



Patient Experience of Quality on Diabetes Mellitus Care in Primary Health Care: Integrative Literature Review

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Abstract

This review aims to summarize the evidence from previous studies on patients' experiences of quality diabetes mellitus care in primary healthcare. Methods: Referring to Whittemore & Knaff's methodology for integrative literature review by searching articles in six databases namely: PubMed, CINAHL, EBSCOhost, ProQuest, ScienceDirect, Garuda; Google Scholar search engine; and one publisher website (Wiley Online Library) between 2017-2022. Inclusion criteria included: original articles, samples of DM patients aged >18 years, from all countries with English and Indonesian text. Results: Data were analysed by assessing the similarity of results between studies, then synthesized using narrative analysis. Seven studies met the inclusion criteria, five of which reported patients' experiences of low-quality DM care in primary healthcare due to inadequate structures, suboptimal care processes and clinical outcomes. Only two studies reported experiences of high-quality DM care due to adequate equipment, schedule organization, care coordination and good doctor-patient interaction. Conclusions: Patients' experiences of low-quality DM care in primary healthcare were attributed to inadequate structures, suboptimal care processes and poor clinical outcomes, whereas high quality DM care was associated with adequate equipment, good scheduling, care coordination and good doctor-patient interactions.

Introduction

Diabetes mellitus (DM) has become one of the most pressing chronic health challenges worldwide, not only because of its rapidly increasing prevalence but also due to its long-term clinical, social, and economic consequences. In 2021, the global prevalence of diabetes among adults aged 20 to 79 years reached approximately 537 million people, representing nearly 9.8 percent of the world's population (World Health Organization, 2021). This number continues to rise, particularly in low- and middle-income countries, where health systems often struggle to respond adequately to the growing burden of chronic diseases. Diabetes is not merely a metabolic disorder characterized by elevated blood glucose levels but a complex, lifelong condition that progressively affects multiple organ systems and significantly reduces quality of life when not properly managed.

Prolonged and poorly controlled diabetes mellitus is associated with a wide range of severe complications, including cardiovascular disease, stroke, neuropathy, retinopathy leading to blindness, renal failure, and premature death (Surianti et al., 2017; El-shareif, 2018). Beyond these biomedical consequences, diabetes also exerts profound psychological and social impacts, contributing to anxiety, emotional distress, and long-term dependence on health

services (Irawandi, 2020). In 2021 alone, an estimated 6.7 million deaths worldwide were attributed directly or indirectly to diabetes and its complications (International Diabetes Federation, 2022). This escalating burden has placed unprecedented pressure on health systems, particularly primary health care services, which serve as the first and often most important point of contact for people living with chronic conditions.

The growing demand for diabetes care has exposed deep structural and organizational weaknesses in many health systems, especially in settings where services remain oriented toward acute and episodic care rather than long-term, continuous management. As a result, many patients experience fragmented services, inconsistent follow-up, limited access to essential diagnostics and medications, and suboptimal coordination between levels of care. These systemic constraints do not only affect clinical outcomes but also shape how patients perceive, experience, and evaluate the quality of the care they receive. Indeed, increasing evidence suggests that the rising burden of chronic diseases, including diabetes, has contributed to deteriorating patient experiences and declining trust in health systems in many contexts (Mira et al., 2016).

In response to these challenges, the global health community has increasingly emphasized the importance of quality of care as a central pillar of health system performance. The World Health Organization defines quality of care as the extent to which health services provided to individuals and populations improve desired health outcomes and are consistent with current professional knowledge, while being safe, effective, timely, efficient, equitable, and people-centered (World Health Organization, 2020). Within this framework, high-quality care is no longer understood solely in terms of technical competence or clinical effectiveness but also in terms of how care is experienced by patients as users of the health system. Good quality care is expected to reduce morbidity and mortality, enhance patient satisfaction and trust, and improve adherence to long-term treatment, whereas poor quality care leads to unnecessary suffering, persistent symptoms, loss of function, wasted resources, and erosion of confidence in health services (Stone et al., 2013; Kruk et al., 2018).

For chronic conditions such as diabetes mellitus, the importance of quality of care is even more pronounced. Diabetes management requires continuous monitoring, long-term medication adherence, lifestyle modification, regular screening for complications, and sustained interaction between patients and health care providers. Consequently, the effectiveness of diabetes care depends not only on the availability of medical technologies and clinical guidelines but also on the organization of services, the competence and continuity of health care teams, and the quality of communication and relationships between providers and patients. High-quality, patient-centered chronic care has been shown to improve both clinical outcomes and patient experiences, particularly when care is delivered through coordinated, multidisciplinary, and system-oriented approaches (Cramm & Nieboer, 2013).

