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Narrative Review of Health Disparities in Diabetes Care

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ABSTRACT

Diabetes mellitus remains a major global public health challenge, with persistent and pervasive disparities in care contributing substantially to unequal health outcomes. Health disparities in diabetes care are evident across racial and ethnic groups, socioeconomic strata, and geographic regions, influencing disease incidence, timeliness of diagnosis, access to care, quality of treatment, and long-term outcomes. Despite advances in clinical management and expanded insurance coverage in many settings, inequities in diabetes prevention, treatment, and complication management continue to compromise glycemic control and increase morbidity and mortality among marginalized populations. This narrative review synthesizes current evidence on health disparities in diabetes care, drawing on epidemiologic data, conceptual frameworks grounded in the social determinants of health, and studies examining access to care, service utilization, and quality of care, patient experience, and adherence. The review highlights how structural, social, and systemic factors, including income, education, insurance status, discrimination, geographic location, and health system organization interact to shape diabetes outcomes across diverse populations. Particular attention is given to racial and ethnic minority groups and individuals of lower socioeconomic status, who experience disproportionate barriers throughout the diabetes care continuum. The findings underscore the need for multilevel interventions that extend beyond clinical settings to address upstream determinants of health. Community-based programs, system-level reforms, and pro-equity public policies show promise but remain insufficiently evaluated for their equity-specific impact. Strengthening data collection, adopting equity-sensitive metrics, and integrating social determinants into diabetes care delivery are essential for advancing equitable outcomes and reducing the burden of diabetes across populations.

Keywords: Diabetes care disparities**,** Social determinants of health**,** Health equity**,** Racial and ethnic disparities and Access and quality of care.

INTRODUCTION

Diabetes is a heterogeneous, metabolic disorder involving impaired insulin secretion, insulin action, or both. It is characterized by chronic hyperglycemia and long-term damage, dysfunction, and failure of different organs (e.g., eyes, kidneys, nerves, heart) [1-5]. Diabetes is one of the most common chronic diseases in the world. Health disparities in diabetes care reduce the probability of achieving recommended glycemic control and significantly compromise patient outcomes [6-9]. Disparities in care manifest not only as differential incidence of diabetes and its complications across racial/ethnic groups but also as unequal access to, utilization of, and quality of diabetes-related preventive and therapeutic services [11-14]. Racial groups such as African Americans, American Indians, and Hispanics are most affected. Similar disparities are observed along socioeconomic lines, with lower-income and less-educated groups at significantly greater risk, and by region, urban areas having better access than rural and isolated regions[15-19]. Despite advances in treatments and increased understanding of the epidemiology of diabetes and its complications, many US adults are unaware of their condition [20-25]. Consequently, interventions have focused on the early identification of diabetes among high-risk individuals yet may fail to promote other critical aspects of diabetes management, particularly in populations facing multiple barriers to equitable access to prevention, diagnosis, and treatment[26-30]. A better understanding of existing disparities will inform further characterizations of the nationwide epidemic of diabetes and associated morbidity and mortality and will facilitate the identification of unmet care needs across populations at high risk of becoming or remaining undiagnosed and untreated[31-34].

