

# Satisfaction Among Chronic Disease Patients In Primary Healthcare Institutions: A Bibliometric Review

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**Abstract:** *With changes in global lifestyles, chronic diseases have become a significant economic burden and present major challenges to primary healthcare systems worldwide. Patient satisfaction is increasingly recognized as a crucial metric for assessing and improving the quality of chronic disease care in primary healthcare institutions. The bibliometric review aims to systematically assess and visualize the global research landscape on patient satisfaction with chronic diseases in primary healthcare settings. The review summarizes research trends and hot topics, providing a basis for future research directions and developments. A bibliometric analysis was conducted on 302 publications retrieved from the Web of Science Core Collection, published between 2010 and 2025. VOS viewer software was employed to analyze co-authorship networks, keyword co-occurrence, thematic clusters, and co-citation networks. The United States emerged as the leading country both in research output and collaboration within the field of patient satisfaction in chronic disease care at the primary healthcare level. Publications increased between 2010 and 2018 and have declined slightly since then. Annual citation counts have continued to rise through 2024, suggesting a transition from quantity expansion to theoretical deepening and knowledge accumulation. Six major theme clusters were identified, core research hotspots include service quality and care management, yet longitudinal and comprehensive analyses of patient satisfaction remain limited. Research on patient satisfaction in chronic disease management within primary healthcare institutions shows fluctuating trends but remains an active field. Future research should focus on longitudinal studies and the development of standardized satisfaction measurement tools to better guide policy and clinical practice. Enhanced emphasis on digital health interventions and telemedicine, as well as the promotion of patient-centered innovation, will be critical for advancing the quality of primary healthcare for chronic disease patients.*

**Keywords:** *Chronic Disease; Patient Satisfaction; Primary Healthcare; Bibliometric Analysis; VOS viewer*

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## 1. INTRODUCTION

As global ageing increases, the burden of disease from chronic diseases (CD), also known as non-communicable diseases (NCDs) have become a widespread public health concern in the international community. NCDs are characterized by slow progression (Sidossis et al., 2022), these diseases mainly include cardiovascular diseases, cancer, chronic respiratory diseases and diabetes (Xue et al., 2023). According to the World Health Organization, chronic diseases cause 41 million deaths annually, accounting for 74% of global deaths (Hacker, 2024). Healthcare expenditure and loss of income due to chronic diseases not only puts pressure on a country's healthcare system but may also affect the country's economic growth and social development (Luengo-Fernandez et al., 2024; Mayntz et al., 2024).

Primary health care services are the most basic and desirable model of health care delivery,

especially the key role in the prevention and management of chronic diseases(Haque et al., 2020). The Declaration of Alma-Ata, endorsed by the World Health Organization (WHO) and other international organizations, emphasizes primary health care as a key strategy for achieving 'health for all' and recognizes its relevance to the provision of health services in developing countries (Osa-eloka, 2012; Passmore, 1979).

Research evidence suggests that patient satisfaction has become a key indicator for assessing the quality and efficiency of primary healthcare services (Liang et al., 2021), high patient satisfaction can help improve treatment adherence and lead to better health outcomes(AIOMari & Hamid, 2022). Furthermore, patient satisfaction directly impacts service utilization, treatment adherence, and the sustainability of primary care healthcare delivery models (Muscat et al., 2021). Patient satisfaction can be defined as a comprehensive assessment formed by patients comparing their actual healthcare experience with their prior expectations (Suja Sundram et al., 2022). Several standardized instruments have been developed to quantify patient satisfaction in healthcare settings, include The Patient Satisfaction Questionnaire-18 (PSQ-18), the SERVQUAL scale, the EUROPEP, and the Customer Satisfaction Questionnaire (CSQ-8) (Thayaparan & Mahdi, 2013; Christoph Pryss et al., 2022; Mermod et al., 2008; Jilani et al., 2023).

This review aims to systematically collate and quantify global research on patient satisfaction with chronic diseases in primary care settings from 2010 to 2025. It seeks to illuminate publication trends, research areas, major publishers, and the distribution of contributing countries/regions. Using bibliometric visualizations, the study further analyzes topic areas, keywords, and their evolution over time. On this basis, the review identifies methodological and population-related gaps in the existing literature, clarifies knowledge deficits, and offers constructive recommendations for future research directions, policy formulation, and service improvement in this field. The research framework is shown in Figure 1.