A growing body of literature suggests that patient experience is not merely a secondary or subjective aspect of health care quality but constitutes a core dimension of quality itself. Patient experience reflects how individuals perceive their interactions with the health system, including accessibility of services, communication with providers, involvement in decision-making, continuity of care, and respect for their values and preferences. In the context of diabetes care, previous studies have demonstrated that patient-centered approaches and positive care experiences are strongly associated with better self-management, improved adherence to treatment, and more favorable clinical outcomes (Tricco et al., 2012). Furthermore, effective diabetes management has been shown to require not only technical interventions but also an organized and systematic care environment supported by a coordinated team of dedicated health professionals working within a patient-centered model of care (Schmittiel et al., 2017).

Despite these advances, the quality of diabetes care remains highly variable across and within countries. Numerous studies and reviews have examined different aspects of diabetes care quality, including the effectiveness of quality improvement strategies, the impact of integrated care models, and the role of clinical registries in improving outcomes. For example, a large systematic review involving 48 cluster randomized controlled trials demonstrated that interventions targeting chronic disease management systems and patient-mediated quality improvement strategies play a critical role in improving diabetes management (Tricco et al., 2012). Another systematic review examining integrated care for patients with type 2 diabetes emphasized that successful implementation depends heavily on organizational context and adequate investment at the system level (Busetto et al., 2016). Similarly, a review of 17 studies on the impact of clinical registries found generally positive effects on care processes and clinical outcomes (Hoque et al., 2017).

However, while these studies provide valuable insights into system performance and clinical effectiveness, they largely approach quality of care from the perspective of providers, organizations, or health systems. Much less attention has been paid to how quality of diabetes care is experienced and interpreted by patients themselves, particularly within primary health care settings. This gap is noteworthy because primary health care plays a central role in the long-term management of diabetes, especially in low- and middle-income countries, where specialist services are limited and continuity of care depends heavily on frontline facilities.

Although several individual studies have explored patients' experiences of diabetes care in primary health care, their findings remain fragmented, context-specific, and sometimes contradictory. Some studies report positive experiences associated with good coordination, adequate equipment, and strong doctor–patient relationships, while others highlight persistent deficiencies in infrastructure, care processes, and clinical outcomes. To date, however, there has been no comprehensive synthesis that systematically integrates and interprets this body of evidence to generate a coherent understanding of how patients experience the quality of diabetes care in primary health care settings.

Moreover, much of the existing literature implicitly reflects the classic structure–process–outcome framework of health care quality, even when this is not explicitly stated. According to this perspective, quality of care is shaped by the interaction between health system structures (such as infrastructure, workforce, and equipment), care processes (including clinical practices, communication, and continuity of care), and outcomes (both clinical results and patient-reported experiences). Yet, few reviews have explicitly applied this framework to analyze diabetes care from the patient's point of view in primary health care contexts.

Against this background, there is a clear need for a systematic and conceptually grounded synthesis of existing studies that focuses specifically on patients' experiences of the quality of diabetes care in primary health care. Such a synthesis is not only important for identifying recurring problems and good practices but also for clarifying how structural and organizational factors shape care processes and, ultimately, influence patient outcomes and experiences. Understanding these relationships is essential for designing more responsive, equitable, and patient-centered primary care systems for people living with diabetes.

Therefore, this integrative literature review aims to synthesize evidence from previous studies on patients' experiences of the quality of diabetes mellitus care in primary health care. By systematically examining and integrating findings across diverse settings, this review seeks to provide a more comprehensive and analytically grounded understanding of how quality of care is experienced by patients, what factors contribute to high or low quality care, and what this implies for the organization and improvement of primary health care services for diabetes management.

Methods

Study Design

This study employed an integrative literature review approach following the methodological framework proposed by Whittmore and Knafl (2005). An integrative review was chosen because it allows for the inclusion and synthesis of evidence derived from studies with diverse methodological designs, including quantitative, qualitative, and mixed-methods research. This approach is particularly suitable for complex health service topics such as patient experience and quality of care, where understanding emerges not only from clinical outcomes but also from organizational, relational, and experiential dimensions.

The review process was conducted through a series of interrelated stages, including problem identification, formulation of the review question, development of inclusion and exclusion criteria, literature search, study selection, data extraction, data analysis, and synthesis of findings. These stages were implemented in a systematic and transparent manner to ensure methodological rigor and analytical coherence.

Identification of the Problem and Review Question

The increasing burden of diabetes mellitus and the central role of primary health care in long-term disease management have been accompanied by growing concerns regarding the quality of care and patients' experiences within health systems. Although a number of studies have examined aspects of diabetes care quality and patient experience in primary care settings, their findings remain fragmented and context-specific, and no comprehensive synthesis focusing specifically on patient experience has been available.

Based on this gap, the review was guided by the following question: How do patients experience the quality of diabetes mellitus care in primary health care?