Conceptual Framework and Epidemiology

Social inequities influence diabetes care quality and outcomes. The World Health Organization's 2023 report on health equity through social determinants suggests that factors such as income, education, geography, environment, and social support shape diabetes prevalence, incidence, comorbidities, and complications. Social inequities and determinants of health are linked to diabetes care access and quality disparities [3, 4 , 1]. Certain groups face higher incidence and later stages of diabetes upon diagnosis [3]. Research highlights that individual social determinants, such as income and education, also affect diabetes management, access to care, glycemic control, and complications [35-37]. The Diabetes Care Report (Centers for Disease Control and Prevention [CDC], 2020) provides systemic, population-based surveys and cohort studies to track trends in diabetes burden among diverse demographic groups [38-40]. Diabetes prevalence has increased since the 1990s, and the 2020 Diabetes Report (CDC, 2020) indicates steadily rising incidence among adults aged 18–30, particularly among African Americans and Hispanics, along with worsening prevalence among women [5]. Individuals diagnosed with diabetes experience severe complications like cardiovascular disease and kidney failure years earlier and accumulate more comorbidities compared to those whose initial diagnosis is previously managed prediabetes [6].The World Health Organization's 2023 Framing the Problem Framework guides epidemic studies of health inequities via three links connecting social factors, diabetes care opportunities, and health outcomes [3]. Diabetes Care Reports and Healthy People 2030 underpin this analysis of widespread inequities shaping diabetes care. According to the Agency for Healthcare Research and Quality [41-45], demographic disparities in diabetes management increase morbidity risk and may contribute to elevated mortality, with individuals affected by discrimination experiencing greater diagnostic delays [46-50].

Social Determinants of Health and Diabetes Outcomes

A vast body of literature demonstrates that social determinants affect diabetes management and outcomes, both directly and indirectly. There is strong evidence that low income and education adversely influence diabetes control [5]. Environmental factors, such as housing, access to healthy foods, walkability, and safety, shape care-seeking behaviors, whereas discrimination diminishes trust in health care [51-55]. Proximity to social supports and space for physical activity further affect risk. Although intersectional analyses remain rare, age, sex, and race interact with socioeconomic status (SES) to shape glycemic control and the risk of complications even after accounting for clinical and behavioral factors [3]. Disparities in diabetes management and control reflect both access to care and the quality of services received. At every stage of the care process, groups experience differential access to diabetes-related services and resources. These include primary care; consultations with endocrinologists; medications; diabetes education; routine screening for complications; and tests assessing care quality, such as glycated hemoglobin (HbA1c), lipids, and blood pressure [56-58]. In community samples, differences in the receipt of care, experience of barriers, and trust in providers consistently appear across racial and ethnic groups, and they further compound the effects of other proximal factors on control [4]. Systems-level barriers also affect service availability, and geographic areas vary greatly in the convenience, cost, and types of services offered [3]. Expanding insurance coverage improves uptake across numerous preventive services, but geographic factors and the overall insured fraction remain significant determinants even within a privately insured population [59-60].

Disparities in Access to Care and Utilization of Services

Despite notable progress in measuring and addressing racial, ethnic, and socioeconomic disparities in diabetes care, significant gaps in access to care, utilization of services, and quality of treatment remain across the United States [7]. Individuals from minority racial or ethnic groups receive fewer referrals to specialists, use fewer diabetes medications, and attend fewer diabetes education classes than their White counterparts [61-62]. Even when they do receive care, members of racial and ethnic minority groups experience a wider gap in access to essential recommended tests [3]. Beyond group memberships, broader systemic barriers such as insurance status, language, geographic service availability, and institutional policies continue to impede care [5]. Even within the same health system, different patient demographics often experience differential access to preventative services, monitoring, and follow-up; comparable inequities are also evident in health systems across geographic regions [6]. In addition to disparities in the initiation and receipt of care, barriers that limit access to care for people with diabetes include broader contextual factors [8]. Many individuals who are uninsured and therefore without the requisite coverage to obtain preventive care are located in areas of the nation with comparatively lower access to health insurance. Structural factors like literacy, discrimination, and environmental conditions, in the area where people live and their immediate surroundings, further help to illuminate the social complexity that might play a role in diabetes treatment access [5]. Moreover, the relationship between the geographical location of individuals and their access to care is complicated by the growing migration of people away from inner-city locations [4].

