axis depends on the researcher's research purpose, which can be any one or all of the three stages of diagnosis, treatment, and follow-up. The vertical axis includes patients' perceptions, behaviors, emotional changes, etc., as well as values, occupations, motivations, pain points, obstacles, touchpoints, opportunities, etc. A personalized story line is drawn by showing changes in patient experience at different stages.

5.2. Presentation methods of other types of patient journey mapping

Simonse et al. proposed a 4-step method to draw a patient journey map to explore ways to improve the satisfaction of patients undergoing capsule endoscopy, including desktop research on clinical diagnosis and treatment plans or operation processes, observing patients to draw a preliminary journey map, constructing the patient journey while conducting interviews to further improve and revise the journey, and jointly evaluating with patients to determine the final version of the journey map [7]. Wang Wentao et al. divided the journey map into 4 stages, namely user roles and scenarios, sorting out scenarios, analyzing pain points, satisfaction points and opportunity points, and drawing the patient journey map [3]. In terms of user roles, user portraits can be drawn by clarifying research objects, understanding their needs, and creating typical examples. Then, user experience can be obtained through field observation, questionnaires, in-depth interviews, etc. By integrating the above information, the user's emotional trajectory can be sorted out to find pain points, demand points, satisfaction points, and opportunity points, thereby improving the process, enhancing user experience, and finally organizing and beautifying the journey map.

6. Implications and suggestions

Patient journey mapping is a tool that generates a visual or descriptive journey map by recording elements in the patient's "journey" when individuals and/or their caregivers and family members enter, experience, and exit one or more services in the health service system. During the research process, it is necessary to fully analyze the experience information displayed by patients, find areas that need improvement in the patient experience process, so as to understand the real needs of patients, and finally display all elements through the journey map. This process not only helps understand the patient experience but also improves researchers' abilities in information acquisition, summary and analysis, interpretation, and visualization. In addition, research related to patient journey mapping generally requires the cooperation of a multi-disciplinary team, and also needs the guidance of engineers required for system development and the page design of system graphic designers. It can be seen that the development and application of patient journey mapping are inseparable from the collaborative development of multi-disciplinary teams, and also promote the intersection and integration between disciplines.

Patient journey mapping has great potential in improving patient experience, promoting patient medical management, and health management. However, there are certain limitations in carrying out research related to patient journey mapping in clinical practice.

(1) Patient journey mapping originated from the design field. Although it is a visualization tool for exploring patient experience based on the combination of qualitative and quantitative research, there are currently no standardized methodological standards and reporting norms, which limits its promotion in the medical and health field. Future research can explore methodological and reporting norms.

(2) Patient journey mapping is an emerging visualization tool. Future research should consider the differences between it and traditional patient experience assessment tools and the effectiveness of assessment.

(3) Researchers can use design thinking to focus on patient needs, find new ways to solve problems, and continuously explore and optimize the presentation methods and key points of patient journey mapping.

7. Summary

Patient experience is increasingly important in medical services. Patient journey mapping can reflect key elements such as behaviors, emotions, and experiences of patients from seeking medical resources, making appointments for consultation, receiving treatment to rehabilitation. Different from traditional ways of obtaining patient experience, it can help medical staff identify key links for quality improvement, play advantages in nursing management, process optimization, and promoting medical seeking behavior, better enhance patient experience, and improve service quality and patient satisfaction. At present, research in this field is relatively lacking in China. Therefore, we can learn from foreign experiences and shortcomings, combine the actual situation of China's medical development, integrate patient journey mapping with machine learning, big data, and artificial intelligence, and promote the application and development of patient journey mapping in the nursing field.

Funding

Disclosure statement

The author declares no conflict of interest.

References

[1]   National Health Commission of the People's Republic of China, National Administration of Traditional Chinese Medicine, 2023, Notice on Carrying out Theme Activities to Improve Medical Experience and Enhance Patient Experience [EB/OL], visited on 2026, https://www.gov.cn/zhengce/zhengceku/202306/content_6887303.htm.

[2]   Sijm-Eeken M, Zheng J, Peute L, 2020, Towards a Lean Process for Patient Journey Mapping—A Case Study in a Large Academic Setting. Stud Health Technol Inform, 270: 1071–1075.

[3]   Wang W, Hou J, Qian P, et al., 2023, User Experience Mapping: A New Tool for Library User Experience Librarians. Documentation, Information and Knowledge, 40(5): 107–117.

[4]   Davies E, Pollock D, Graham A, et al., 2022, Reporting of Patient Journey Mapping in Current Literature: A Scoping Review Protocol. JBI Evid Synth, 20(5): 1361–1368.

[5]   Kelly J, Dwyer J, Mackean T, et al., 2017, Coproducing Aboriginal Patient Journey Mapping Tools for Improved Quality and Coordination of Care. Aust J Prim Health, 23(6): 536–542.

[6]   McCarthy S, O'Raghallaigh P, Woodworth S, et al., 2020, Embedding the Pillars of Quality in Health Information Technology Solutions Using "Integrated Patient Journey Mapping" (IPJM): Case Study. JMIR Hum Factors, 7(3): e17416.

[7]   Simonse L, Albayrak A, Starre S, 2019, Patient Journey Method for Integrated Service Design. Design for Health, 3(1): 82–97.

[8] Sudbury-Riley L, Hunter-Jones P, Al-Abdin A, 2020, Introducing the Trajectory Touchpoint Technique: A Systematic Methodology for Capturing the Service Experiences of Palliative Care Patients and Their Families. BMC Palliat Care, 19(1): 104.

[9] Lin Y, Mei Y, Gu X, 2019, Application of Peak-End Rule in User Experience of Chronic Disease Health Management Service Systems. Packaging Engineering, 40(10): 221–226 + 231.

[10] Zhou Y, 2019, Research on Chronic Disease Management Application Design Based on Service Touchpoints, thesis, Shandong University.

[11] Zhao Z, Wang J, 2022, Research on Health Management Service Systems for Urban Elderly Groups. Development & Innovation of Machinery & Electrical Products, 35(5): 173–177.

[12] Crosier A, Handford A, 2012, Customer Journey Mapping as an Advocacy Tool for Disabled People: A Case Study. Social Marketing Quarterly, 18(1): 67–76.

[13] Ly S, Runacres F, Poon P, 2021, Journey Mapping as a Novel Approach to Healthcare: A Qualitative Mixed Methods Study in Palliative Care. BMC Health Serv Res, 21(1): 915.

[14] Curry J, McGregor C, Tracy S, 2007, A Systems Development Life Cycle Approach to Patient Journey Modeling Projects. Stud Health Technol Inform, 129(Pt 2): 905–909.

[15] Barton E, Freeman T, Baum F, et al., 2019, The Feasibility and Potential Use of Case-Tracked Client Journeys in Primary Healthcare: A Pilot Study. BMJ Open, 9(5): e024419.