To structure the review question, a modified PIO framework was adopted following Poeira and Zangão (2022), where P referred to the population of adult patients with diabetes mellitus, I/E referred to the phenomenon of interest, namely patient experience, and O referred to the outcome of interest, namely perceived quality of diabetes care in primary health care settings.

Eligibility Criteria

Clear inclusion and exclusion criteria were defined prior to the literature search to ensure consistency and relevance in study selection. Studies were included if they met the following criteria. First, they involved adult patients aged over 18 years diagnosed with diabetes mellitus and receiving care in primary health care or equivalent outpatient settings. Second, they were published between 2017 and 2022 in order to capture recent evidence reflecting contemporary health system contexts. Third, they were original empirical studies published in either English or Indonesian.

Studies were excluded if they were review articles, editorials, commentaries, or theoretical papers. Duplicate publications were removed. Studies were also excluded if their focus did not correspond to the review question, if they did not report patient perspectives or experiences, or if the study population did not consist of patients with diabetes mellitus in primary or outpatient care settings.

Search Strategy

The literature search was conducted in several stages to maximize coverage and minimize the risk of missing relevant studies. An initial exploratory search was first performed in PubMed to identify key terms and refine the search strategy. This was followed by a comprehensive search across multiple electronic databases, including PubMed, CINAHL, EBSCOhost,

ProQuest, ScienceDirect, and Garuda, as well as the Google Scholar search engine and the Wiley Online Library publisher platform.

The search was conducted between 8 and 15 June 2022. Keywords and Boolean operators were combined to capture variations of the main concepts, including diabetes mellitus, quality of care, patient experience, and primary health care. The complete search strategy and results for each database are presented in Table 1.

In addition, the reference lists of all included articles were manually screened to identify any potentially relevant studies that may not have been captured through the electronic database searches.

Table 1. Search results for articles based on keywords

Databases	Keywords	Result
PuBmed	((Diabetes Mellitus OR Diabetes) AND (Quality of Care OR Quality of Health Care)) AND (Patients experience's OR Patients Life Change Events) AND (Primary Health Care OR Primaries Health Services)	9
CINAHL	"Diabetes Mellitus OR Diabetes" AND "Quality of Care OR Quality of Health Care" AND "Patients experience's OR Patients Life Change Events" AND "Primary Health Care OR Primaries Health Services"	24
EBSCOhost	(Diabetes Mellitus OR Diabetes) AND (Quality of Care OR Quality of Health Care) AND (Patients experience's OR Patients Life Change Events) AND (Primary Health Care OR Primaries Health Services)	37
ProQuest	(Diabetes Mellitus OR Diabetes) AND (Quality of Care OR Quality of Health Care) AND (Patients experience's OR Patients Life Change Events) AND (Primary Health Care OR Primaries Health Services)	40
ScienceDirect	"Diabetes Mellitus OR Diabetes" AND "Quality of Care OR Quality of Health Care" AND "Patients experience's OR Patients Life Change Events" AND "Primary Health Care OR Primaries Health Services"	2
Garuda	"Diabetes Melitus OR Diabetes" AND "Kualitas Perawatan" AND "Pengalaman Pasien" AND "Pelayanan Kesehatan Primer"	0
Google Scholar	"diabetes melitus OR diabetes" AND "kualitas perawatan" AND "pengalaman pasien" AND "pelayanan kesehatan primer"	1
Wiley Online Library	"Diabetes Mellitus OR Diabetes" AND "Quality of Care OR Quality of Health Care" AND "Patients experience's OR Patients Life Change Events" AND "Primary Health Care OR Primaries Health Services"	242

Study Selection

The study selection process was carried out in several sequential steps. First, titles and abstracts of all retrieved records were screened by the first author to assess their relevance to the review question. Second, all potentially eligible articles were imported into the Mendeley reference management software, where duplicate records were identified and removed. Third, full texts of the remaining articles were retrieved and assessed for eligibility.

To enhance the credibility of the selection process, decisions regarding inclusion and exclusion were discussed with the second and third authors. Any disagreements were resolved through discussion until consensus was reached.

The initial search yielded 355 records. After removing articles published before 2017, studies with non-diabetes populations, and studies not published in English or Indonesian, 166 records remained for screening. After removal of duplicates and irrelevant articles based on title and abstract screening, 17 full-text articles were assessed for eligibility. Of these, 10 were excluded because they did not address the review question, resulting in a final sample of seven studies included in the synthesis. The study selection process is illustrated in Figure 1.

