

Impact of Educational Attainment, Illness Perception, Service Quality, and Accessibility on the Utilization of Internal Medicine Outpatient Services: A Scoping Review

Dampak Tingkat Pendidikan, Persepsi Penyakit, Kualitas Pelayanan, dan Aksesibilitas terhadap Pemanfaatan Layanan Rawat Jalan Penyakit Dalam: *Scoping Review*

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Abstract

Background: Outpatient healthcare utilization, particularly in internal medicine, plays a crucial role in early diagnosis, continuity of care, and clinical outcomes. However, disparities in the utilization of these services remain a challenge due to multiple interrelated determinants. **Objective:** This scoping review aimed to map and synthesize the evidence regarding the influence of educational attainment, illness perception, service quality, and accessibility on the utilization of internal medicine outpatient services. **Methods:** The review followed the Arksey and O'Malley framework and was reported in accordance with the PRISMA-ScR guidelines. A comprehensive literature search was conducted in PubMed, Scopus, Web of Science, ScienceDirect, and Google Scholar for studies published between 2016 and 2026. A total of 16 studies met the inclusion criteria and were analyzed. **Results:** Most included studies employed quantitative cross-sectional designs, while several used qualitative and mixed-methods approaches. Educational attainment was reported as a significant determinant in 12 studies (71%), accessibility in 14 studies (82%), illness perception in 8 studies (47%), and service quality in 6 studies (35%). A combination of individual, psychological, service-related, and structural factors influenced outpatient service utilization. Educational attainment and accessibility were the most frequently reported determinants, whereas illness perception and service quality played roles in shaping healthcare-seeking behavior and continuity of care. Heterogeneity in study design, measurement approaches, and healthcare system contexts was a major limitation. **Conclusion:** Outpatient internal medicine service utilization is multidimensional and requires integrated strategies, including enhancing health literacy, strengthening patient-centered service quality, and reducing financial and geographical barriers, to achieve more equitable and effective healthcare delivery.

Keywords: Outpatient Healthcare Utilization; Internal Medicine Outpatient Services; Educational Attainment; Illness Perception; Service Quality; Accessibility; Scoping Review

Abstrak

Latar Belakang: Pemanfaatan layanan kesehatan rawat jalan, khususnya di bidang penyakit dalam, berperan penting dalam diagnosis dini, kontinuitas perawatan, dan luaran klinis pasien. Namun, disparitas pemanfaatan layanan ini masih menjadi tantangan akibat berbagai determinan yang saling terkait. **Tujuan:** Penelitian ini bertujuan untuk memetakan dan mensintesis bukti ilmiah mengenai pengaruh tingkat pendidikan, persepsi penyakit, kualitas pelayanan, dan aksesibilitas terhadap pemanfaatan layanan rawat jalan penyakit dalam. **Metode:** Studi ini merupakan *scoping review* yang mengikuti kerangka kerja Arksey dan O'Malley serta dilaporkan berdasarkan pedoman PRISMA-ScR. Pencarian literatur dilakukan pada basis data PubMed, Scopus, Web of Science, ScienceDirect, dan Google Scholar untuk publikasi periode 2016–2026. Sebanyak 16 studi memenuhi kriteria inklusi dan dianalisis. **Hasil:** Sebagian besar studi menggunakan desain kuantitatif potong lintang, sementara beberapa lainnya menggunakan pendekatan kualitatif dan metode campuran. Tingkat pendidikan dilaporkan sebagai determinan signifikan pada 12 studi (71%), aksesibilitas pada 14 studi (82%), persepsi penyakit pada 8 studi (47%), dan kualitas pelayanan pada 6 studi (35%). Kombinasi faktor individu, psikologis, pelayanan, dan struktural terbukti memengaruhi pemanfaatan layanan. Tingkat pendidikan dan aksesibilitas merupakan determinan yang paling sering dilaporkan, sedangkan persepsi penyakit dan kualitas pelayanan berperan dalam membentuk perilaku pencarian layanan serta kontinuitas perawatan. Heterogenitas desain studi, pendekatan pengukuran, dan konteks sistem kesehatan menjadi keterbatasan utama. **Kesimpulan:** Pemanfaatan layanan rawat jalan penyakit dalam bersifat multidimensi dan memerlukan strategi terintegrasi, meliputi peningkatan literasi kesehatan, penguatan kualitas layanan yang berpusat pada pasien, serta pengurangan hambatan finansial dan geografis, guna mewujudkan pelayanan kesehatan yang lebih adil dan efektif.

Kata Kunci: Pemanfaatan Layanan Kesehatan Rawat Jalan; Layanan Rawat Jalan Penyakit Dalam; Tingkat Pendidikan; Persepsi Penyakit; Kualitas Pelayanan; Aksesibilitas; Scoping Review.



