

# Unraveling the complexity of health inequalities: challenges and solutions

Conference Institute4PreventiveHealth, Utrecht, December 7 2023

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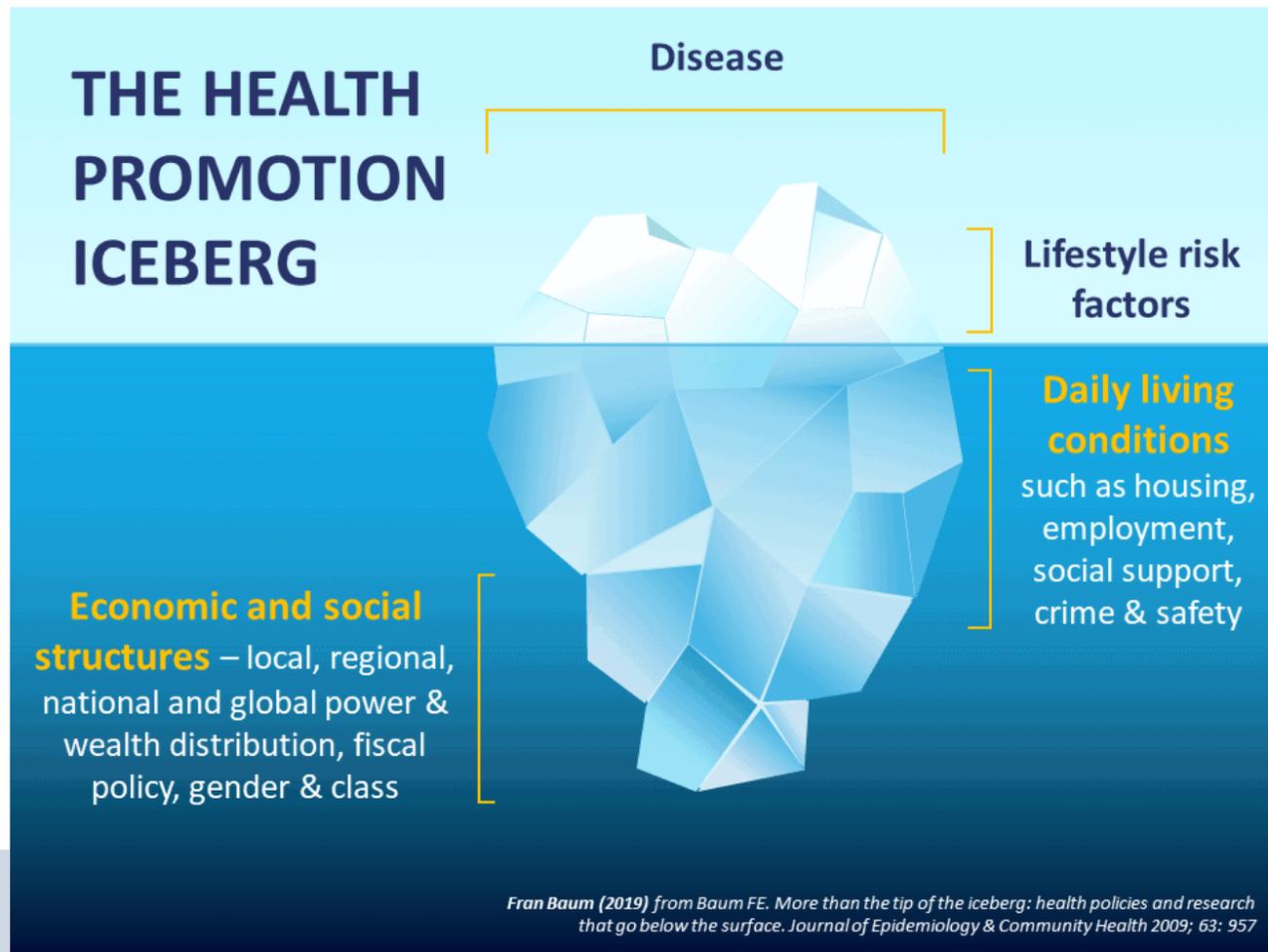
# Why are health inequalities persistent?