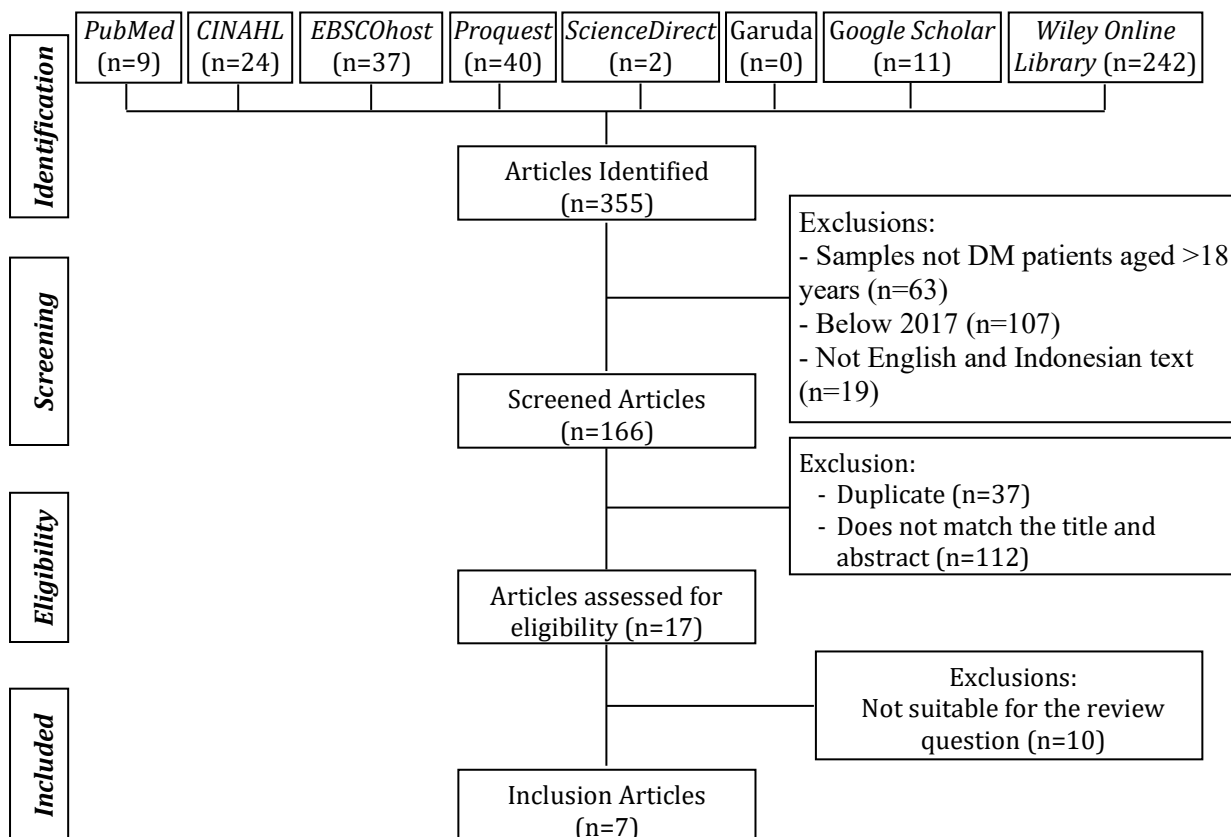


Figure 1. Article Search Flow

Data Extraction

Data were extracted from each included study using a structured extraction form developed for the purposes of this review. The extracted information included authors and year of publication, country of study, study aim, research design, sample characteristics, study setting, data collection methods, and main findings related to patient experience and quality of care.

To ensure consistency and accuracy, data extraction was initially conducted by the first author and then reviewed by the co-authors. Any discrepancies were discussed and resolved through joint review of the original articles.

Data Analysis and Synthesis of Results

Data analysis followed the principles of integrative synthesis as described by Whittemore and colleagues. Rather than aggregating findings statistically, the analysis focused on identifying patterns, relationships, and recurring conceptual themes across studies.

The analytical process began with repeated reading of the extracted findings to gain an in-depth understanding of each study. The findings were then compared across studies to identify

similarities, differences, and recurring emphases. Through this iterative process, the evidence was progressively organized into higher-order conceptual categories.

Guided by the emerging patterns in the data, the synthesis was structured using a structure–process–outcome perspective on health care quality. This framework was not imposed a priori as a rigid coding scheme, but rather emerged as a coherent analytical lens that captured how patients’ experiences were shaped by health system capacity, care delivery processes, and perceived outcomes.

The final synthesis was presented in narrative form, with an emphasis on conceptual integration rather than descriptive summary, in order to provide a theoretically informed interpretation of how patients experience the quality of diabetes care in primary health care settings.