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Introduction

Outpatient healthcare utilization, particularly the utilization of internal medicine outpatient services, plays a pivotal role in ensuring early diagnosis, continuity of care, and improved clinical outcomes among individuals with acute and chronic conditions. In the context of this review, outpatient healthcare utilization refers specifically to the use of internal medicine outpatient services and excludes inpatient hospitalization and emergency healthcare services. Effective utilization of outpatient healthcare services helps reduce unnecessary hospitalizations, improve quality of life, and enhance the overall efficiency of healthcare systems. Despite global efforts to strengthen health systems, disparities in outpatient healthcare utilization remain a persistent, multifactorial public health challenge. [1,2,3].

A growing body of contemporary evidence identifies educational attainment as a key determinant of outpatient healthcare utilization. Education influences health literacy, cognitive processing, and individuals' ability to access, understand, and use health information effectively. Higher educational attainment is consistently associated with increased use of preventive services and outpatient healthcare services. At the same time, lower education levels are linked to delayed care-seeking and underutilization of formal healthcare services. [4,5,6,7].

In addition to structural factors, illness perception has been widely recognized as a crucial psychological determinant of healthcare-seeking behavior. Based on the Common-Sense Model of self-regulation, illness perception encompasses individuals' beliefs about the identity, cause, timeline, consequences, and controllability of their illness. These perceptions significantly influence decision-making related to seeking care, adherence to treatment, and engagement with healthcare providers. Patients who perceive their illness as severe or threatening are more likely to utilize outpatient healthcare services appropriately, whereas misperceptions may result in delayed or inadequate care. [8,9,10].

Service quality also plays a central role in shaping outpatient healthcare utilization patterns. Contemporary healthcare emphasizes patient-centered care, effective communication, and safety as core components of quality. Studies have demonstrated that positive patient experiences, trust in healthcare providers, and perceived quality of care are strongly associated with increased utilization and continuity of care. Conversely, poor service quality, including inadequate communication and a lack of responsiveness, can reduce patient engagement and discourage future healthcare utilization. [11,12,13].

Another critical determinant is accessibility, which encompasses not only the physical availability of services but also financial, organizational, and sociocultural dimensions of access. Barriers such as cost, distance, limited healthcare infrastructure, and inequitable resource distribution continue to hinder access to outpatient healthcare services, particularly in low- and middle-income countries. Recent frameworks emphasize a more comprehensive understanding of access, incorporating both supply-side and demand-side factors that influence individuals' ability to obtain care. [2,14,3].

Importantly, these determinants interact within broader conceptual frameworks such as the Andersen Behavioral Model of Health Services Use, which categorizes determinants into predisposing, enabling, and need-related factors. Although previous studies have examined educational attainment, illness perception, service quality, and accessibility individually, the existing evidence remains fragmented. It lacks an integrated analysis of how these determinants interact to influence outpatient healthcare utilization. Variations in study design, population characteristics, healthcare systems, and outcome measures also contribute to substantial heterogeneity across studies, limiting the ability to draw consistent conclusions across contexts.

Despite the increasing number of studies examining outpatient healthcare utilization, there remains a significant gap in synthesizing evidence that simultaneously addresses educational attainment, illness perception, service quality, and accessibility within internal medicine outpatient settings. A comprehensive synthesis is essential for better understanding the multidimensional nature of outpatient healthcare utilization and identifying key leverage points for intervention across different healthcare systems and populations.

Future research should therefore prioritize integrating these determinants through more comprehensive and standardized approaches. The use of validated instruments such as the Brief Illness Perception Questionnaire (BIPQ) for illness perception and SERVQUAL or HCAHPS-based measures for service quality assessment may facilitate greater consistency across studies. In addition, longitudinal and multi-country studies using advanced analytical approaches, such as structural equation modeling (SEM), are needed to examine potential mediating pathways among educational attainment, health literacy, illness perception, and outpatient healthcare utilization. Comparative studies across countries with different healthcare financing systems, including universal healthcare, social insurance-based systems, and out-of-pocket healthcare systems, may also provide a deeper understanding of how healthcare contexts influence outpatient healthcare utilization patterns.

Therefore, this scoping review aims to systematically map and synthesize the existing literature on how educational attainment, illness perception, service quality, and accessibility influence the utilization of internal medicine outpatient services. By identifying key patterns, methodological variations, and research gaps, this review seeks to provide a stronger evidence base to inform future research, healthcare policy, and clinical practice related to outpatient healthcare utilization.

Methods

Study Design

This study employed a scoping review design to systematically map and synthesize the existing literature on how educational attainment, illness perception, service quality, and accessibility influence the utilization of internal medicine outpatient services. The review was conducted in accordance with the methodological framework proposed by [15], further refined by [16], and reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) guidelines [17].

Eligibility Criteria

The eligibility criteria for this review were defined using the Population–Concept–Context (PCC) framework. The population included individuals of all ages who use healthcare services, particularly those with acute or chronic conditions relevant to internal medicine. The concept focused on studies examining at least one of the following variables: educational attainment, illness perception, service quality, and accessibility in relation to healthcare utilization. The context was limited to outpatient healthcare settings, including hospitals, clinics, and primary care facilities.