- ChatGPT:

- "Health inequalities persist for a variety of **complex** and **interconnected** reasons, and addressing them requires a **comprehensive** understanding of the social, economic, and environmental factors that contribute to disparities in health outcomes."
- [list of factors]
- "Addressing persistent health inequalities requires a **multi-faceted** approach that involves changes at **individual, community, and societal levels**. Efforts should include policy interventions, community engagement, education, and targeted initiatives to reduce disparities and improve overall population health."



# Practice: symptom management





# 1. ... approach that involves changes at individual, community, and societal levels (1)

- Existing knowledge: emphasis on individual-level risk factors
- Needed knowledge: Recognition of health inequalities as symptomatic of deeper, underlying problems at meso and macro levels
- E.g. social norms emerge from interactions among individuals and are not solely visible at the individual level



# Why do we adhere to symptom management?

- The existing knowledge (paradigm?) is inadequate for guiding the comprehensive approach required to address health inequalities
- We require a different type of knowledge to inform both policy and practice



# Social norms and prevalence of obesity

Social norms regarding overweight influenced by the actual prevalence of overweight which then impacts on the individual behaviour, which then... (feedback loop) + knowledge of what healthy BMI is

Received: 27 January 2020 | Revised: 14 April 2020 | Accepted: 15 April 2020

DOI: 10.1111/obr.13044

**OBESITY/ETIOLOGY**

**OBESITY** WILEY

## Social norms and obesity prevalence: From cohort to system dynamics models

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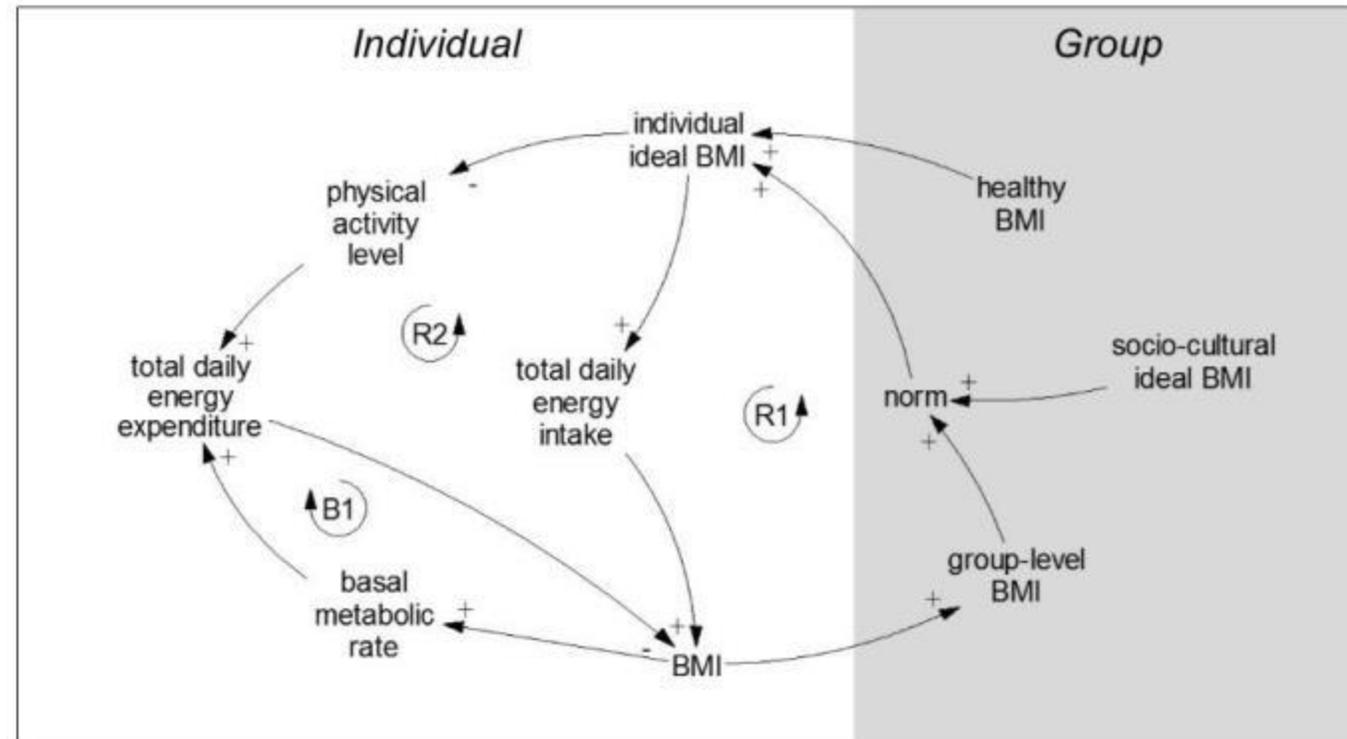
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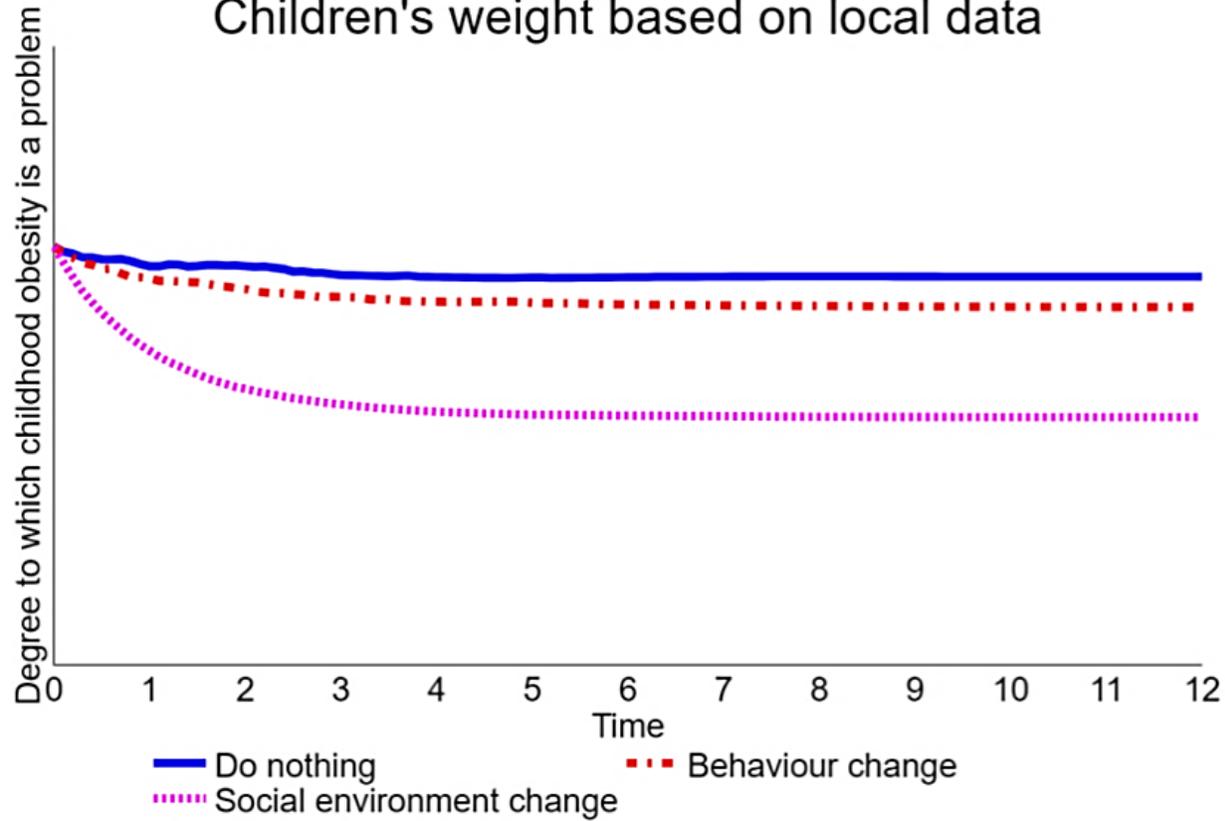
<sup>4</sup>Interdisciplinary Graduate Programme, Nanyang Technological University, Singapore

### Summary

Group-level obesity can be seen as an emergent property of a complex system, consisting of feedback loops between individual body weight perception, individual weight-related behaviour and group-level social norms (a product of group-level 'normal' body mass index (BMI) and sociocultural 'ideal' BMI). As overweight becomes normal, the norm might be counteracting health awareness in shaping individual weight-related behaviour. System dynamics modelling facilitates understanding and



## Children's weight based on local data



Degree to which health action is focused on...