Results and Discussion

Characteristics of the Study

Table 2. Characteristics of the Study

Author, Year, and Country	Article Title	Method
Jalil et al (2017) Pakistan	“Patient Satisfaction With Doctor-Patient Interactions: A Mixed Methods Study Among Diabetes Mellitus Patients in Pakistan”	<ul style="list-style-type: none"> - Design: <i>Mixed methods</i> - Sample: 1,095 DM patients, age >18 years - Research period: July 22 to August 31, 2015 - Setting: Diabetes outpatient clinic - Data Collection: Interviews and questionnaires
Simão et al (2017) Brazil	“Quality of Care of Patients with Diabetes in Primary Health Services in Southeast Brazil”	<ul style="list-style-type: none"> - Design: <i>Cross-Sectional</i> - Sample: 14 doctors, 13 managers, 13 CHAs and 596 DM patients, age >18 years - Setting: Primary healthcare - Instrument: Questionnaire
Birabwa et al (2019) Uganda Timur	“Quality and Barriers of Outpatient Diabetes Care in Rural Health Facilities in Uganda – A Mixed Methods Study”	<ul style="list-style-type: none"> - Design: <i>Mixed Methods</i> - Sample: 377 DM type 2 patients, age >18 years - Sampling Technique: <i>Randomly selected</i> - Setting: Primary healthcare - Data Collection: Questionnaires and interviews
Santos et al (2020) Brazil	“Quality of Care for Patients with Diabetes Mellitus in the More Doctors Program, In A Municipality in the Metropolitan Region of Recife (PE), Brazil”	<ul style="list-style-type: none"> - Design: <i>Cross-Sectional</i> - Sample: 41 professionals from the family health team and 437 DM patients, aged >18 years - Sampling technique: <i>Random sampling</i> - Setting: Primary care facility - Data Collection: Structured interviews
Moradi et al (2021) Iran	“Evaluating the Quality of Care for Patients with Type 2 Diabetes Mellitus Based on the HbA1c: A National Survey in Iran”	<ul style="list-style-type: none"> - Design: <i>Cross-Sectional</i> - Sample: 1,198 DM type 2 patients, age >50 years - Sampling Technique: <i>Simple random sampling</i> - Setting: Diabetes Clinic - Data Collection: Questionnaires and interviews

Nordin et al (2021) Malaysia	“Perceived Quality of Care Among People With Type 2 Diabetes Mellitus in the North East Region of Peninsular Malaysia”	<ul style="list-style-type: none"> - Desain: <i>Cross-Sectional Study</i> - Sample: 772 DM type 2 patients, age >18 years - Sampling Technique: <i>Simple random sampling</i> - Research period: February to May 2019 - Setting: Primary health clinic - Data Collection: Questionnaires and interviews
Suplici et al (2021) Brazil	“Self-Care Among People With Diabetes Mellitus and Quality of Care in Primary Health Care”	<ul style="list-style-type: none"> - Desain: <i>Cross-sectional</i> - Sample: 329 DM type 2 patients, age >18 years - Research period: January to June 2017 - Setting: Primary care - Data Collection: Questionnaire

Table 2 presents an overview of the seven studies included in this integrative review. The studies were conducted in diverse primary health care contexts across Brazil, Pakistan, Uganda, Iran, and Malaysia, reflecting a wide range of health system settings and organizational capacities. Methodologically, five studies employed cross-sectional designs and two used mixed-methods approaches. Sample sizes ranged from 329 to 1,198 participants, all of whom were adults living with diabetes mellitus and receiving care in primary or outpatient care settings.

Despite this contextual and methodological diversity, the studies converge in their focus on patients’ perspectives and lived experiences of diabetes care. This heterogeneity in settings, combined with convergence in analytical focus, provides a strong empirical basis for cross-contextual synthesis and conceptual integration of findings.

Empirical Patterns of Findings

Table 3. Summary of Included Study Results

No	Author and Year	Purpose	Result	Conclusion
1.	Jalil et al (2017)	To analyze the relationship between patient satisfaction and quality of DM care in Pakistan based on five dimensions of medical interaction, namely technical expertise, interpersonal aspects, communication, consultation time and access/availability of services.	The dimensions of physician-patient interaction were significantly related to patient satisfaction: technical expertise (OR=0.87; 95% CI: 0.84–0.91), interpersonal (OR=0.82; 95% CI: 0.77–0.87), communication (OR=0.83; 95% CI: 0.78–0.89), time dimension (OR=0.90; 95% CI: 0.81–0.99) and access/availability (OR=0.78; 95% CI: 0.72–0.84). Patient dissatisfaction is associated with several factors involving the inability of doctors, such as: improper handling of critical cases, inaccurate diagnosis, excessive reliance on medical tests, absence of physical examination and unavailability of specialist doctors.	Patients express dissatisfaction with certain aspects of the services provided by doctors, such as the unavailability of specialist doctors for consultation, seeing different doctors for each visit, inability to diagnose, absence of physical examination as well as lack of healing and treatment.