Quality of Care and Guideline Adherence across Populations

Despite national emphasis on equitable care, many patients in the United States receive diabetes care that falls short of established guidelines. Nationally representative data show that individuals from minority racial and ethnic groups consistently receive a lower quality of diabetes care than whites and Asian Americans [4]. Black patients, for example, are less likely to achieve recommended glycemic targets and experience higher rates of microvascular complications; although they and Latino patients report similar rates of insulin use as white patients, they are nevertheless less likely to achieve well-controlled glucose levels [3]. Compared to patients with private insurance, patients enrolled in public insurance programs such as Medicaid or Medicare Part D experience a greater number of diabetes-related complications that result in hospitalization [2]. As a result of public policies providing increased insurance coverage and healthcare access, many disparities in diabetes care have been reduced for patients in all socio-economic strata yet others remain [3]. The shared contribution of social determinants and systemic healthcare challenges to these disparities points toward a crucial need for further investigation [6]. These factors can influence both the delivery of recommended clinical interventions, such as medication provision or monitoring of lipid and blood pressure levels, and patients' diabetes self-care practices, such as adherence to prescribed regimens and attendance at recommended check-ups. Consequently, at the intersection of social, economic, and environmental change with healthcare access, providers and policymakers must critically examine the influences on diabetes care and its corresponding quality [7].

Patient Experience, Adherence, and Outcomes by Demographic Groups

Disparities in patient experiences and treatment adherence further explain differences in diabetes outcomes by demographic group, particularly those defined by race/ethnicity and socioeconomic status. Within the U.S., people who identify as Black, Hispanic, or Asian report more negative experiences with healthcare providers than other groups, a pattern that contributes to lower trust in the healthcare system [4]. These disparities in patient-reported experience dimensions including availability of providers, quality of communication, and respectfulness of treatment directly track differences in treatment adherence and blood glucose control [2]. Disparities in adherence also stem from cultural beliefs about diabetes, limited understanding of medication regimens, and lack of social support [5]. These barriers disproportionately affect people in lower-income households, further compounding the impact of overall socioeconomic status on diabetes-related health [3]. Glycemic control differs across race/ethnicity, income, and education groups, with patients from Black, Hispanic, and Asian populations, as well as lower-income households and individuals with less formal education, more likely to have poorly managed blood glucose levels [4]. Other dimensions of diabetes management and health are also associated with demographic characteristics, including rates of diabetes-related complications and hospitalization [2].

Interventions and Policies to Reduce Disparities

Reducing diabetes care disparities requires a sustained commitment to community-based interventions, system-level strategies, and pro-equity policies [2]. Successful community-based interventions address housing, employment, and provider bias to promote equity. System-level strategies enhance financial incentives and expand access to affordable medications and culturally competent care. Equitable policies support integration across sectors, promote person-centered approaches, deploy health workers from prioritized communities, and invest in training and seed funding for pro-equity innovations [3]. Three promising community-based interventions a programme combining cash transfers, diabetes education, and social support in low-income minority groups; a wellness-incentives initiative integrating healthcare with social services; and a culturally tailored, community-clinic partnership targeting Latinx farmworkers illustrate the equity focus and diverse strategies needed for success [7]. Promising system-level strategies include extending Medicare coverage for systems-based partnering to high-needs populations; reforming Medicaid payment to sustainably link partners addressing nonmedical needs; and for commercial plans, aligning partnerships with value-based payment and alternative delivery to prioritize nonmedical needs[3]. Pro-equity policies include sustained Medicaid expansion and supportive policies for people removed from Medicaid rolls; state grants financing tri-county innovation partnerships with high-need entities; and tailored outreach providing tap-to-connect information, dual-enrollment assistance, and Medicaid re-enrollment reminders through agencies partnering with recently discharged patients [2].