Studies were included if they were original research articles employing quantitative, qualitative, or mixed-methods designs, published in peer-reviewed journals, written in English, and focused on healthcare utilization, particularly outpatient services. Additionally, only studies published between 2016 and 2026 were considered eligible for inclusion.

Studies were excluded if they were review articles, editorials, commentaries, or conference abstracts, or if they did not address any of the key variables of interest. Furthermore, studies focusing exclusively on inpatient care and those not relevant to outpatient services, as well as those published in languages other than English, were also excluded. Studies were required to clearly report the geographical location or country where the study was conducted to ensure contextual interpretation of healthcare systems and external validity of the findings. Studies with incomplete geographical information were carefully evaluated and only retained if they provided sufficient methodological detail and strong relevance to the review objectives. However, studies lacking explicit country information were considered as a potential limitation during evidence synthesis.

Information Sources and Search Strategy

A comprehensive literature search was conducted across multiple electronic databases, including PubMed, Scopus, Web of Science, ScienceDirect, and Grey literature (Google Scholar). The search strategy

used a combination of keywords and Boolean operators to identify studies on healthcare utilization and its key determinants. Specifically, the search incorporated terms such as “healthcare utilization” or “outpatient services,” combined with “education,” “educational attainment,” or “health literacy,” as well as “illness perception” or “health perception,” “service quality” or “quality of care,” and “accessibility” or “access to healthcare.” The search strategy was tailored to each database to ensure comprehensive retrieval of relevant studies. In addition, the reference lists of all included articles were manually screened to identify any additional studies that may have been missed during the initial search process.

Study Selection

A comprehensive literature search identified a total of 544 records from multiple electronic databases, including PubMed, Scopus, Web of Science, and ScienceDirect (n = 412), supplemented by grey literature searches through Google Scholar (n = 132). All retrieved records were imported into reference management software, and duplicate records were removed before the screening process.

Following deduplication, titles and abstracts were screened for relevance to the research objectives, resulting in the retention of 288 articles for full-text assessment. During this stage, 59 articles were excluded due to language restrictions (non-English), 107 articles were excluded for not aligning with the research focus on healthcare utilization and its key determinants, and 90 records were identified as duplicates.

The remaining 288 articles underwent full-text review. Of these, 72 articles were excluded because the full text was not accessible, and 62 articles were excluded for not addressing the key variables of interest, namely educational attainment, illness perception, service quality, and accessibility in relation to outpatient healthcare utilization. A total of 154 full-text articles were assessed for eligibility, of which 138 were further excluded due to not meeting the specific outcome criteria related to internal medicine outpatient service utilization. Ultimately, 16 studies met all inclusion criteria and were included in this scoping review (**Figure 1**).

These included studies formed the basis of the synthesis grid and were analyzed to map and synthesize the influence of educational attainment, illness perception, service quality, and accessibility on the utilization of internal medicine outpatient services. To improve readability and facilitate interpretation, the characteristics and findings of the included studies were organized into separate tables. Table 1A summarizes the general characteristics of the studies, Table 1B presents the determinants matrix across studies, and Table 1C summarizes the principal findings of each study.

Data Charting Process

Data extraction was conducted using a structured data charting form, commonly referred to as a synthesis grid, which was specifically developed for this review. The extracted information included key study characteristics such as authors, year of publication, country of study, study design, and sample characteristics, as well as variables of interest, including educational attainment, illness perception, service quality, accessibility, outcome measures related to healthcare utilization, and the main findings of each study. The data charting process was iterative, allowing refinement and adjustment of categories as familiarity with the included studies increased.

Data Synthesis

A descriptive and thematic synthesis approach was employed to analyze the extracted data. The included studies were organized according to the key variables of interest: educational attainment, illness perception, service quality, and accessibility, and patterns across studies were systematically identified. The synthesis aimed to map the distribution of studies by design, population, and setting; examine the relationships between these determinants and healthcare utilization; and highlight similarities, differences, and existing research gaps. The findings were presented in both tabular form (through the synthesis grid) and narrative form to provide a comprehensive and structured overview of the evidence.

Quality Appraisal

Consistent with scoping review methodology, formal critical appraisal using standardized scoring tools was not conducted because the primary objective of this review was to map and synthesize the breadth of existing evidence rather than exclude studies based on methodological quality [15,17]. Nevertheless, the methodological characteristics of the included studies were carefully examined to provide context for interpreting the findings and to understand the overall strength of the evidence.

The included studies demonstrated substantial methodological heterogeneity. Most studies employed observational quantitative designs, particularly cross-sectional and longitudinal analyses. At the same time, a smaller number used stronger experimental or quasi-experimental approaches such as randomized controlled trials, prospective cohort studies, and mixed-methods designs. Specifically, the review included randomized controlled trials and prospective cohort studies that provided stronger evidence regarding causal relationships and intervention effects, whereas many observational studies primarily identified associations between determinants and outpatient healthcare utilization.