2.	Simão et al (2017)	Assess the quality of care indicators for individuals with DM in southeastern Brazil and explore the relationship between these indicators.	There is a shortage of professionals in 53.8% of primary health care, high problems related to referrals to secondary health care and only a subset of patients have HbA1c testing with low glycemic control.	Based on the patient's experience, the quality of care received was unsatisfactory, where the main shortcomings felt were related to the structure and treatment process.
3.	Birabwa et al (2019)	Assess the quality of DM care and barriers to service delivery in two rural districts in Eastern Uganda.	The overall facility readiness score was 73.9%. Shortcomings were found in the training of health workers related to DM care standards, the availability of medicines, management systems in services and patients having difficulty accessing health care.	The quality of care based on patient experience in these two rural facilities is still not optimal, especially the treatment process.
4.	Santos et al (2020)	Evaluate the quality of care for DM patients treated by the MDP team.	Regular attendance of doctors gives good results on the patient-doctor relationship in the long term and the use of services by patients. The components of the information system have good quality as evidenced by the availability and completeness of patient data. However, accessibility to health care facilities, both for patients and doctors, is still low due to inadequate infrastructure. Poor outcomes were reported at family counseling and clinical outcomes according to patients.	Patients reported poor quality of care, especially in family counseling and perceived clinical outcomes.
5.	Moradi et al (2021)	Evaluating the quality of care of type 2 DM patients based on HbA1c in Iran.	Of the 1,198 patients, the average HbA1c was 8.01% and more than 66% of them had HbA1c above 7% with uncontrolled blood sugar levels.	The poor quality of care in DM patients in Iran has had adverse effects on patients, particularly related to the improper control status of DM.
6.	Nordin et al (2021)	Assess the quality of care felt by people with type 2 DM in the northeastern region of	Of the 772 participants, the average HbA1c was 8.91%. The median (interquartile range) of the number of medical staff available in each clinic is 6 people, where FDC clinics have more medical staff than non-FDC clinics (p=0.001). The	The quality of DM care is highly perceived by patients because patients are managed by the same doctor and there is good

		peninsular Malaysia.	perceived quality of care was higher despite lower number of healthcare workers (adjusted regression coefficient (0.021; p=0.001) and greater doctor-patient interactions across all domains: stress relief (0.033; p<0.001), good relationships (0.056; p<0.001) and interactions (0.022; p=0.003).	interaction between doctors and patients.
7.	Suplici et al (2021)	Assess adherence to self-care activities among people with DM in relation to the quality of care received in primary care.	Better adherence to diet, glycemic monitoring and medication use was observed among people with DM treated in primary care associated with high quality of care with good care coordination, scheduling and adequate equipment.	The quality of DM care from the family health team in primary care is well perceived by patients, thus increasing their compliance in self-care.

As summarized in Table 3, the findings of the included studies cluster into two broad experiential patterns. A minority of studies report predominantly positive patient experiences of diabetes care in primary health services, while the majority describe various forms of dissatisfaction and perceived low quality of care. Across these studies, three analytical domains recur consistently as the main determinants of patient experience, namely health system structure, care processes, and perceived outcomes.

Rather than appearing as isolated factors, these domains are repeatedly shown to interact in shaping how patients interpret and evaluate the care they receive. Structural conditions such as availability of personnel, equipment, medicines, and referral systems shape the possibilities of care delivery. Care processes, including continuity of care, doctor-patient interaction, coordination, and technical practices, mediate patients' day-to-day experiences. Outcomes, particularly perceived disease control and complication prevention, retrospectively confirm or undermine patients' overall judgments about quality of care.

Conceptual Synthesis of Patient Experience of Quality of Care

Overview of the Analytical Framework

A cross-study analytical reading of the evidence presented in Tables 2 and 3 indicates that patients' experiences of diabetes care quality in primary health care are best understood through a structure-process-outcome framework. Within this framework, two dominant experiential pathways can be identified: a reinforcing pathway of perceived high-quality care and a reinforcing pathway of perceived low-quality care. These pathways do not represent isolated categories, but rather cumulative and dynamic configurations of system capacity, care delivery, and lived outcomes.

Pathways to Perceived High-Quality Care

In the small number of studies reporting predominantly positive patient experiences (Table 3), high-quality care emerges from a reinforcing alignment between supportive structural conditions and effective care processes.

From a structural perspective, patients associate good quality care with the availability of essential equipment, reasonably organized services, and functional systems for scheduling and coordination. Importantly, these structural features are not evaluated by patients in absolute

terms of resource abundance, but in terms of whether the system provides reliability, continuity, and predictability in long-term disease management.

At the level of care processes, continuity of care with the same physician, effective follow-up arrangements, and high-quality doctor–patient interactions emerge as the central experiential core of perceived quality. Patients emphasize being listened to, being treated with respect, receiving clear explanations, and feeling emotionally supported. These interactional qualities appear to mediate the impact of structural conditions and play a decisive role in shaping overall judgments of care quality.

When supportive structures and positive care processes align, patients report not only higher satisfaction but also greater engagement in self-care behaviors, including adherence to diet, medication use, and glycemic monitoring. In this sense, perceived quality of care functions as both an experiential and behavioral outcome that reinforces long-term diabetes management.