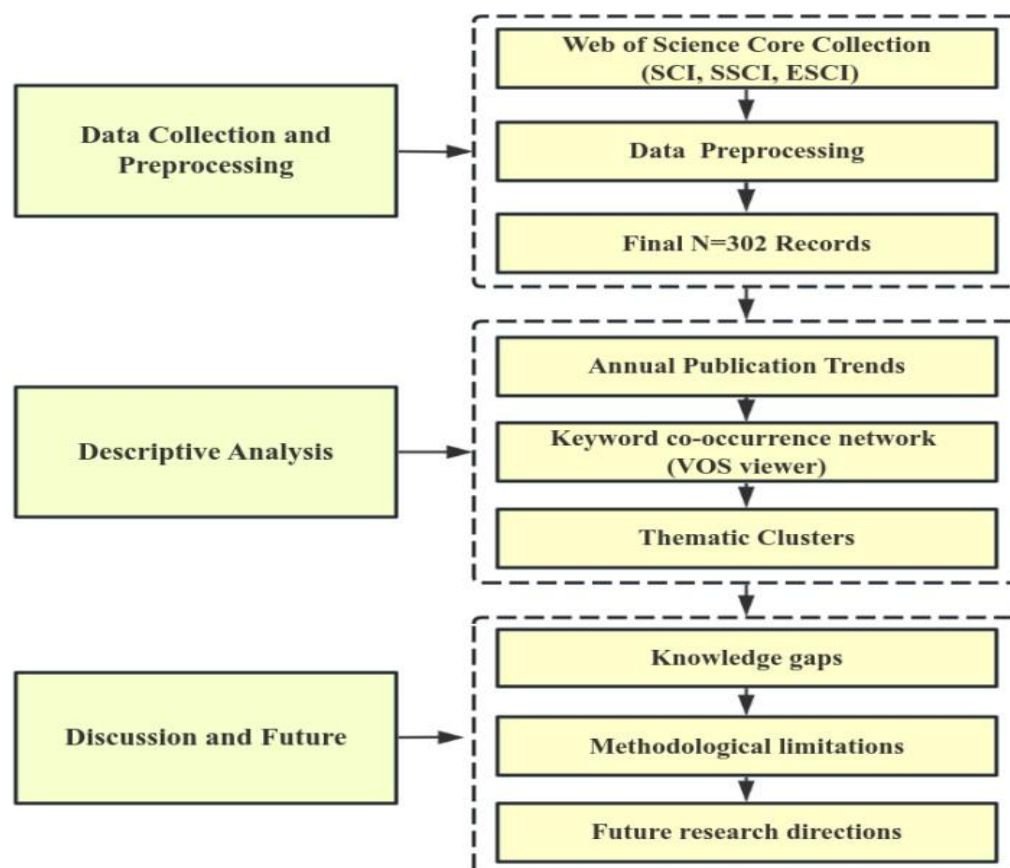


Figure 1. Research Framework

## 2. METHODOLOGY

The following search string was used in Web of Science Core Collection database (SSCI, SCI, and ESCI): ((ALL= ("chronic disease" OR "non-communicable disease" OR "chronic patient")) AND ALL= ("primary healthcare" OR "primary care")) AND ALL= (patient satisfaction), limited to English-language peer-reviewed articles and reviews published between January 2010 and June 2025. The initial query yielded 364 records, from which 56 publications predating 2010 were excluded. After restricting the document types to "article" and "review article" (n = 308), and further excluding book chapters, early access items, editorials, conference abstracts, and proceedings, a final set of 302 studies remained for bibliometric analysis, comprising 258 articles and 44 review articles (as shown in Figure 2).