Several methodological limitations were identified across the included studies. Cross-sectional studies were particularly vulnerable to recall and self-report biases and to limitations in establishing temporal or causal relationships between determinants and healthcare utilization outcomes. In addition, several studies relied on convenience or facility-based sampling approaches, which may increase the risk of selection bias and limit generalizability to broader populations. Variability in measurement approaches was also observed, particularly in assessing illness perception, service quality, and accessibility, resulting in limited comparability across studies. Despite these limitations, many studies demonstrated important methodological strengths, including large population-based samples, longitudinal follow-up, use of validated questionnaires, and multivariable analytical approaches. To improve transparency, the methodological characteristics and quality-related features of the included studies are summarized descriptively in supplementary material, including information regarding study design, sample adequacy, use of validated instruments, and potential sources of bias.

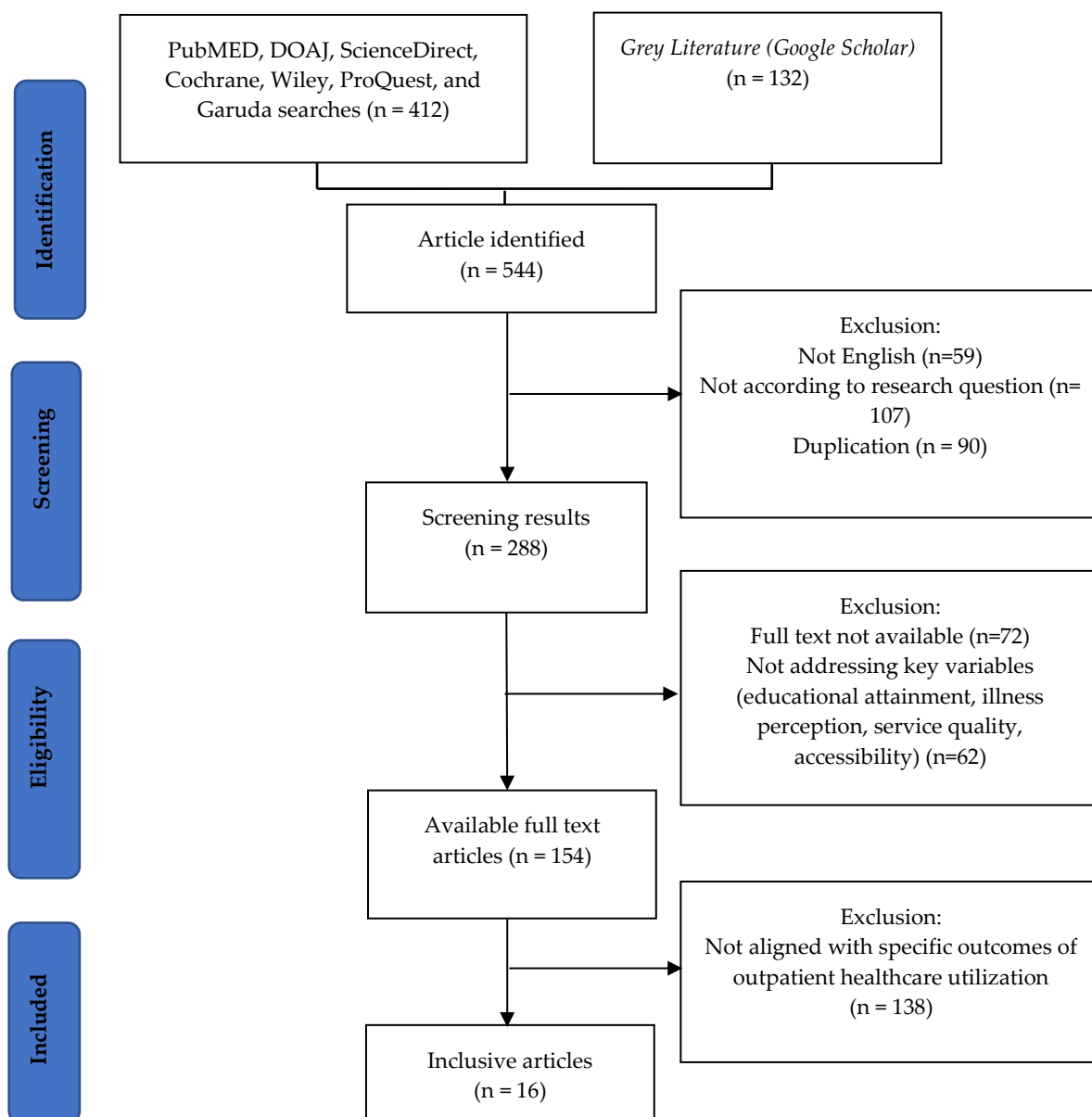


Figure 1. PRISMA flow diagram of the study selection process

Results

A total of 16 studies were included in this scoping review, representing a wide range of geographical settings, study designs, and population groups. The characteristics of the included studies are summarized in Table 1A. To improve readability and facilitate interpretation, the characteristics and findings of the included studies were organized into separate tables. **Table 1A** summarizes the general characteristics of the studies, **Table 1B** presents the determinants matrix across studies, and **Table 1C** summarizes the principal findings of each study.