Each week, support each 1 in 4 children to...

do 1 extra hour of exercise  
+ eat 1 less snack

do 3 extra hours of exercise  
+ eat 3 less snacks

do 5 extra hours of exercise  
+ eat 5 less snacks

No school-based  
intervention

Run

Restore





# Reframing health inequalities as a societal issue

- This type of knowledge can not only guide strategies involving changes at community and societal level ...
- ... but also contribute to reframing socioeconomic inequalities in health as a societal issue rather than solely a problem associated with individuals of lower socio-economic status

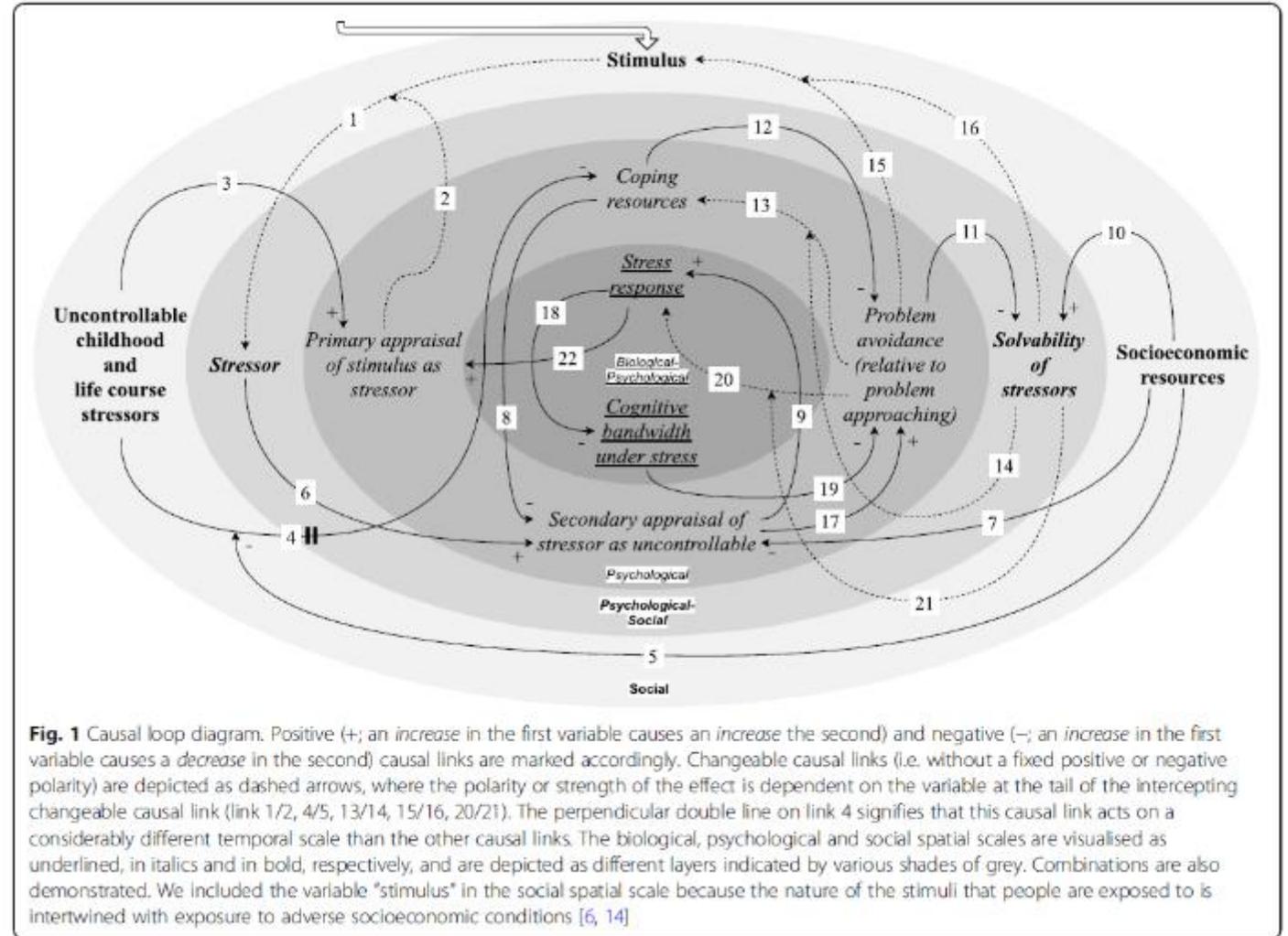
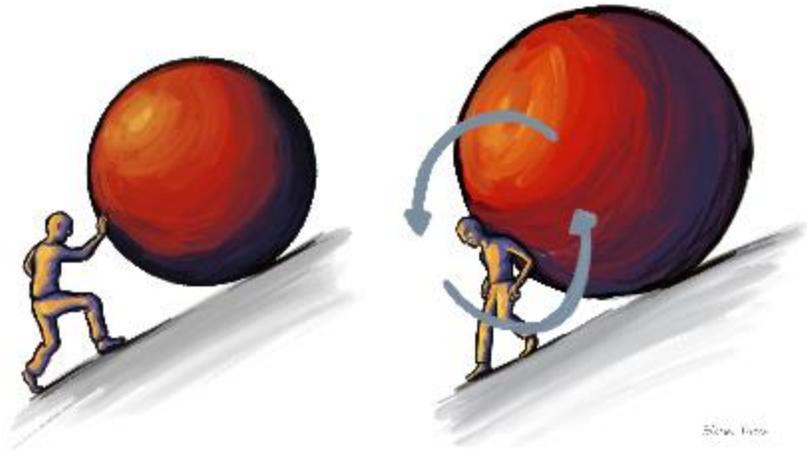