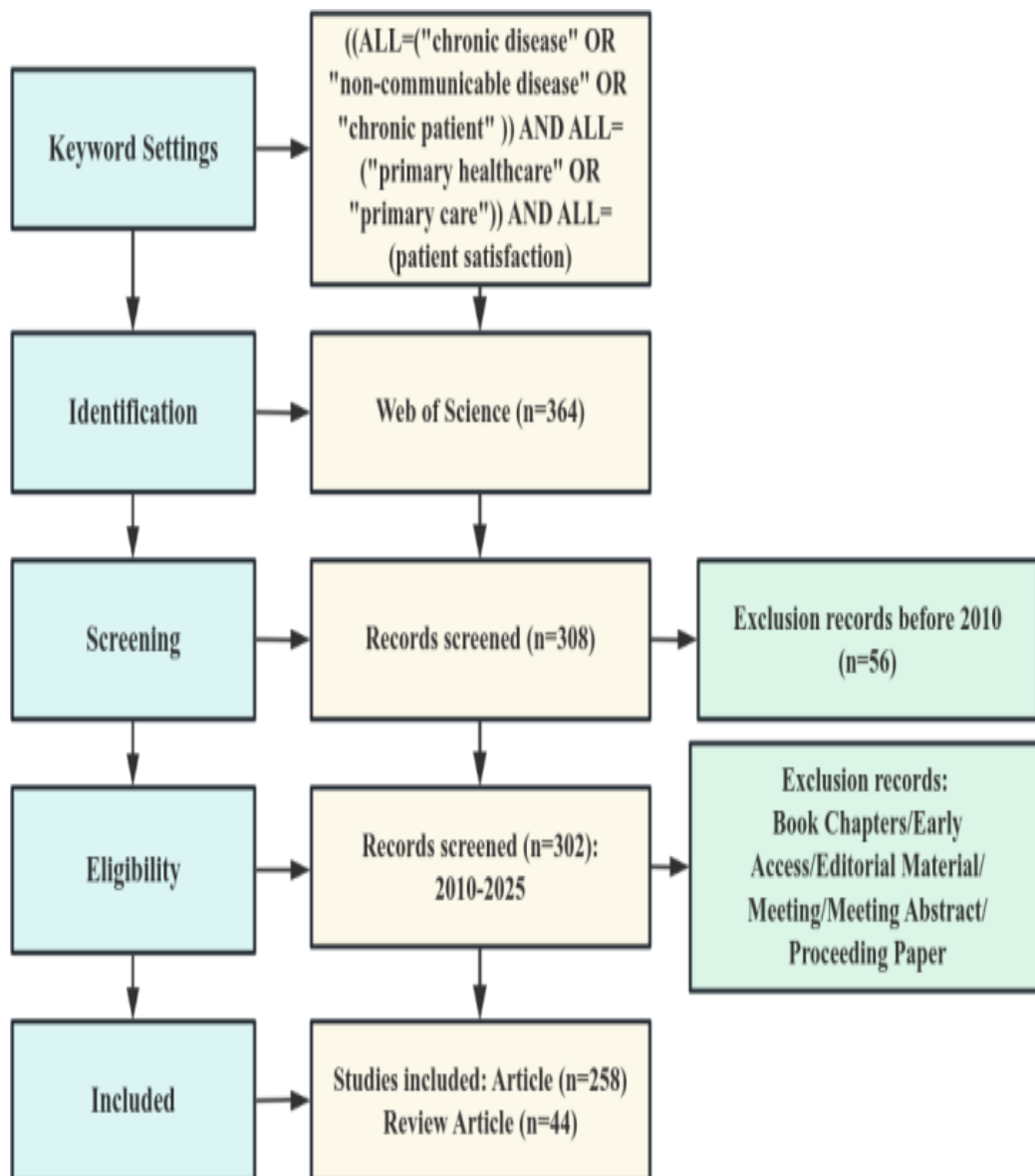


Figure 2. PRISMA Flow Diagram of Literature Selection

## 3. Findings

This paper is divided into two parts. The first part will evaluate the evolution of scientific research achievements, including publication trends and article citation trends, research fields, countries or regions producing article outputs, and major Publication Titles. The second part will assess the content of scientific research achievements to identify themes for further research. Figure 3 summarizes the data extracted from the WOS database for conducting bibliometric studies.

### 3.1 Main Achievements

#### 3.1.1 Publication Trends

Figure 3 summarizes the data extracted from the WOS database for conducting bibliometric studies. The number of publications related to patient satisfaction with chronic diseases in primary healthcare institutions gradually increased between 2010 and 2018, reflecting the growing attention paid to this field by both academic and policy communities. Although the annual number of publications declined after 2018, the annual citation count for related literature has continued to rise as of 2024, indicating that early research has laid a solid academic foundation for this field. The steady growth in citation trends not only highlights the long-term academic value and sustained influence of core research findings but also indicates that this field is gradually transitioning from quantitative expansion to a phase of theoretical deepening and knowledge accumulation.

Figure 3. Evolution over Time of Published Articles and Total Citations (2010-2025) related to Satisfaction Among Chronic Disease Patients in Primary Healthcare Institutions

#### 3.1.2 Refine by Research Areas

A bibliometric analysis by research field (Table 1) shows that the research focus is primarily concentrated in the fields of “General Internal Medicine” (n=96) and “Health Care Sciences and Services” (n=89), indicating the central role of primary care and health care services in chronic disease management research.

Table 1. Refinement of Articles by Research Area



Research Area	Number of Articles
General Internal Medicine	96
Health Care Sciences & Services	89
Public, Environmental & Occupational Health	39
Nursing	35
Medical Informatics	17
Research & Experimental Medicine	14
Pharmacology & Pharmacy	10
Social Sciences, Other Topics	9
Respiratory System	6
Urology & Nephrology	6

Cardiovascular System & Cardiology	5
Environmental Sciences & Ecology	5
Pediatrics	5

“Public Health, Environmental and Occupational Health” (n=39) and “Nursing” (n=35) also have a significant number of representatives, highlighting the interdisciplinary nature of this research field and the importance of integrating public health and nursing perspectives when assessing patient satisfaction. Fields such as “Medical Informatics” “Pharmacology and Pharmacy” and “Social Sciences” , although less represented, reflect growing attention to digital health, medication management, and social determinants of health, respectively.

Research in specialized fields such as “Respiratory System” “Urology and Nephrology” “Cardiovascular System and Cardiology” and ‘Pediatrics” is relatively scarce, indicating that studies on patient satisfaction in chronic disease management at the primary care level primarily adopt a broad, cross-disease perspective rather than focusing on specific clinical specialties. This trend underscores the importance of employing a systematic approach to assess patient satisfaction when managing chronic diseases in primary care settings.

### 3.1.3 Publications by Country/Region

Figure 4 presents the geographic distribution of 302 publications retrieved from the Web of Science Core Collection. For specific data has showed in Table 2. The United States leads in research output with 119 publications (39.4%), reflecting its prominent role in studying chronic disease patient satisfaction in primary care settings. Australia (39 publications, 12.9%) and Canada (38 publications, 12.6%) follow, indicating sustained academic interest in patient satisfaction within community and primary care systems. The United Kingdom (24 publications, 7.9%), the Netherlands and China (14 publications each, 4.6%), demonstrate growing research activity in Europe and parts of Asia.