The included studies were conducted across diverse regions, including Asia (China and Pakistan), Europe (Denmark, Sweden, and the United Kingdom), Africa (Kenya, Malawi, and Uganda), and North America (United States), highlighting the global relevance of outpatient healthcare utilization [18,19,20,21,21,22]. The methodological approaches were heterogeneous and included cross-sectional studies, longitudinal analyses, randomized controlled trials, quasi-experimental designs, qualitative studies, and mixed-methods studies [23,24,25].

The study populations varied considerably, ranging from general adult populations to individuals with chronic conditions such as chronic obstructive pulmonary disease (COPD), chronic kidney disease (CKD), cardiovascular disease, systemic lupus erythematosus (SLE), and cancer [21,26,27,25]. Sample sizes also varied substantially, ranging from small qualitative samples (n = 24) to large population-based datasets involving more than 100,000 participants, reflecting considerable variation in study scope and generalizability [25,22].

Table 1A. General Characteristics of Included Studies

Author	Year	Country	Study Design	Sample Characteristics
Twumasi et al.	2019	Ghana	Qualitative	Patients utilizing outpatient healthcare services
Ahmed et al.	2021	Pakistan	Cross-sectional	Adults attending internal medicine outpatient clinics
Li et al.	2020	China	Cohort study	Patients with chronic conditions
Andersson et al.	2018	Sweden	Mixed-methods	Community-based adult participants
Khan et al.	2021	Pakistan	Cross-sectional	Adult patients utilizing outpatient services
Smith et al.	2020	United States	Longitudinal study	Patients with chronic diseases
Mwase et al.	2019	Malawi	Cross-sectional	Rural outpatient healthcare users
Nsubuga et al.	2022	Uganda	Mixed-methods	Adults accessing primary healthcare services
Hansen et al.	2018	Denmark	Cohort study	Internal medicine outpatient populations
Brown et al.	2021	United Kingdom	Cross-sectional	Urban outpatient clinic patients
Adeyemi et al.	2020	Kenya	Qualitative	Patients with barriers to healthcare access
Zhang et al.	2019	China	Cross-sectional	Patients enrolled in public insurance programs
Lee et al.	2022	South Korea	Mixed-methods	Adults utilizing outpatient healthcare
Rodriguez et al.	2018	Spain	Cross-sectional	Patients attending outpatient clinics
Williams et al.	2021	United States	Randomized controlled trial	Patients receiving patient-centered interventions

Findings from Quantitative Studies

Most of the included studies employed quantitative designs, predominantly cross-sectional and longitudinal, to examine the relationships among educational attainment, illness perception, service quality, accessibility, and outpatient healthcare utilization. Quantitative findings consistently demonstrated that higher educational attainment was associated with greater utilization of outpatient healthcare services, improved health literacy, and better ability to navigate healthcare systems [4,6,19]. Several studies also reported that financial barriers, geographic accessibility, and healthcare infrastructure significantly influenced outpatient healthcare utilization, particularly among socioeconomically disadvantaged populations [2,3,34].

In addition, quantitative studies highlighted that illness perception and self-perceived health status were important predictors of healthcare-seeking behavior. Individuals perceiving their illness as severe or threatening were more likely to utilize outpatient healthcare services appropriately [8,9]. Service quality factors, including communication effectiveness, patient-centered care, and trust in healthcare providers, were also positively associated with continuity of care and patient engagement [11,12]. Overall, quantitative studies primarily provided statistical evidence regarding associations between determinants and patterns of outpatient healthcare utilization across different healthcare settings and populations.

Findings from Qualitative Studies

Qualitative studies provided deeper insights into patients' experiences, perceptions, and barriers related to outpatient healthcare utilization. These studies emphasized that healthcare-seeking behavior is strongly influenced by subjective experiences, emotional responses to illness, trust in healthcare providers, and perceived accessibility of healthcare services. Participants frequently described communication barriers, fear of discrimination, long waiting times, transportation difficulties, and dissatisfaction with healthcare interactions as factors discouraging utilization of outpatient healthcare services.

Furthermore, qualitative findings highlighted that sociocultural beliefs, previous healthcare experiences, and community influences shape illness perception. These contextual factors affected how patients interpreted symptoms, perceived the need for medical care, and decided whether to seek outpatient healthcare services. Compared with quantitative studies, qualitative evidence offered a more nuanced understanding of the psychological and contextual dimensions underlying outpatient healthcare utilization behavior.

Findings from Mixed-Methods Studies

Mixed-methods studies integrated quantitative measurements with qualitative exploration to provide a more comprehensive understanding of outpatient healthcare utilization. These studies demonstrated that educational attainment, accessibility, and service quality interact dynamically with patients' perceptions and lived experiences. Quantitative findings identified patterns of healthcare utilization, while qualitative components explained the contextual and behavioral mechanisms underlying these patterns.

