OPTIMISATION: DEFINING AND EXPLORING A CONCEPT TO ENHANCE THE IMPACT OF PUBLIC HEALTH INITIATIVES

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Objectives

Repeated, data-driven optimisation processes have been applied in many fields to rapidly transform the performance of products, processes and interventions, and hold a potential for application to enhance the impact of public health initiatives. Optimisation, however, has not been defined in the context of public health and there has been little exploration of its key concepts.

We aimed to, in the context of public health:

AIM 1. Generate a consensus-based definition of optimisation

AIM 2. Describe key considerations for optimisation

Methodology

We used a **modified, three round Delphi Study** (Fig 1). The final definition of optimisation and key considerations for optimisation in the context of public health reflect **an iterative consultation process**.

Participants (91% response rate) included an international group of 33 researchers, public health policy-makers and practitioners representing 6 academic institutions, 10 professional associations, 4 NSW local health districts and the NSW Ministry of Health.

Implications

To our knowledge, **for the first time, this study provides a consensus-based definition of optimisation in the context of public health.**

Issues related to the application of optimisation processes, including whether, when and how such processes should be undertaken **were explored**.

Generated interest among stakeholders in further exploring optimisation considerations which were discussed as part of the study and those which were recognised as research gaps.

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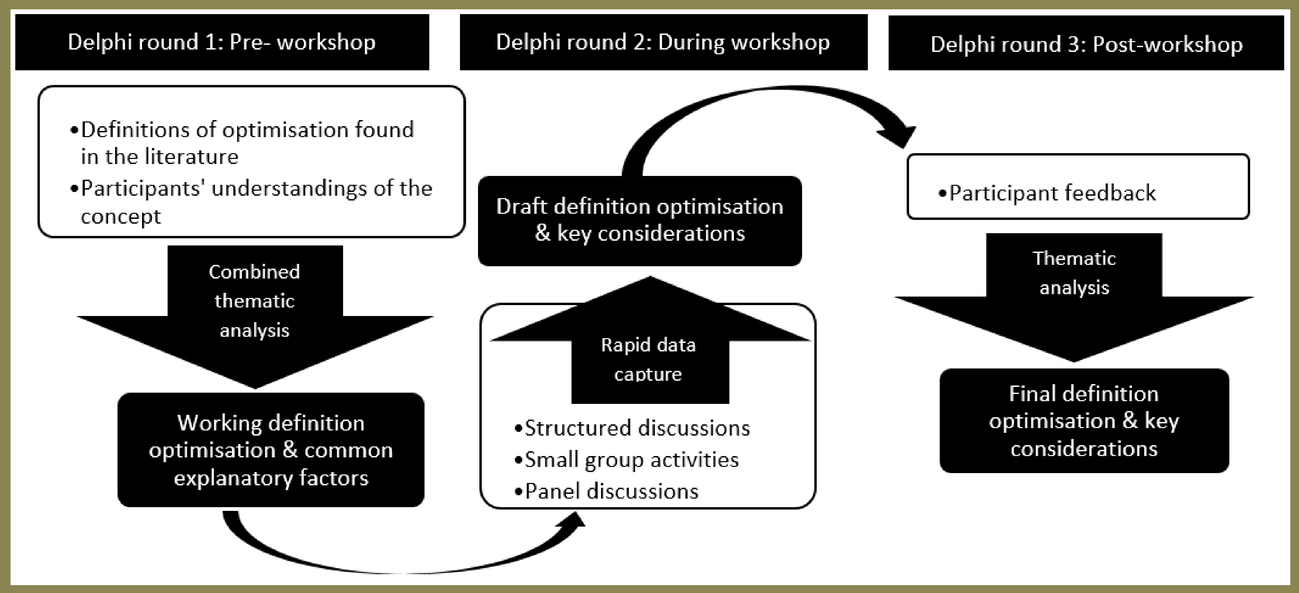
Fig 1. Modified Delphi consensus process used in the study



Outcomes

- **AIM 1: Optimisation in the context of public health is a deliberate, iterative and data-driven process to improve a health intervention and/or its implementation to meet stakeholder-defined public health impacts within resource constraints.**
- **AIM 2:**

Major theme	Sub-themes
Theme 1: Parameters for optimisation, such as pre-conditions for optimisation and factors considered following a decision to optimise (when and on what outcome to optimise)	• **Pre-conditions for optimisation:** i. Availability of good quality data and ongoing stable resources ii. Existing initiatives are not sufficiently effective and meaningful public health impacts are anticipated from optimisation iii. Availability of the necessary support • **Parameters considered following a decision to optimise (when and on what outcome to optimise):** i. Optimisation processes may occur across the public health translation continuum (intervention development through implementation at scale) ii. Optimisation outcomes - optimisation should seek to improve impact on outcomes defined and valued by stakeholders (or end-users) iii. Resource considerations - the impacts of optimisation are considered relative to the available resources
Theme 2. How to optimise	• Understand the underlying logic or causal model of the initiative (intervention and/or implementation strategy) • Methods to understand initiative (intervention and/or implementation strategy) mechanism - factorial designs or analogue methods
Theme 3. Identifying when optimisation has been achieved	• Consideration of stakeholder views, potential for additional worthwhile impacts, and balancing multiple outcomes

Additional outcome:

- A co-written research paper under review

Lessons Learned

The modified Delphi approach with a **highly interactive face to face component, and use of multiple qualitative techniques** to elicit participants' individual and group opinions, were an ideal way to synthesise perspectives of stakeholders from a broad range of backgrounds. **A traditional Delphi survey method would not have produced such robust results.**

Well facilitated workshops that **address stakeholders' needs** and where participants are involved in **co-designing outputs contribute to partnership building and strengthening, in addition to producing research outputs that are useful for multiple stakeholders.**