## 2. ... addressing health inequalities requires a comprehensive understanding of the social, economic, and environmental factors .. (1)

- Existing knowledge: isolating the effect of a single factor, e.g. smoking / diet
- Needed knowledge: Acknowledgement that health inequalities result from a complex interplay of factors, ranging from cells to society
- Including feedback loops, crucial contributors to the enduring nature of health inequalities



# Feedbackloop between chronic stress and psychological capacity





# Combining measures

- What explains this vicious circle? The more stress someone experiences and has experienced, the ..
  - ..fewer tools to resolve the causes of stress (coping),
  - ..less sense of control (learned helplessness),
  - ..less mental capacity to deal with stress (cognitive bandwidth),
  - ..more intense perception of the causes of stress (appraisal).
- These mechanisms do not simply disappear as stress diminishes → combine measures addressing sources of stress with psychological interventions to enhance the mental health of individuals



# Such mechanisms might differ between socioeconomic groups

- When considering measures to promote healthy behaviours, there is a tendency to heavily depend on individual experiences
- Risky approach: living conditions of decision-makers often significantly differ from people in lower socio-economic groups
- Tip: use ChatGPT for a summary of scientific studies!



### 3. ... addressing health inequalities requires a multi-faceted approach

- Existing knowledge: emphasis on interventions controlled by researchers, resulting in distinct interventions handed over to policy and practice for further implementation
- Needed knowledge: Recognition that addressing health inequalities requires collaboration among research, policy and practice. This calls for *transdisciplinary* research to achieve the necessary changes





# Conclusions (1)

- ChatGPT/literature: “Health inequalities persist for a variety of complex and interconnected reasons .... requires comprehensive understanding ... a multi-faceted approach involving changes at individual, community and society levels”.
- To inform policy and practice, we need a different type of knowledge:
  - multiple levels (beyond individual)
  - mechanisms (beyond single risk factors)
  - transdisciplinary (beyond knowledge generated in silos)
- Hopefully: inspiration to critically reflect on your own research, and to embrace complexity



# A System Dynamics and Participatory Action Research Approach to Promote Healthy Living and a Healthy Weight among 10-14-Year-Old Adolescents in Amsterdam: The LIKE Programme