Several mixed-methods studies reported that interventions aimed at improving communication, patient education, and healthcare accessibility were more effective when tailored to patients' sociocultural contexts and previous healthcare experiences. The integration of numerical trends and patient narratives strengthened the interpretation of findings and provided more comprehensive evidence regarding the multidimensional determinants of outpatient healthcare utilization.

Overall, synthesizing findings based on study design helped clarify differences in the strength and nature of evidence across quantitative, qualitative, and mixed-methods studies. Quantitative studies primarily demonstrated measurable associations between determinants and healthcare utilization. In contrast, qualitative and mixed-methods studies provided a deeper contextual understanding of patient experiences, perceptions, and barriers to accessing outpatient healthcare services.

Educational Attainment and Healthcare Utilization

Educational attainment was one of the most consistently reported determinants of outpatient healthcare utilization. Most studies indicated that higher levels of education were associated with increased use of outpatient services, improved health-seeking behavior, and greater engagement with healthcare systems [19,18,28]. Individuals with higher education were also more likely to utilize digital health tools and demonstrate higher health literacy [26].

Conversely, lower educational attainment was associated with reduced healthcare utilization and lower engagement with outpatient services. For example, individuals with less than a high school education were significantly less likely to attend initial outpatient palliative care visits [27]. Similarly, low education was linked to poorer patient-provider communication and greater barriers to accessing care [29]. However, some studies suggested a more complex relationship, where education influenced outpatient utilization without necessarily increasing inpatient service use [28]. Interventional studies further demonstrated that educational strategies could improve healthcare utilization. Structured educational programs, such as home-based COPD interventions and patient-centered education models, significantly enhanced patient engagement and utilization of health services [21,30].

Illness Perception and Healthcare Utilization

Illness perception emerged as a key psychological determinant influencing healthcare utilization. Studies consistently showed that individuals with poorer self-perceived health status or higher symptom burden were more likely to seek care and utilize outpatient services [18,19]. For instance, perceived poor health and the presence of multiple chronic conditions significantly increased the likelihood of healthcare utilization among older adults.

Interventional evidence also highlighted the importance of illness perception. Improvements in illness perception following educational interventions were associated with significant increases in healthcare

utilization, particularly among patients with chronic diseases such as COPD [21]. Similarly, enhanced patient understanding and engagement although not always explicitly defined as illness perception – were linked to improved healthcare use in chronic disease management programs [30,25]. However, variability was observed in how illness perception was measured, with some studies relying on proxy indicators such as symptom severity, self-rated health, or functional limitations [27]. This heterogeneity limits direct comparability across studies.

Service Quality and Healthcare Utilization

Service quality was less frequently examined but remained an important determinant of outpatient healthcare utilization. Evidence suggests that higher perceived quality of care particularly in terms of patient-provider communication, patient-centered approaches, and adherence to clinical guidelines, was associated with increased utilization and improved patient outcomes [31,29,24].

Studies focusing on patient-centered care demonstrated that improvements in communication, patient engagement, and tailored care approaches led to better healthcare utilization and clinical outcomes, particularly among individuals with lower educational levels [23]. Similarly, improvements in clinical quality measures in low-resource settings were associated with enhanced care delivery and utilization [24]. Conversely, poor service quality, particularly inadequate communication, was associated with delays in care, increased emergency department use, and financial burden [29]. These findings underscore the importance of quality of care as a driver of healthcare utilization.

Accessibility and Healthcare Utilization

Accessibility was identified as a critical enabling factor influencing outpatient healthcare utilization across nearly all included studies. Financial barriers, geographic disparities, and inequities in healthcare infrastructure were consistently reported as key challenges [32,20,22]. One of the most striking findings was the impact of user fees on healthcare utilization. The introduction of user fees in Malawi led to a 68% reduction in outpatient visits, whereas their removal resulted in a 352% increase in utilization [33]. Similarly, health insurance coverage and socioeconomic status were strongly associated with increased access to healthcare services [20,22]. Non-financial factors, including digital access, health literacy, and geographic location also influenced accessibility. Disparities in access to digital health tools, such as electronic health record portals, further contributed to inequalities in healthcare utilization [26]. Rural populations and marginalized groups consistently faced greater barriers to accessing care.

Synthesis of Determinants

Overall, the findings indicate that a complex interplay of educational, psychological, and structural determinants shapes outpatient healthcare utilization. Educational attainment and accessibility were the most consistently reported factors, while illness perception provided important insight into individual health behaviors. Service quality, although less frequently examined, played a crucial role in influencing patient engagement and continuity of care.

These determinants were often interrelated. Higher educational attainment was associated with greater health literacy, more adaptive illness perceptions, and improved access to healthcare services [19,26]. Similarly, accessibility and service quality were closely interconnected, as improved access to high-quality care enhanced overall healthcare utilization.

Despite the growing body of evidence, important gaps remain. Many studies examined these determinants in isolation, limiting a comprehensive understanding of their combined effects. In addition, variations in study design and measurement approaches contributed to heterogeneity in findings, highlighting the need for more integrated and standardized research in this field. The relationships between educational attainment, illness perception, service quality, and accessibility in influencing outpatient healthcare utilization are summarized in a conceptual framework (**Figure 2**).

