Research Report |

Diabetes Management in Urban Rahim Yar Khan: Assessing the Impact of Community Health Programs on Glycemic Control Among Type 2 Diabetes Patients

1. Introduction

Type 2 diabetes mellitus (T2DM) is a growing epidemic in Pakistan, with an estimated 33 million adults affected — one of the highest prevalence rates in the world. Urban areas like **Rahim Yar Khan** face a dual burden: rising diabetes incidence and limited access to structured management programs. This study evaluates the impact of **community-based health interventions** — including patient education, regular HbA1c monitoring, and lifestyle counseling — on glycemic control among Type 2 diabetes patients in urban clinics of Rahim Yar Khan. The project aims to bridge the gap between diagnosis and effective long-term management through locally adapted, low-cost strategies.

2. Objectives

- To assess baseline glycemic control (HbA1c levels) among Type 2 diabetes patients in urban Rahim Yar Khan.
- To evaluate the effectiveness of a 6-month community health program in improving HbA1c, blood pressure, and BMI.
- To identify barriers to diabetes self-management (e.g., medication adherence, diet, physical activity).
- To measure patient knowledge, awareness, and satisfaction with community-led interventions.

- To recommend scalable models for diabetes care in resource-limited urban settings.

3. Methodology

Study Design: Quasi-experimental pre- and post-intervention study.

Duration: 8 months (including 6-month intervention)

Study Site: 4 urban primary care clinics in Rahim Yar Khan city.

Sample Size: 300 adult patients (aged 30–70) diagnosed with Type 2 diabetes.

Intervention:

- Monthly group education sessions (in Urdu/Saraiki) on diet, exercise, foot care, and medication adherence.
- Free HbA1c testing every 3 months.
- Follow-up via SMS reminders for appointments and medication.
- Engagement of Lady Health Workers (LHWs) for home visits and counseling.

  Data Collection:

  - Baseline and endline HbA1c, fasting blood glucose, BMI, blood pressure.
  - Patient surveys using the **Diaz-Sanchez Diabetes Questionnaire** to assess knowledge and self-care practices.
  - Focus group discussions with patients and healthcare providers.

    Analysis: SPSS for paired t-tests and regression analysis to measure change in HbA1c and other outcomes.

  ## 4. Expected Findings

  - **Poor Baseline Control:** >70% of patients will have HbA1c >8% at baseline.
  - **Significant Improvement:** Target reduction of HbA1c by 1.0–1.5% after 6 months.
  - **Knowledge Gap:** Low awareness of complications (e.g., retinopathy, nephropathy).
  - **Medication Adherence:** Only ~50% regularly take prescribed medications.

- **Positive Impact of LHWs:** Home-based counseling improves follow-up and motivation.

5. Significance in the Pakistani Context

This research addresses a critical gap in chronic disease management in **semi-urban Pakistan**, where:

- Clinics are overcrowded and lack dedicated diabetes educators.
- Patients rely on unregulated pharmacies for advice.
- Traditional diets high in refined carbohydrates and ghee worsen glycemic control.
- Stigma and fatalism ("diabetes is destiny") reduce motivation for self-care.

The study leverages the existing **Lady Health Worker (LHW) program** — a trusted community resource — to deliver sustainable, culturally appropriate diabetes education. Findings will support the **Sindh and Punjab Health Departments** in scaling similar models across urban and peri-urban centers.

6. Ethical Considerations

Informed consent will be obtained in Urdu or Saraiki. The study will be reviewed by the RYKMDC Institutional Review Board (IRB). All HbA1c results will be shared with patients and their doctors. Participation is voluntary and confidential.

7. Budget Estimate (Total: PKR 190,000)

Item	Estimated Cost (PKR)
HbA1c Testing (300 patients x 2 tests)	90,000
Field Staff (2 Coordinators, 4 LHW Incentives)	50,000
Educational Materials (Posters, Booklets in Urdu/Saraiki)	20,000
SMS Reminders & Data Collection Tools	15,000
Data Analysis & Final Report	15,000

Total	190,000

8. Conclusion

Diabetes is a silent crisis in urban Pakistan, but it is preventable and manageable with the right support. This study will demonstrate that **community-based interventions** — led by trusted health workers and tailored to local culture — can significantly improve glycemic control and patient outcomes in Rahim Yar Khan. By empowering patients with knowledge and regular monitoring, we can reduce complications, lower healthcare costs, and build a healthier future for thousands living with diabetes.

> **Note:** This research aligns with WHO's Global Report on Diabetes and supports Sustainable Development Goal 3.4 (Reduce premature mortality from non-communicable diseases by 1/3).