A George Institute Fact Sheet

Computational linguistics methods to enhance process evaluations of cardiovascular interventions – August 2023

The George Institute for Global Health

Facts:

- A survey of researchers from The George Institute and international collaborators found that all participants agreed that qualitative research is time-consuming, particularly the process of coding data and validating the coding.

- Computational linguistics could help potentially speed things up, improving efficiency and building on existing knowledge.

Project Cycle:
2021 – 2026

Partners:
Northwestern University Illinois, USA

Washington University, St Louis

Supporters:
National Health and Medical Research Council (NHMRC) Australia

Principal Investigators:
Dr Hueiming Liu

Background:

- We need to understand stakeholders' needs and how to implement interventions that can address these needs.
- Process evaluations use a range of data, including interviews, to help design interventions, optimise implementation, and inform sustainability and scale up but, can be time and resource intensive.
- Computational linguistics, which combines text mining, linguistics, and machine learning, could potentially reduce the time and resources needed for process evaluations, while building on findings from previous process evaluations.

Aims:

- To train a 'learning' algorithm using computational linguistics on completed qualitative datasets and test its reliability and validity.
- Develop an integrative platform for future research.

Methods:

- Secondary use of existing datasets such as audio files and transcripts from process evaluation of cardiovascular interventions (digital health, salt reduction and polypill) will be analysed.
- The reliability and validity of computational linguistics will be tested while comparing implementation outcomes based on traditional qualitative methods.

Impact:

- Develop software that has been trained to recognise linguistic patterns from rigorously analysed data by experts to inform an integrative platform for researchers and end-users.
- Provide access to timely and comprehensive end-users' perspectives through enhanced and more efficient process evaluations.
- Improve the implementation of cardiovascular innovations across contexts.

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We're improving the lives of millions of people worldwide through innovative health research. Working across a broad health landscape, the Institute conducts clinical, population and health system research aimed at changing health practice and policy worldwide.