

Applying New Methodological Tools to Advance Health Equity

A Methodological Proposal

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A conversation with Professor Peter Tugwell, O.C., MD, FRCPC

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Introduction

My Background:

- Currently an MSc Epidemiology student with a primary focus on the application of computational & statistical methods.

My Objective:

- To align my thesis with a significant, real-world challenge.
- I am deeply inspired by your career in building rigorous methodological frameworks to address health inequity.

Purpose:

- To present a high-level conceptual direction and seek your strategic guidance.

Bridging Two Worlds of Methodology

A Legacy of Evidence-Based Frameworks

- Systematic Reviews (Cochrane)
- Outcome Measurement (OMERACT)
- Knowledge Translation
- The Foundational Architecture for Health Equity Research.

A New Generation of Methodological Tools

- Computational Statistics
- Machine Learning (ML) & Natural Language Processing (NLP)
- Large-Scale Data Synthesis
- The Force Multiplier for Evidence Synthesis.

The Challenge: A Fragmented Evidence Landscape

- **Recent literature confirms a persistent gap in equity-focused research methodology.**
- **Your own work has identified this as a key barrier.**

"Existing resources for reporting health equity in research are **fragmented**... our review provides a contemporary **collation of health equity reporting guidance**..."

- **Source:** Wang, X., **Tugwell, P.**, Welch, V.A., et al. (2023). A scoping review establishes need for consensus guidance on reporting health equity in observational studies. *Journal of Clinical Epidemiology*.

Key Takeaway: The core challenge is one of **synthesis, systemization, and scale**—problems where computation excels.

A Concrete Conceptual Application

A system that ingests a large database (e.g., PubMed, ClinicalTrials.gov) and performs two functions:

- **Function 1 (Audit):** Automatically screens 10,000+ study abstracts to quantify how often specific equity factors (e.g., socioeconomic status, race, gender) are explicitly included in the methodology.
- **Function 2 (Discovery):** Identifies clusters of research (e.g., within a specific disease area) where equity considerations are consistently absent, flagging them as "methodological blind spots."

Impact: Moves the field from slow, manual scoping reviews to rapid, scalable, near-real-time analysis of the entire research landscape.

Questions for Your Consideration

From your vantage point, what are the most painful, recurring methodological blind spots in health equity research that would need a new approach?