Table 2. Collected articles Refine by Countries/Regions

Countries/Regions	Count	Countries/Regions	Count	Countries/Regions	Count
USA	119	SCOTLAND	3	BRAZIL	1
AUSTRALIA	39	SOUTH KOREA	3	DENMARK	1
CANADA	38	WALES	3	ESTONIA	1
ENGLAND	24	GHANA	2	HUNGARY	1
NETHERLANDS	14	IRELAND	2	INDONESIA	1
PEOPLES R					
CHINA	14	ISRAEL	2	IRAN	1
SPAIN	13	MALAYSIA	2	JAPAN	1
BELGIUM	10	NEW ZEALAND	2	LITHUANIA	1
GERMANY	9	NORWAY	2	MALAWI	1
ITALY	9	PORTUGAL	2	NIGERIA	1
SINGAPORE	8	SOUTH AFRICA	2	PALESTINE	1
		TRINIDAD			
SWITZERLAND	8	TOBAGO	2	QATAR	1
POLAND	6	ARGENTINA	1	SLOVENIA	1
SAUDI ARABIA	5	BAHRAIN	1	TAIWAN	1
FRANCE	4	BANGLADESH	1	TUNISIA	1
SWEDEN	4	BOSNIA HERCEG	1	TURKEY	1
GREECE	3				

Several countries maintain steady contributions, including Spain (13 publications, 4.3%), Germany and Italy (9 publications each, 3.0%), Belgium (10 publications, 3.3%), Switzerland and Singapore (8 publications each, 2.6%). Meanwhile, nations such as Poland (6 publications, 2.0%), Saudi Arabia (5 publications, 1.7%), and Scotland (3 publications, 1.0%) show comparatively lower output.

Overall, Figure 4 highlights the dominance of high-income countries in this research domain while identifying emerging markets and developing nations with untapped potential. These findings provide a foundation for future cross-national comparisons and evidence-based global health policy development.