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Affiliations + expand

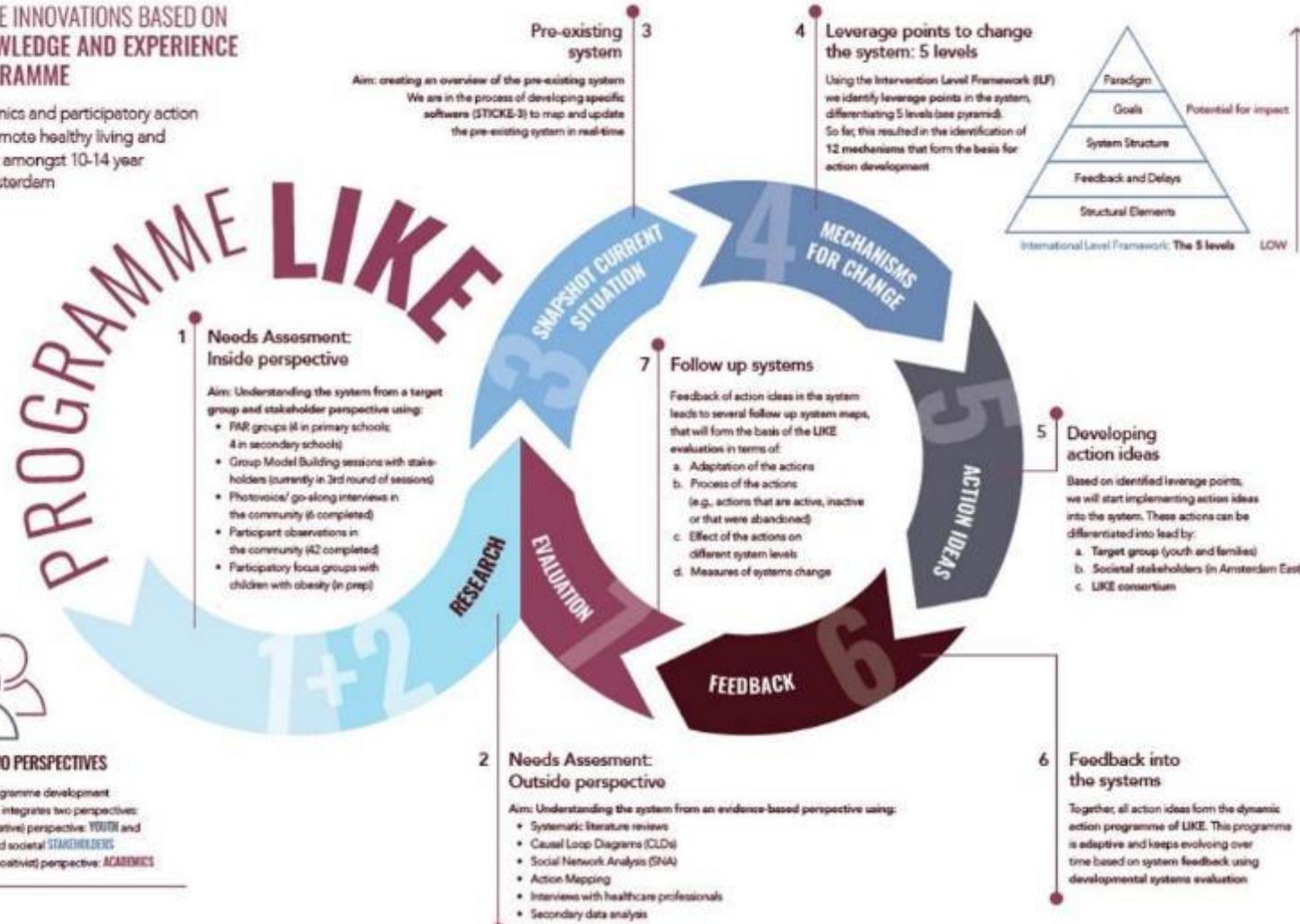
PMID: 32650571 PMCID: PMC7400640 DOI: 10.3390/ijerph17144928

Free PMC article

# Example: LIKE project

## THE LIFESTYLE INNOVATIONS BASED ON YOUTH KNOWLEDGE AND EXPERIENCE (LIKE) PROGRAMME

A systems dynamics and participatory action approach to promote healthy living and a healthy weight amongst 10-14 year old youth in Amsterdam