Pathways to Perceived Low-Quality Care

In contrast, the dominant pattern across the majority of studies summarized in Table 3 is a reinforcing trajectory of perceived low-quality care. This pathway is characterized by the cumulative interaction between structural deficiencies, dysfunctional care processes, and disappointing or distressing outcomes.

At the structural level, patients repeatedly report systemic constraints such as shortages of trained health professionals, limited access to specialist care, inadequate availability of medicines and diagnostic tools, weak referral mechanisms, and poor physical accessibility of health facilities. These constraints are experienced not as abstract policy problems, but as concrete barriers in patients' everyday attempts to manage their illness.

These structural weaknesses are consistently reflected in suboptimal care processes. Patients describe fragmented care trajectories, frequent changes of providers, rushed consultations, limited physical examination, and inadequate communication. Technical gaps, such as failure to perform regular HbA1c testing or insufficient screening for complications, further undermine patients' confidence in the care system. At the relational level, patients report weak interpersonal engagement, limited empathy, insufficient explanation, and minimal involvement in decision-making.

Poor outcomes form the final reinforcing layer of this negative experiential pathway. Across several studies, patients associate low-quality care with persistently uncontrolled blood glucose levels, delayed detection of complications, and the accumulation of preventable health problems. These outcomes not only represent clinical failure but also symbolically confirm patients' perceptions that the health system is failing to protect their well-being.

The Dynamic Interaction Between Structure, Process, and Outcome

The synthesis of evidence in Tables 2 and 3 demonstrates that patient experience of diabetes care quality is best understood as a dynamic and cumulative phenomenon. Structural capacity shapes what kinds of care processes are possible, care processes determine how patients experience the health system in everyday interactions, and outcomes retrospectively validate or undermine patients' overall judgments about quality.

Across the reviewed studies, care processes, particularly continuity of care and doctor–patient interaction, emerge as the most immediate and emotionally salient interface between the system and the patient. In some contexts, positive care processes partially buffer structural constraints. In others, weak processes amplify the negative effects of limited system capacity.

Patient Experience as an Integrative Lens for Understanding Quality of Diabetes Care in Primary Health Care

This review places patient experience at the center of how quality of diabetes care in primary health care should be understood and evaluated. Rather than appearing as a peripheral or merely subjective dimension, patient experience emerges as a sensitive indicator of how well health systems succeed or fail in translating structural capacity and clinical knowledge into meaningful, usable care for people who live with diabetes every day. Contemporary global health policy has increasingly moved in this direction, framing quality not only as technical correctness but as the capacity of health systems to organize care around people's lived realities, continuity needs, and long-term vulnerabilities (World Health Organization, 2024). Read in this light, patient experience does not simply reflect satisfaction. It reveals how systems actually work when encountered repeatedly over time.

One of the most consistent messages in recent literature is that care processes are where structures become visible and tangible to patients. Studies exploring how people with diabetes navigate health systems show that continuity, communication, and relational stability shape experiences more strongly than the mere availability of services, because these processes determine whether patients feel recognized, guided, and supported over the long term (AshaRani et al., 2025). Evidence from primary health care settings similarly indicates that domains such as coordination, accessibility, and interpersonal communication are the strongest differentiators of perceived care quality, suggesting that experience is anchored in how care is enacted rather than how it is designed on paper (Bu Khamseen et al., 2025). Research from the Middle East further reinforces this point by showing that patient-centered interaction, respect, and involvement in decision-making are closely tied to satisfaction and trust among people with diabetes, even in systems facing resource constraints (Alsubahi et al., 2025). These findings help explain why, in the present synthesis, care processes repeatedly appear as the experiential core through which patients judge the quality of care.

Continuity of care deserves particular attention because it stabilizes both clinical information and therapeutic relationships across time. A recent systematic review focusing on older adults with diabetes shows that continuity-oriented interventions are associated not only with better patient experience but also with improvements in glycemic control, self-efficacy, and adherence, indicating that continuity operates simultaneously as a relational and a clinical mechanism (Sari et al., 2025). Empirical work from Central Vietnam reaches a similar conclusion by demonstrating that variations in continuity across levels of care are associated with differences in disease control, suggesting that continuity is embedded not only in interpersonal relationships but also in referral systems and service organization (Thi et al., 2024). Large-scale analyses of service use patterns further show that low continuity tends to cluster among particular patient groups and care configurations, revealing that fragmentation is not random but structurally produced and socially patterned (Lundberg et al., 2025). These insights help clarify why discontinuity is experienced not merely as inconvenience, but as a sign that the system itself is unreliable.