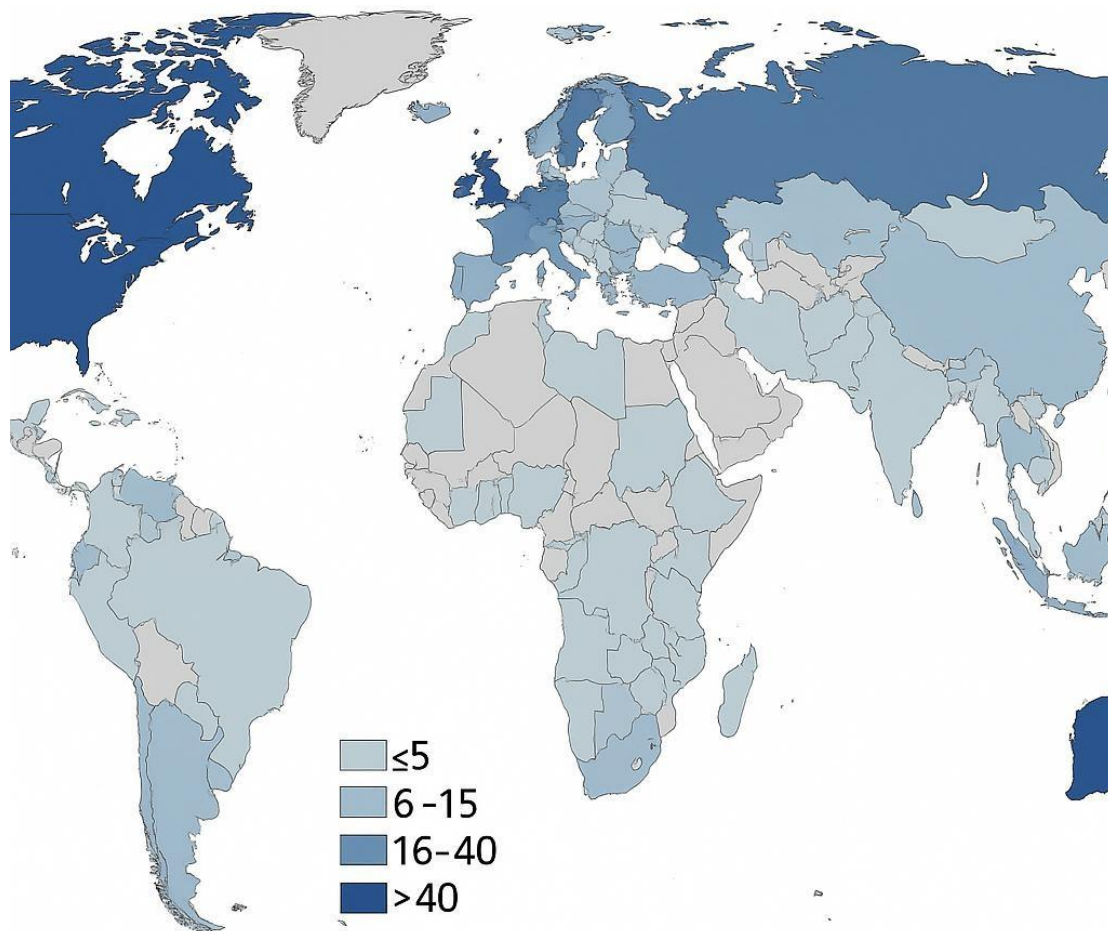


Figure 4. Global Distribution of Publications by Countries/Regions

### 3.1.4 Main Publication Titles

An analysis of core journals reveals that studies on patient satisfaction in primary healthcare settings for chronic disease patients are primarily published in high-impact Q1 journals such as the *Journal of Advanced Nursing*, *BMC Family Practice*, and the *International Journal of Nursing Studies*. Highly cited journals with extremely high impact factors, such as the *New England Journal of Medicine* and the *Cochrane Database of Systematic Reviews*, highlight the multidisciplinary and high-level nature of this field. The common distribution of nursing and primary care journals also reflects the high degree of interdisciplinary overlap in this research area. Among these, the *New England Journal of Medicine* only included one article in this series, ‘Collaborative Care for Patients with Depression and Chronic Illnesses’ (from the University of Washington), but it had the highest citation count among the series, reaching 1,210 (Katon et al., 2010). This indicates that the article innovatively proposed the effectiveness of collaborative care models for managing patients with co-occurring chronic illnesses and depression, exerting

significant influence in the fields of disease management, primary healthcare services, and the intersection of chronic illnesses and mental health.

Table 3. Main Publication Titles

No.	Source	Documents	Citations	Total link strength	IF	Category Quartile
1	Journal of Advanced Nursing	6	306	21	3.4	Q1
2	BMC Family Practice	13	348	13	3.2	Q1
3	International Journal of Nursing Studies	6	231	10	7.1	Q1
4	New England Journal of Medicine	1	1,210	8	78.5	Q1
5	Journal of Clinical Nursing	5	60	6	3.5	Q1
6	BMC Health Services Research	9	166	5	3	Q2
7	BMC Primary Care	8	17	5	2.6	Q1
8	Cochrane Database of Systematic Reviews	3	1,079	5	9.4	Q1
9	Journal of General Internal Medicine	10	203	5	4.2	Q1
10	Canadian Medical Association Journal	1	73	4	11.3	Q1

Note: ‘Documents’ refers to the number of articles in the journal among the 302 retrieved documents; ‘Citations’ refers to the total number of citations for the corresponding articles in WOS; ‘Total link strength’ refers to the total link strength of the journal in the journal co-citation network.

### 3.1.5 Main Co-authorship Relationships

Figure 5 shows countries based on actual co-authorship relationships, represented by nodes and lines in the diagram. These countries have published at least two articles on patient satisfaction with chronic disease management in primary healthcare institutions. Larger nodes and thicker lines indicate more frequent collaboration; different colors indicate different collaboration subgroups, reflecting the international collaboration landscape. Four distinct clusters can be observed in the diagram.

Cluster 1 (red) consists of English-speaking countries and their allies led by the United States (Canada, the United Kingdom, Australia, New Zealand, Scotland, Israel, Saudi Arabia, and China). Cluster 2 (green) is led by the Netherlands and connects European and African partners (Belgium, Sweden, Greece, Italy, Ghana, and South Africa). Cluster 3 (blue) is led by Spain and comprises core Western European countries (France, Germany, Norway, Poland, Wales). Cluster 4 (yellow) is composed of Singapore, Portugal, and Ireland.

