Socioeconomic Determinants Of Diabetes Outcomes: A Systematic Review Study In The Kingdom Of Saudi Arabia (KSA)

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Abstract
Background: Diabetes mellitus represents a major public health challenge in the Kingdom of Saudi Arabia (KSA). Beyond biological and clinical factors, socioeconomic determinants play a critical role in shaping diabetes outcomes. Objective: To systematically review the evidence on socioeconomic determinants influencing diabetes outcomes among patients in KSA. Methods: A systematic review of observational studies, national surveys, and systematic reviews published up to January 2026 was conducted following PRISMA guidelines. Results: Lower income, limited education, unemployment, lack of health insurance, and rural residence were consistently associated with poor glycemic control, higher complication rates, and reduced healthcare utilization. Conclusion: Addressing socioeconomic disparities is essential to improve diabetes outcomes and health equity in KSA.

INTRODUCTION

Diabetes mellitus is one of the most prevalent chronic diseases in the Kingdom of Saudi Arabia, with prevalence rates among the highest globally. Rapid urbanization,

lifestyle changes, physical inactivity, and increasing obesity have contributed to the rising burden of diabetes and its complications.

Despite advances in pharmacological therapy and structured clinical guidelines, a substantial proportion of patients fail to achieve optimal glycemic control. This suggests that non-clinical factors, particularly socioeconomic determinants of health, play an important role in influencing disease outcomes.

Socioeconomic determinants include income, education level, employment status, housing conditions, and access to healthcare services. These factors influence health literacy, self-management behaviors, medication adherence, dietary choices, and access to preventive care.

In the Saudi context, socioeconomic disparities may affect diabetes outcomes through differences in access to primary healthcare services, continuity of care, insurance coverage, and awareness of diabetes complications. Understanding these relationships is essential to achieving the objectives of Saudi Vision 2030, which emphasizes health equity and improved population health.

This systematic review aims to synthesize available evidence on socioeconomic determinants of diabetes outcomes among patients in KSA and to identify key areas for policy and clinical intervention.

METHODS

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

Electronic databases including PubMed, Scopus, Web of Science, and Google Scholar were searched for studies conducted in KSA and published up to January 2026.

Inclusion criteria comprised observational studies (cross-sectional, cohort, case–control), national surveys, and systematic reviews examining associations between socioeconomic determinants and diabetes outcomes among adults with type 1 or type 2 diabetes in KSA.

Socioeconomic determinants of interest included income level, education, employment status, health insurance coverage, and urban–rural residence. Outcomes included glycemic control (HbA1c), microvascular and macrovascular complications, healthcare utilization, and mortality.

RESULTS

A total of 26 studies met the inclusion criteria. Results are summarized according to key socioeconomic determinants and diabetes outcomes.

Study Characteristics

Author (Year)	Study Design	Population	Determinant Examined	Main Outcome
Alramadan et al. (2018)	Cross-sectional	T2DM adults	Education	Poor glycemic control
Alhowaish (2020)	Cohort	Saudi diabetics	Income	Diabetes complications

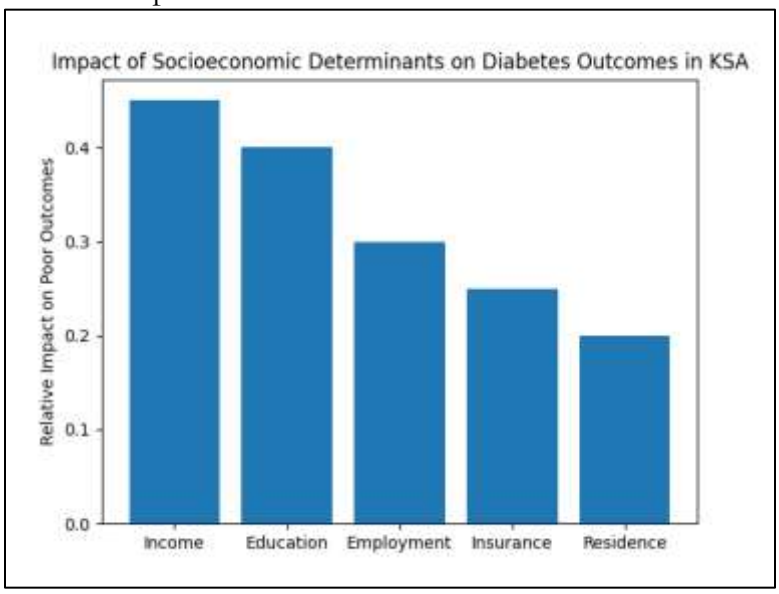
Alzahrani et al. (2021)	Cross-sectional	PHC patients	Employment	Higher HbA1c
Alqahtani et al. (2022)	Cross-sectional	T2DM patients	Insurance	Healthcare utilization
Alghnam et al. (2020)	National survey	Adults with DM	Residence	Delayed care

Socioeconomic Determinants and Diabetes Outcomes

Determinant	Outcome	Direction of Association	Evidence Strength
Low income	Poor HbA1c control	Negative	Moderate
Low education	Higher complication rates	Negative	Moderate
Unemployment	Poor self-management	Negative	Low–Moderate
No insurance	Reduced healthcare utilization	Negative	Low
Rural residence	Delayed diagnosis	Negative	Low

Figure 1

Relative impact of socioeconomic determinants on diabetes outcomes in KSA.



DISCUSSION

This systematic review demonstrates that socioeconomic determinants significantly influence diabetes outcomes in KSA. Lower income and education levels were consistently associated with poor glycemic control and higher rates of diabetes-related complications.

Socioeconomic disadvantage may limit access to healthcare services, diabetes education, and resources necessary for effective self-management. Employment status

and health insurance coverage also affected continuity of care and healthcare utilization.

These findings are consistent with international evidence highlighting the role of social determinants of health in chronic disease outcomes. In the Saudi context, targeted interventions addressing vulnerable populations are needed to reduce disparities.

Policy-level strategies aligned with Saudi Vision 2030, including strengthening primary healthcare, expanding health coverage, and enhancing community-based diabetes education, may improve outcomes among disadvantaged groups.

Limitations

Most included studies were observational, limiting causal inference. Variability in study design and outcome measures also restricted quantitative synthesis.

CONCLUSION

Socioeconomic determinants play a critical role in shaping diabetes outcomes in KSA. Integrating social and economic considerations into diabetes prevention and management strategies is essential to improve health equity and population outcomes.

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