Research Gaps and Methodological Considerations

Health disparities in diabetes care are well documented, but research gaps remain. Existing studies frequently report inequities in access to care, care quality, and health outcomes without measuring the importance of these variables for different population groups [2]. Sample sizes rarely permit robust subgroup analysis, so findings often do not inform specific interventions or policy priorities [3]. Important variables such as social support, food insecurity, neighborhood environment, discrimination, diabetes-related distress, and the influence of community organizations on diabetes management and patient education receive limited consideration. Priorities for advancing knowledge include studies with sufficient statistical power to investigate how interventions designed to mitigate inequities in access, quality, and outcomes perform for specific groups, and designs that target factors contributing to inequities in diabetes care in racialized and rural settings or in relation to specific demographic characteristics [7]. Measurement of diabetes-related access, quality, and outcome indicators remains problematic. Current studies lack uniformity and standardization, limiting comparability across interventions. Outcomes such as diabetes-related complications, mortality, and health utilization rates are often reported without specifying subgroup composition or methodological stratification, raising questions about transferability [3]. Internationally accepted guidelines offer a framework but do not fully address populations and areas at greatest risk. Recognizing that care indicators and desirable equity-focused outcomes reflect diverse health-system capabilities, the adoption of common reporting standards for equity-sensitive indicators would facilitate interpretation, comparison, and synthesis of evidence [4]. Prominent data archives such as the International Diabetes Federation's Diabetes Atlas would enhance the visibility and monitoring of equity-sensitive indicators [2].

Implications for Practice and Policy

Although clinical practice guidelines for the management of diabetes have been established for many years, significant disparities in the delivery and quality of diabetes care exist [6]. Disparities in care result in worse glycemic control and increased rates of diabetes-related complications in certain populations. Such disparities can be seen in many groups, but the populations most affected differ across different stages of the diabetes care cycle [4]. In the early stages of care (i.e., initial diagnosis and initiation of therapy), socioeconomic status (SES)particularly income and education plays a prominent role; low-income, low-education individuals face the longest delays to diabetes diagnosis, initiation of treatment, and achievement of glycemic control. In contrast, within-group analyses reveal disparities based on race/ethnicity, age, and geography. Once treatment has commenced, barriers related to housing and social support shape the patient experience of care [5-10]. Researchers have begun to explore the impacts of discrimination on access and quality, but the evidence remains limited and largely correlational. Interventions designed to address specific barriers, such as subsidized transportation, reduced copayments, team-based care, and community health workers, have shown promise in some cases for delaying or reducing degree of treatment escalation, reducing HbA1c levels, and improving patient-reported experiences at different points of the care cascade [4]. Still, no interventions at the community, organizational, or policy level explicitly pursue equity-related objectives such as narrowing within-group disparities or equalizing care pathways [6]. Findings from this review suggest a need for systematic data collection, analysis, and reporting in future research aimed at advancing understanding of diabetes care disparities. Further insights regarding the role of social determinants beyond SES, housing, and discrimination emerge when diabetes care and control are connected to racially salient urban design and policy factors [7]. The present literature emphasizes the importance of theoretical frameworks and measurement strategies that account explicitly for both the nature and root causes of inequities in diabetes care, in order to inform targeted interventions to reduce disparities in delivery and outcomes [11-15].

CONCLUSION

Health disparities in diabetes care remain a persistent and multifaceted challenge, shaped by the complex interplay of social, economic, environmental, and health system factors. This narrative review demonstrates that inequities extend across the entire diabetes care continuum from prevention and diagnosis to treatment, self-management, and long-term outcomes. Racial and ethnic minority groups, individuals with lower socioeconomic status, and residents of underserved or rural areas consistently experience delayed diagnosis, reduced access to high-quality care, poorer glycemic control, and higher rates of diabetes-related complications. Although policy initiatives and expanded insurance coverage have improved access to care for many populations, disparities in quality, utilization, and patient experience persist. These inequities are reinforced by structural barriers, discrimination, limited health literacy, and inadequate integration of social supports into clinical care. Current interventions often address downstream consequences rather than the upstream determinants that generate and sustain inequitable outcomes.

Reducing disparities in diabetes care requires a coordinated, equity-focused approach that integrates community-based interventions, health system redesign, and supportive public policies. Future research should prioritize equity-sensitive study designs, standardized reporting of subgroup outcomes, and rigorous evaluation of interventions aimed explicitly at narrowing disparities. Advancing health equity in diabetes care will depend on sustained investment in social determinants of health, culturally responsive care models, and data systems capable of capturing and addressing the needs of populations most affected by diabetes.

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