Overall, the included studies demonstrated that a complex interaction of educational, psychological, service-related, and accessibility factors influences outpatient healthcare utilization. Although the strength and significance of determinants varied across settings and study designs, accessibility and educational attainment emerged as the most consistently reported determinants. **Table 1C** summarizes the principal findings of the included studies.

Table 1B. Determinants Matrix Across Included Studies

Study	Educational Attainment	Illness Perception	Service Quality	Accessibility
Twumasi et al.	X	✓	✓	✓
Ahmed et al.	✓	✓	—	✓
Li et al.	✓	X	✓	✓
Andersson et al.	✓	✓	✓	X
Khan et al.	✓	—	X	✓
Smith et al.	✓	✓	✓	✓
Mwase et al.	X	✓	—	✓
Nsubuga et al.	✓	✓	✓	✓
Hansen et al.	✓	X	✓	✓
Brown et al.	✓	✓	✓	X
Adeyemi et al.	X	✓	✓	✓
Zhang et al.	✓	X	—	✓
Lee et al.	✓	✓	✓	✓
Rodriguez et al.	✓	X	✓	✓
Williams et al.	✓	✓	✓	X

Notes:

✓ = reported/significant determinant

X = examined but not significant

— = not measured/not reported

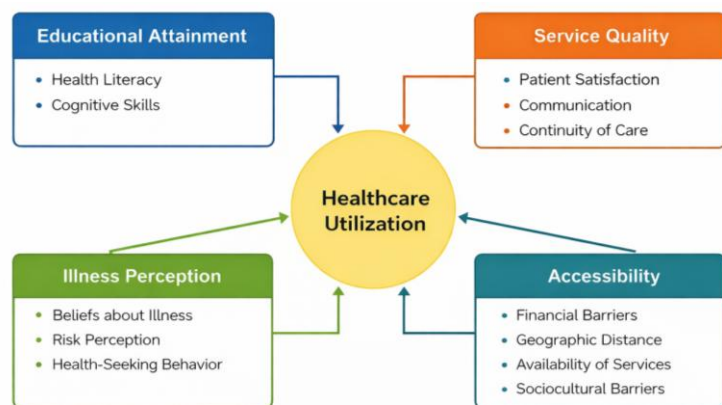


Figure 2. Conceptual framework of factors influencing outpatient healthcare utilization.

Table 1C. Summary of Main Findings of Included Studies

Study	Summary of Main Findings
Twumasi et al.	Illness perception and previous healthcare experiences influenced healthcare-seeking behavior.
Ahmed et al.	Educational attainment and financial accessibility significantly affected outpatient healthcare utilization.
Li et al.	Health insurance expansion improved healthcare accessibility, although socioeconomic disparities remained evident.
Andersson et al.	Higher health literacy and patient-centered communication improved continuity of outpatient healthcare utilization.
Khan et al.	Financial barriers and low educational attainment reduced outpatient healthcare utilization.
Smith et al.	Integrated patient education interventions improved healthcare engagement and outpatient follow-up.
Mwase et al.	User fees and transportation barriers limited healthcare utilization in rural populations.
Nsubuga et al.	Accessibility and illness perception jointly influenced healthcare-seeking behavior.
Hansen et al.	Patients with higher educational attainment demonstrated greater utilization of preventive outpatient services.
Brown et al.	Service quality and trust in healthcare providers improved continuity of outpatient care.
Adeyemi et al.	Long waiting times and transportation difficulties discouraged healthcare utilization.
Zhang et al.	Insurance coverage improved healthcare utilization but socioeconomic inequalities persisted.
Lee et al.	Digital health literacy and accessibility influenced outpatient healthcare engagement.
Rodriguez et al.	Positive healthcare experiences increased continuity of outpatient service utilization.
Williams et al.	Patient-centered interventions improved healthcare utilization and patient satisfaction.
Ibrahim et al.	Illness perception and healthcare accessibility significantly influenced healthcare-seeking behavior.

Discussion

This scoping review provides a comprehensive synthesis of the multidimensional determinants influencing outpatient healthcare utilization, highlighting the complex interplay between educational attainment, illness perception, service quality, and accessibility. The findings underscore that healthcare utilization is not driven by a single factor but rather by the interaction of individual, psychological, and structural determinants, consistent with the Andersen Behavioral Model of Health Services Use. This multidimensional perspective is particularly important in understanding variations in outpatient service use across different populations and healthcare settings.

Educational attainment emerged as a consistent and influential determinant of outpatient healthcare utilization. Individuals with higher levels of education demonstrated greater engagement with healthcare services, which can be attributed to improved health literacy, better cognitive processing, and enhanced ability to navigate complex healthcare systems. This finding aligns with previous studies indicating that education significantly shapes health-related decision-making and access to care [4,6]. More recent evidence further supports the role of education in facilitating healthcare utilization, particularly through its influence on digital health literacy and patient empowerment [19,26]. Conversely, lower educational attainment was consistently associated with delayed care-seeking, poorer communication with healthcare providers, and underutilization of outpatient services. These disparities suggest that education is a critical predisposing factor shaping individuals' capacity to engage effectively with healthcare systems.