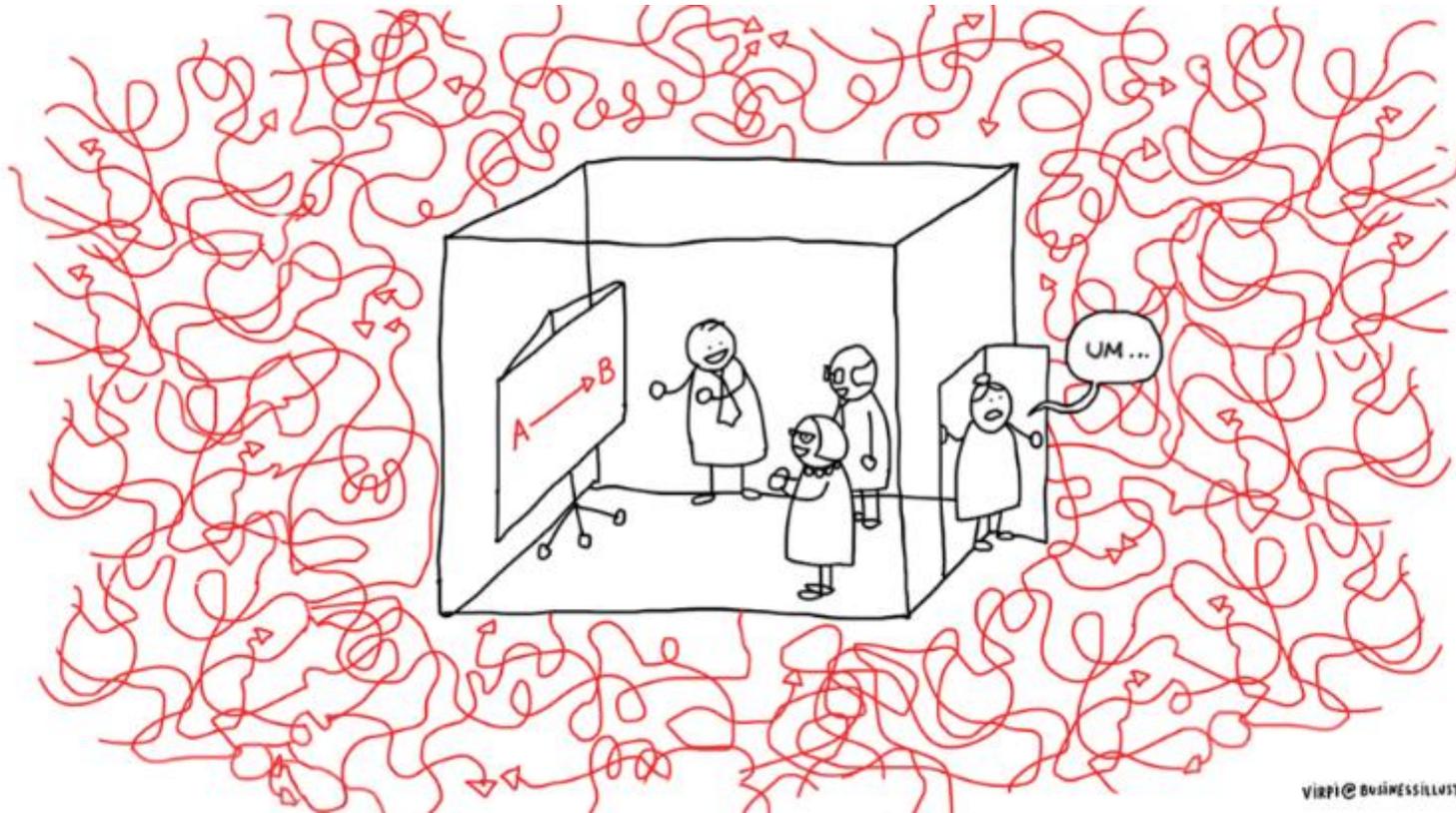
### COMBINING TWO PERSPECTIVES

Throughout the programme development and evaluation LIKE integrates two perspectives:  
 a. Inside (interpretive) perspective: YOUTH and their families and societal STAKEHOLDERS  
 b. Outside (post-positivist) perspective: ACADEMICS

[www.like-onderzoek.nl](http://www.like-onderzoek.nl)



## Conclusions (2)



The proof of the pudding is  
of course in the eating ...



# Thank you for your attention

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