

Introduction to Community Health Research

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Key concepts, steps, and tools for studying health at the population level

1. What Is Community Health Research?

Aspect	Description
Definition	Systematic investigation of health determinants, outcomes, and interventions within a defined community (geographic area, cultural group, or social network).
Goal	Generate evidence that informs policies, programs, and practices to improve the health and well-being of the entire community.
Scope	Includes disease surveillance, health-promotion programs, environmental assessments, health-service evaluations, and social-determinant analyses.
Stakeholders	Community members, public-health agencies, NGOs, health-care providers, academic institutions, policymakers.

2. Core Principles

Principle	Practical Implication
Community Engagement	Involve residents from problem identification to dissemination; use participatory methods (e.g., community advisory boards).
Equity & Social Justice	Prioritize marginalized groups; address power imbalances; ensure benefits are shared.
Cultural Competence	Tailor questions, instruments, and interventions to local beliefs, languages, and norms.
Ethical Conduct	Obtain informed consent, protect confidentiality, respect autonomy, and obtain Institutional Review Board (IRB) approval.
Action-Oriented	Link findings to concrete interventions or policy changes (“research-to-action”).

3. Research Process Overview

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1. Identify the Problem & Set Objectives

- Conduct a **needs assessment** (key informant interviews, focus groups, secondary data).
- Formulate clear, measurable research questions or hypotheses.

2. Develop a Conceptual Framework

- Map determinants (e.g., socio-economic status, environment, behavior) → health outcomes.
- Common models: Social-Ecological Model, PRECEDE-PROCEED, WHO's Commission on Social Determinants of Health.

3. Choose a Study Design

Design	When to Use	Strengths	Limitations
Cross-sectional survey	Snapshot of prevalence, risk factors	Quick, inexpensive	Cannot infer causality
Case-control	Rare outcomes, retrospective	Efficient for rare diseases	Recall bias, selection bias
Cohort (prospective)	Incidence, temporal sequence	Strong causal inference	Time-consuming, costly
Community-Based Participatory Research (CBPR)	Deep community involvement	Builds trust, relevance	Requires more time for partnership building
Quasi-experimental (e.g., pre-post, interrupted time series)	Program evaluation	Real-world applicability	Threats to internal validity
Qualitative (focus groups, ethnography)	Explore meanings, experiences	Rich, contextual data	Not generalizable alone

4. Sampling Strategy

- **Probability sampling** (simple random, stratified, cluster) → representativeness.

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- **Non-probability sampling** (convenience, purposive) ? often used in CBPR or qualitative work.
- Calculate sample size based on desired power, effect size, and design effect (for cluster samples).

5. Data Collection Tools

- **Quantitative:** Structured questionnaires, electronic surveys (REDCap, Qualtrics), biometrics, GIS mapping.
- **Qualitative:** Interview guides, observation checklists, audio/video recordings.
- **Mixed-methods:** Combine surveys with focus groups for triangulation