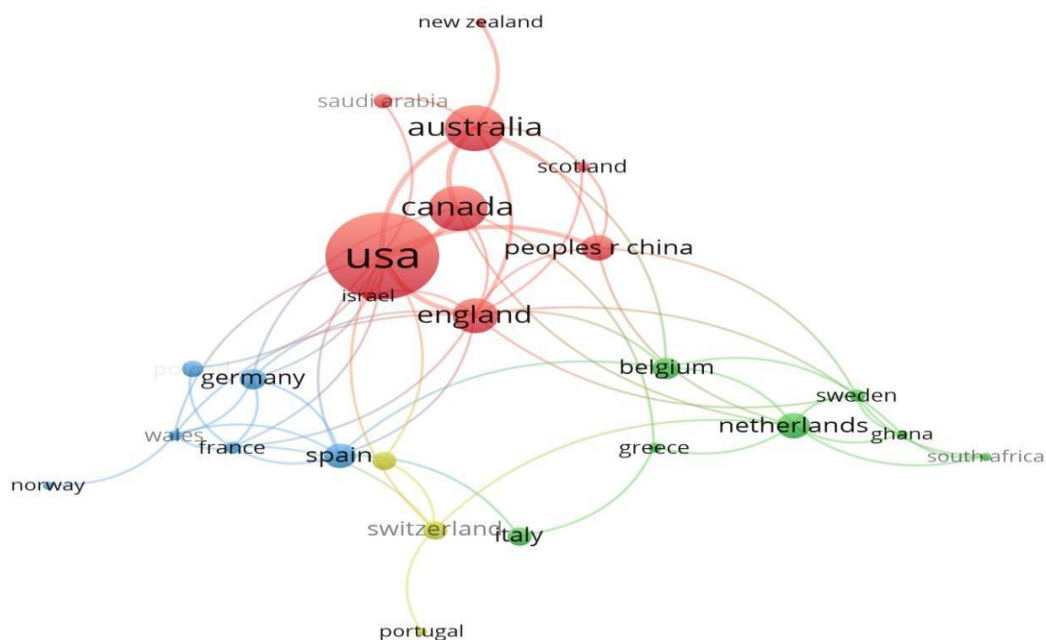


Figure 5. Main Co-authorship Relationships

### 3.2 Main research contents

#### 3.2.1 Keyword Co-occurrence Network Analysis

Using VOS viewer, the 302 publications retrieved from the Web of Science were analyzed to construct a keyword co-occurrence network with a threshold of at least five occurrences per keyword (minimum keyword occurrence = 5). The resulting visualization yielded 6 primary theme clusters. The results are presented in Figure 6, shows that “chronic disease,” “primary care,” and “satisfaction” occupy the network’s core, with the highest node strength and densest connections—indicating their roles as pivotal themes across global literature. The thematic clusters are closely interconnected through numerous co-occurrences, reflecting the intersection of chronic disease management, patient satisfaction, healthcare service processes, and health promotion. Peripheral nodes such as self-management, health information, telemedicine, and family medicine are emerging research hotspots in this field. Overall, the network shows a multi-center, interconnected structure, illustrating the diverse integration and evolution of research topics on chronic disease patient satisfaction. The centrality and high co-occurrence of “chronic disease,” “primary care,” and “satisfaction” underscore their pivotal position in the thematic structure of the literature (Figure 6).

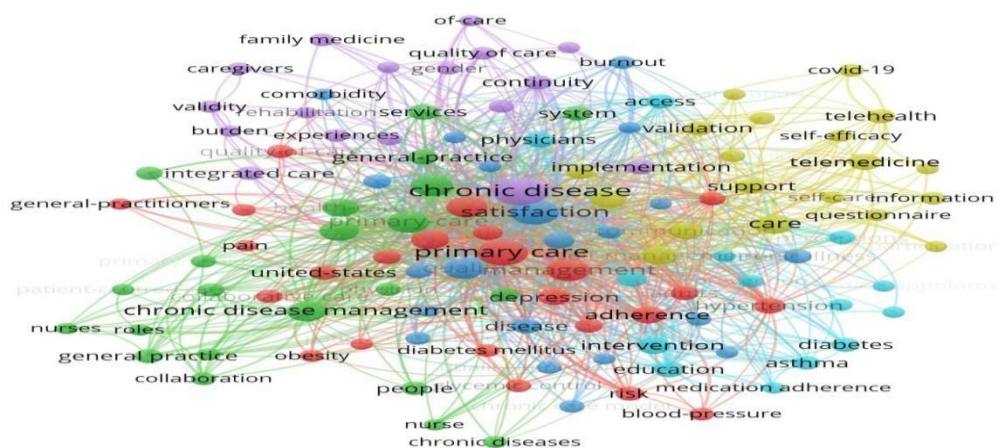


Figure 6. Keyword Co-occurrence Network (N=302 Articles)

### 3.2.2 Top-20 Keywords Analysis

As shown in the Table 4, “Occurrences” denotes the total frequency a keyword appears across all included publications, indicating the topic’s prominence in the field; “Total Link Strength” is the sum of co-occurrences between this keyword and all others, reflecting its centrality and the degree to which it integrates various research themes.

Table 4. Top 20 High-frequency Keywords

No.	Keyword	Occurrences	Total Link Strength
1	chronic disease	102	514
2	primary care	80	411
3	satisfaction	69	386
4	management	46	261
5	quality	39	239
6	outcomes	37	215
7	primary-care	44	211
8	patient satisfaction	44	209
9	impact	30	195
10	chronic disease management	32	175
11	primary health care	32	162
12	self-management	27	156
13	health-care	25	150
14	health	26	125
15	communication	19	119
16	care	29	115
17	hypertension	15	106
18	depression	17	102
19	adherence	19	101
20	intervention	19	95

The analysis reveals that the top keywords “chronic disease” (102 occurrences), “primary care” (80) and “satisfaction” (69) underscore that research on chronic disease patient satisfaction is primarily centered on the disease entity, primary care settings, and service quality; notably, “chronic disease” also holds the highest link strength (514), indicating its pivotal role with widespread co-occurrence across nearly all other keywords. Moreover, the co-occurrence network exhibits a multicentric, high-density topology with “chronic disease,” “primary care,” and “satisfaction” at its core acting as bridge nodes, while peripheral terms like “telehealth” and “self-management” emerge as future hotspots, reflecting the tight integration of clinical measures, service models, information technology, and patient subjective experiences in this field.

### 3.2.3 Keyword Co-occurrence Analysis and Themes

#### (a) Keyword Co-occurrence Analysis and Themes

The VOS viewer clustering results categorize all high-frequency keywords into 6 theme clusters (Table 5): clinical indicators and individual patient characteristics; primary care models and patient-centered care; systematic care models and quality improvement; digital health and self-empowerment; continuity of care and holistic management perspectives; accessibility, preventive interventions, and knowledge dissemination.

