Outcomes and Lessons from the Integrated NCD–Humanitarian Response in Jordan (2020–2025)

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BACKGROUND:

NCDs cause 78% of deaths in Jordan, with refugees and vulnerable groups facing limited access to care. This study evaluates a multi-sectoral project (2020–2025) that aimed to improve NCD services in clinics, schools, and communities, focusing on:

1. Institutionalizing NCD care
2. Improving clinical outcomes
3. Enhancing health knowledge and behaviors

The embedded implementation research enabled iterative adaptation to local contexts.

METHODS

Design & Setting: Mixed-methods case study across clinics, schools, and communities in Jordan.

Time Frame: 2020–2025Duration: 5 years

Population: Vulnerable Jordanian and Syrian refugees in urban, rural, and camp settings.

Measures & Outcomes:

Clinical: Blood pressure, glucose, BMI through repetitive measure upon each visit.

Behavioral: KAP surveys (knowledge, attitudes, practices)

Systemic: Integration of NCD services into routine PHC workflows, formal assignment of staff roles, inclusion in MoH job descriptions, and linkage to Hakeem, the national health information system. Measured through policy adoption, facility-level implementation, and sustainability indicators.

Analysis:

Quantitative: A before-and-after design was used to compare pre- and post-intervention biometric indicators (blood pressure, fasting glucose, BMI) for individuals attending counseling sessions. Analysis was done using SPSS v.26 Paired t-tests were applied to assess differences, with significance set at $P < 0.05$. All reported reductions were statistically significant ($P < 0.001$).

Qualitative: Thematic coding using CFIR and Proctor frameworks

Results:

The Integrated NCD–Humanitarian Response Project reached over ***360,000*** **people** through health centers, schools, and communities.

Clinical: ***Significant reductions*** were observed in blood pressure, fasting glucose, and BMI among patients between baseline and follow-ups ($P < 0.001$).

Behavioral: Health knowledge and the adoption of healthier behaviors improved notably in both clinics and schools.

Systemic: Over ***190*** Primary Health Centers institutionalized Healthy Community Clinics, and ***319*** schools now deliver sustainable NCD services through the Healthy Schools Program. The project has been integrated into Hakeem, Jordan's national digital health platform, and is institutionalized nationally as a reference model for hypertension and diabetes screening programs.

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DISCUSSION

- **Integrated NCD services** are feasible and effective in humanitarian and low-resource settings.
- **Individual counseling** led to strong clinical and behavioral outcomes.
- Embedding NCD care into **PHC and schools** ensures sustainability.
- Applicable to **refugee-hosting** areas, **urban/rural clinics**, and **public schools**.
- Implications:
  - **Humanitarian:** NCDs can be addressed within refugee health packages.
  - **Clinical**: Routine counseling and screening should be scaled.
  - **Research**: Real-time implementation research improves adaptability. Real-time implementation research allowed continuous feedback loops: findings from monitoring and FGDs were used to adjust session formats, refine training, and adapt outreach strategies during implementation.

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