Patient-centered care provides an additional conceptual bridge between experience and outcomes. Recent theoretical and empirical work argues that elements such as autonomy support, shared decision-making, emotional acknowledgment, and family involvement matter because they increase patient activation, which then shapes adherence and self-management behaviors (Chen, 2024). From this perspective, experience is not an endpoint. It is part of a causal chain that connects the organization of care to the everyday practices through which people manage their illness. This helps make sense of why, across contexts, better experiences are so often accompanied by better engagement in diet, medication use, and glucose monitoring. The experiential quality of care appears to work by strengthening patients' sense of agency and meaning in long-term treatment.

Structural constraints, however, remain a decisive backdrop against which these processes unfold. Recent national evidence from Indonesia documents large geographic inequalities in the availability of essential medicines in primary health centers, driven by supply chain weaknesses and local decisions about what is considered “necessary” to stock, with remote and poorer districts being most affected (Fanda et al., 2024). When such structural fragilities exist, even well-intentioned clinical guidance risks becoming hollow from the patient’s point of view. Cross-national analyses of medicine delivery models for chronic diseases similarly show that the design of distribution and dispensing systems directly shapes access and adherence, indicating that structural reform can be pursued through delivery architecture, not only through clinical training (Diaz et al., 2025). A recent systematic review of access barriers in low- and middle-income countries further demonstrates how availability, affordability, and appropriate use interact to shape real-world access, producing cumulative disadvantages for certain populations. These findings resonate strongly with the present synthesis, in which structural limitations are consistently translated into daily frustrations and uncertainties for patients.

Time also emerges as a meaningful symbol in how patients interpret care quality. Research on outpatient diabetes services shows that both actual and perceived waiting time are associated with treatment satisfaction, suggesting that time is not only a logistical issue but also a communicative one that signals whether patients and their needs are taken seriously (Toga Sato et al., 2021). This helps explain why scheduling and coordination feature so prominently in patients’ evaluations of care. Systems that fail to manage patient flow and expectations tend to produce experiences of neglect and marginalization, even when clinical competence is present.

The growing enthusiasm for digital and personalized self-management support further illustrates how experience depends on implementation rather than technology itself. A qualitative study using a structure–process–outcome lens shows that digital self-management interventions generate value when technical conditions, supervision, and feedback loops are workable, but create new burdens when they are poorly aligned with local routines and patient capacities (Scholl et al., 2024). Evidence on telemedicine in diabetes care points in a similar direction, suggesting potential benefits for education and glycemic control, while also warning that these gains depend on sustained support and usability rather than on the mere presence of digital tools (Putri, 2025). Innovation, in other words, becomes meaningful for patients only when it strengthens continuity, feedback, and relational support.

At the level of health system design, the pattern identified in this review aligns with broader arguments that improving primary care for chronic diseases in low- and middle-income settings requires attention to service delivery models, governance, and workforce organization rather than reliance on guidelines alone. Policy analyses in *The Lancet Global Health* emphasize that urban primary care improvement demands coherent delivery models and accountability for access and quality, not fragmented projects (Lilford et al., 2025). Implementation-focused work drawing on Donabedian’s framework similarly shows how structure, process, and outcome indicators can reveal precisely where integration efforts fail in real-world systems (Bachtiar et al., 2025). These perspectives strengthen the interpretation that patient experience is a particularly sensitive outcome because it concentrates the downstream effects of governance and organizational choices into a form that is immediately legible in everyday life.

Methodologically, recent scholarship has also returned to the structure–process–outcome framework to refine outpatient and chronic care evaluation. Reviews suggest that quality assessment systems often overemphasize structural indicators while leaving process indicators fragmented and poorly standardized, which limits their explanatory power (Yang et al., 2025). Work on patient-perceived quality using expanded Donabedian models argues that this

framework is especially useful for locating whether dissatisfaction originates in resource constraints, process breakdowns, or outcome failures, reinforcing the value of integrative synthesis approaches such as the one adopted here (Guzmán-Leguel et al., 2025).

What emerges from this broader body of evidence is a view of patient experience as a cumulative expression of how systems are organized over time. Integrated care research consistently shows that chronic care models work when coordination, follow-up systems, and multidisciplinary collaboration become routine practice rather than isolated initiatives (da Costa et al., 2025). International comparisons of access and quality continue to demonstrate wide variation between countries, underscoring that quality is not a natural consequence of clinical knowledge but the product of organizational design and investment priorities (OECD, 2025). Seen from this angle, patient experience becomes less a matter of perception and more a condensed representation of how well a system holds together under the demands of long-term care.

Conclusion

Patient experiences regarding the low quality of diabetes care in primary health services are caused by inadequate health service structures, suboptimal care processes, and poor clinical outcomes. In contrast, high-quality diabetes care is associated with adequate equipment, good scheduling, care coordination, and positive interactions between doctors and patients, which enhance patient compliance with diet, glycemic monitoring, and medication use. Therefore, it is hoped that healthcare providers can offer adequate facilities and equipment, deliver patient-centered, effective, safe, and affordable care, and involve a multidisciplinary team to provide a positive experience for patients as recipients of healthcare services

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