Table 5. Keyword clustering table

Cluster	Keywords
Cluster 1 (24 items)	adherence, adults, association, blood-pressure, collaborative care, cost-effectiveness, depression, diabetes mellitus, general-practitioners, glycemic control, hypertension, impact, management, obesity, outcomes, pain, patient, physical-activity, primary care, quality-of-care, quality-of-life, randomized controlled, risk, united-states
Cluster 2 (22 items)	chronic disease management, chronic diseases, collaboration, general practice, general-practice, health-care, interventions, nurse, nurses, nursing, patient satisfaction, patient-centred care, people, physician, practitioners, primary health care, primary-care, primary-health-care, qualitative research, roles, services, system
Cluster 3 (22 items)	associations, burnout, care coordination, chronic care model, chronic illness, chronic illness care, comorbidity, disease, health services research, implementation, improving primary-care, medical home, model, multimorbidity, patient-centered care, predictors, prevalence, quality, quality improvement, quality of health care, satisfaction, veterans care, communication, covid-19, decision-making, health, health services, information, older-adults, participation, questionnaire, self-care, self-efficacy, self-management, social support, support, technology, telehealth, telemedicine, validation
Cluster 4 (19 items)	burden, caregivers, centered medical home, chronic disease, continuity, experiences, family medicine, gender, integrated care, of-care, performance, primary healthcare, quality of care, quality of life, rehabilitation, validity
Cluster 5 (16 items)	access, asthma, attitudes, diabetes, education, intervention, knowledge, medication adherence, perceptions, physicians, prevention, program, randomized-trial, shared medical appointment

### **Theme 1: Clinical indicators and individual patient characteristics**

The keywords (24 items) in this cluster focus on physiological and psychological indicators (e.g., blood-pressure, glycemic control, pain, depression) and their association with adherence and quality-of-life in patients with chronic diseases. Most of the relevant studies used randomized controlled trials and cross-sectional/longitudinal cohort methods to explore the effectiveness of collaborative care and management in different populations (adults, patients) and their cost-effectiveness evaluation (Elwell-Sutton et al., 2017; Gruß et al., 2019; Pollak et al., 2011; Scharn et al., 2018). This direction focuses on uncovering the impact of chronic disease management measures on key clinical endpoints, such as blood pressure, blood glucose levels, risk of complications and patient subjective experience (Browne et al., 2017; Graetz et al., 2020).

### **Theme 2: Primary care models and patient-centered care**

The keywords of this cluster (22 items) highlight the multidisciplinary collaboration (collaboration), nursing roles (nursing, nurses) and interventions in the primary health care (general practice) system (patient treatment, satisfaction) and patient-centred care. Qualitative research reveals the profound impact of service processes, healthcare communication, and role division on the medical experience of patients with chronic diseases, emphasizing patient demand-oriented process reengineering and service integration (Alhasan et al., 2025; Litchfield et al., 2017).

### **Theme 3: Systematic care models and quality improvement**

The keywords (22 items) of this cluster focus on chronic care model, patient-centered medical

home, multimorbidity, care coordination, and health services research, focusing on the system level (implementation, quality improvement) to optimize chronic disease management, reduce burnout, and improve care coherence and overall performance (Sinuraya et al., 2016). Most of the studies use a combination of practical evidence and service evaluation to explore model scalability and cost-effectiveness.

#### **Theme 4: Digital health and self-empowerment**

The keywords (19 items) of this cluster focus on telehealth, telemedicine, technology, information, questionnaire, self-management, self-efficacy, and social support (Mathew et al., 2023). Especially in the context of the COVID-19 pandemic, digital platforms have significantly improved the accessibility of remote monitoring and remote interventions, providing empowering services for older adults and remote areas. This direction emphasizes the synergy between technical intervention and patient active participation (Ishimwe et al., 2025; Stephen et al., 2018).

#### **Theme 5: Continuity of care and holistic management perspectives**

The keywords (16 items) in this cluster cover family medicine, centered medical home, continuity, burden, caregivers, integrated care, rehabilitation, and quality of life) and so on. This direction emphasizes cross-stage and cross-professional care continuity and family-community synergy, emphasizes the burden on family caregivers and the overall patient experience, and reduces system fragmentation through integrated services (Alves et al., 2019; Hudon et al., 2015, 2019).

#### **Theme 6: Accessibility, preventive interventions, and knowledge dissemination**

The keywords (14 items) of this cluster focus on access, prevention, education, knowledge, attitudes, perceptions, shared medical appointment, and medication adherence. Studies have shown that health education programs and innovative outpatient models (such as shared clinics) can significantly improve the level of prevention awareness and self-management in people with asthma and diabetes and enhance the efficiency of doctor-patient interaction and knowledge transfer (Davies et al., 2025; DeBar et al., 2022; Furlan et al., 2019; Zakrisson et al., 2019).

## **4. DISCUSSION**

This review provides a comprehensive mapping of patient satisfaction research in chronic disease management at the primary healthcare level, highlighting both achievements and persistent challenges. Strengthening primary care is essential: primary health care is the optimal foundation for comprehensive chronic disease management (Hanson et al., 2022; Zhang et al., 2025). Studies consistently report that effective communication, physician empathy, and comfortable, respectful interactions drive higher satisfaction among chronic patients (Alhasan et al., 2025). Improving trust and satisfaction in primary settings could enhance care continuity and efficiency.