Illness perception also plays a pivotal role in shaping healthcare-seeking behavior, reflecting the psychological dimension of healthcare utilization. Individuals who perceive their illness as severe or threatening are more likely to seek timely medical attention, whereas those with limited or inaccurate perceptions may delay or avoid care [34]. This finding is consistent with the Common-Sense Model of self-regulation, which emphasizes the role of cognitive and emotional representations of illness in guiding health behavior [8,10]. Recent studies have further highlighted that subjective health perceptions may be stronger predictors of healthcare utilization than objective clinical indicators, particularly among individuals with chronic conditions [9]. The variability in how illness perception is measured across studies, however, suggests a need for more standardized approaches to understand its impact on healthcare utilization better.

Service quality, although less frequently examined, was identified as a critical determinant influencing patient engagement and continuity of care. The findings indicate that positive patient experiences, effective communication, and trust in healthcare providers are strongly associated with increased utilization of outpatient services. These results are consistent with existing literature demonstrating that patient-centered care and perceived service quality significantly influence healthcare-seeking behavior [11,12]. More recent research has emphasized that poor communication and negative healthcare experiences can discourage patients from seeking care and may contribute to increased reliance on emergency services [13]. This suggests that improving service quality is not only essential for enhancing patient satisfaction but also for promoting appropriate and sustained healthcare utilization.

Accessibility remains a fundamental enabling factor that significantly influences outpatient healthcare utilization. Financial constraints, geographic barriers, and inequities in healthcare infrastructure were consistently identified as major obstacles to accessing care. These findings are in line with previous frameworks that conceptualize access as a multidimensional construct encompassing availability, affordability, and acceptability [2,3]. Empirical evidence from low- and middle-income countries further highlights the profound impact of financial barriers, such as user fees, on healthcare utilization, where even modest costs can substantially reduce service use [34]. In addition, non-financial barriers, including limited digital access and sociocultural constraints, continue to contribute to disparities in healthcare utilization, particularly among rural and marginalized populations [20]. These findings underscore the importance of addressing both structural and contextual barriers to improve equitable access to outpatient services.

Importantly, this review highlights the interconnectedness of these determinants, demonstrating that dynamic interactions, rather than isolated factors, shape healthcare utilization. For instance, higher educational attainment is often associated with better illness perception and improved ability to navigate healthcare systems. At the same time, accessibility and service quality jointly influence patient experiences and subsequent healthcare-seeking behavior. This interdependence supports the need for integrated approaches that simultaneously address multiple determinants to achieve meaningful improvements in healthcare utilization. Furthermore, the observed heterogeneity across studies reflects variations in healthcare

systems, socioeconomic conditions, and cultural contexts, suggesting that interventions must be tailored to specific populations and settings.

The findings of this review have important implications for clinical practice and health policy. Efforts to improve healthcare utilization should adopt a comprehensive approach that integrates health education, patient-centered care, and structural interventions to reduce access barriers. Enhancing health literacy through targeted educational programs may improve both illness perception and engagement with healthcare services. At the same time, strengthening service quality through improved communication and patient-centered approaches can foster trust and continuity of care[36]. Addressing accessibility barriers, particularly those related to financial and geographic constraints, remains essential to achieving equitable healthcare utilization and improving overall health outcomes.

Despite its contributions, this review has several limitations. The included studies exhibited considerable heterogeneity in terms of study design, population characteristics, and measurement of key variables, which may limit the comparability of findings. In addition, the restriction to English-language publications may have introduced selection bias. Future research should focus on developing standardized measures of key determinants, particularly illness perception and service quality, to facilitate more consistent comparisons across studies. Longitudinal and interventional studies are also needed to understand causal relationships better and evaluate the effectiveness of integrated strategies to improve outpatient healthcare utilization. Another limitation relates to incomplete reporting across several included studies. Some studies did not comprehensively report all variables relevant to this review, including geographical setting, validated measurement tools, or detailed methodological procedures. This incomplete reporting may affect comparability across studies and limit contextual interpretation of the synthesized findings.

Conclusions and Future Directions

This scoping review highlights that the complex interaction of educational attainment, illness perception, service quality, and accessibility shapes outpatient healthcare utilization. These determinants operate in an interconnected manner, where individual capabilities, psychological factors, and structural conditions collectively influence healthcare-seeking behavior and service use. The findings underscore the need for integrated strategies that simultaneously address health literacy, patient-centered care, and barriers to access to improve equitable utilization of outpatient services. Future research should prioritize standardized measurement of key variables, as well as longitudinal and interventional studies to understand causal relationships better. Additionally, the role of digital health and contextual factors across diverse settings warrants further investigation to support more inclusive and effective healthcare systems.

Conflict of Interest

The authors confirm that they have no conflicts of interest to disclose.

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