### **4.1 Deepening the Core Theme of Patient Satisfaction—Management, Adherence, and Health Outcomes**

Chronic disease, primary care, management, adherence, and health outcomes emerge as the core nodes and high-frequency terms in the keyword co-occurrence network. Future research should pay closer attention to the specific relationships between patient satisfaction and both disease management and adherence in chronic patients (Losi et al., 2021). For example, researchers might develop a standardized patient satisfaction scale for chronic disease management in primary care settings and conduct longitudinal studies to understand the dynamics of satisfaction over time. Furthermore, it would be valuable to examine how satisfaction with health management programs influences outcome measures such as blood pressure and glycemic control, and how increased satisfaction, trust, and loyalty promote continued self-management behaviors. Finally, identifying which interventions—such as health education, family-doctor follow-up, or

team-based management—are most effective in enhancing satisfaction will help to advance a truly patient-centered, comprehensive chronic-care model. In fact, programs designed to strengthen clinicians' empathy and communication skills have been shown to directly increase patient loyalty (Alodhialah et al., 2024; Pollak et al., 2011).

#### **4.2 The Role of Digital Health Interventions and Telemedicine in Improving Patient Satisfaction**

Keywords such as digital health, telehealth, telemedicine, and self-management featured prominently in both the co-occurrence network and cluster analysis, highlighting their growing importance. Therefore, future research should evaluate how innovative digital health tools, such as remote follow-up systems and self-management apps, can improve satisfaction and access to services for patients with chronic conditions (Aminuddin et al., 2021; Ezeamii et al., 2024). Such research should include comparative evaluations of digital interventions across different chronic conditions and patient populations, exploring how to better integrate technological solutions with person-centered care to enhance the capacity of primary healthcare services.

#### **4.3 Multidisciplinary Collaboration and Patient-centered Service Innovation**

Terms such as collaborative care, primary care team, nursing, family medicine, and integrated care are densely clustered in the network, reflecting a trend towards a multidisciplinary model. Research shows that patient involvement in chronic care increases trust in primary care physicians and has perceived value as a mediator (Zhang et al., 2025). The study found that basic communication measures (providing information, listening, showing respect) are one of the strongest predictors of satisfaction in chronic disease care clinics (Alodhialah et al., 2024). Healthcare policies, such as Saudi Vision 2030, are increasingly emphasizing patient-centered chronic care (Alhasan et al., 2025). These policies should prioritize training providers in communication skills, supporting patient self-management (health literacy), and building patient-provider trust. Based on this, future research should explore the role and implementation of multidisciplinary cooperation in improving patient satisfaction, conduct empirical evaluation of soft factors such as clinical communication, nursing, social support, and investigate how multidisciplinary service models adapt to different healthcare systems and cultural backgrounds.

## **5. CONCLUSION**

This study is the first to apply bibliometric methods—including keyword co-occurrence analysis—to examine the status, hotspots, gaps, and future research trends in patient satisfaction among chronic disease populations in primary healthcare institutions, based on Web of Science Core Collection publications from January 2010 to June 2025. Furthermore, by employing the VOS viewer visualization tool for keyword co-occurrence analysis, the review explores relevant themes of patient satisfaction through mapped keyword networks and offers feasible recommendations for strengthening chronic disease management in primary healthcare settings.

In summary, this bibliometric analysis reveals that communication with patients, patient perceived service quality, and patient education were the main drivers of satisfaction and loyalty (Shie et al., 2022). These core factors collectively shape the patient experience, directly influencing satisfaction, trust, and subsequent loyalty toward healthcare providers (Liu et al., 2021). Furthermore, the analysis highlights the crucial roles of health literacy and patient engagement in enhancing satisfaction levels (Muscat et al., 2021). The findings suggest that successful chronic care programs should prioritize patient-centered approaches, including systematic provider communication training, the promotion of health education to improve patient literacy, and the routine assessment of patient experiences.

From a policy perspective, strengthening patient-provider trust and continuity of care, particularly in primary health care settings, is recommended to enhance patient adherence and ultimately improve health outcomes in chronic disease management. Furthermore, promoting broader international collaboration and adopting standardized primary care patient satisfaction measurement tools for chronic disease patients are crucial to advancing patient-centered innovation and ensuring comparability of research across different health care systems.

Nevertheless, this study has several limitations. Firstly, the inconsistency in researchers' terminology—for instance, some authors use “chronic illness” instead of “chronic disease”, implies that the consistency of our search strategy cannot be fully ensured, potentially impacting the comprehensiveness of literature retrieval. Secondly, VOS viewer cannot automatically recognize and merge synonymous terms during keyword co-occurrence analysis, necessitating manual consolidation by researchers, which may introduce subjective bias. Additionally, this study is based solely on bibliometric analysis of the Web of Science Core Collection and does not encompass data from other significant databases or interdisciplinary fields such as engineering and the arts. To address these shortcomings, future research could conduct systematic visual analyses across multiple sources (e.g., Scopus, ScienceDirect, etc.) to provide richer interdisciplinary empirical evidence for monitoring and managing patient satisfaction among chronic disease populations in primary health care settings.

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