

Theories & Frameworks

Pathways and Determinants Interactions

2026-02-04

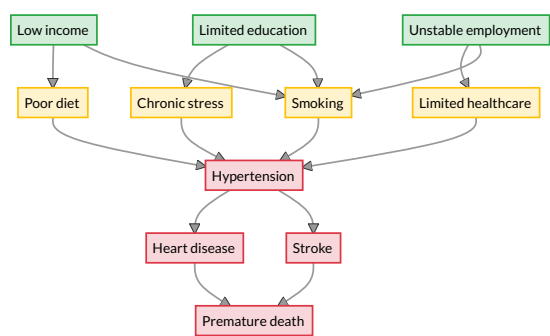
Pathways from Outcomes

Health outcomes at different levels of

UP
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Root causes

Example: SES → Cardiovascular Disease



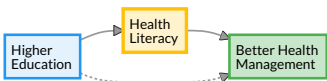
How Do Det

Understanding he
together:

1. Mediators: Var
2. Moderators: Va
relationships (t
3. Feedback loop
effects
4. Threshold effe
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Mediators: Explaining the Pathway

Definition: A mediator is *on the causal pathway* between X and Y



Example: Education → Health Literacy → Better Health Outcomes

“Through what mechanism does X affect Y?”

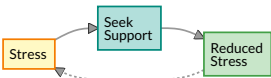
Feedback Loops in Health

Positive Loop (amplifying)



Vicious cycle

Negative Loop (stabilizing)



Resilience

Loops explain **persistent inequities** (positive) and **resilience** (negative)

Moderators:

Definition: A moderator is *on the causal pathway* between X and Y

Low Social Support



Strong negative

“For whom?”

Threshold E

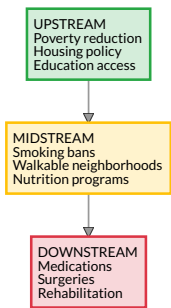
Small changes can



Implication: E

Types of Interventions

Effective public health requires **multi-level action**



Which Level

Upstream interventions

- Harder to implement (political will, resources)
- Greater population impact
- Prevent problems before they start

Best approach: Consider all three levels

Transition to Practice

You’ve learned the concepts:

- Pathways (upstream → intermediate → downstream)
- Mediators and moderators
- Feedback loops and thresholds
- Intervention levels

Now: Apply these frameworks to real health problems

Group Exercise

Task: You’ll receive a scenario with an exposure and outcome.

1. Identify what mechanism links the exposure to the outcome (pathway)
2. Identify what factors might modify the relationship (stronger/weaker)
3. Explain your recommendations for intervention

Time: 10 minutes

Group Assignments

- Snow Group:** Low income → Childhood asthma
- Pasteur Group:** Rural residence → Type 2 diabetes
- Nightingale Group:** Academic pressure → Depression
- Gupta Group:** Discrimination → Cardiovascular disease
- Fauci Group:** Job loss → Opioid overdose

Instructions

1. Look at your exposure
2. **Brainstorm** mediators and moderators in the pathway? (How many?)
3. **Brainstorm** moderators and mediators in the pathway? (How many?)
4. Choose your top 2-3 mediators and moderators
5. **Be ready to present** your findings (5-10 minutes)

13

Presenting Your Work

Each group will share:

- Your exposure → outcome
- Your **mediator(s)** and why they're mediators
- Your **moderator(s)** and why they're moderators
- Brief discussion of the pathway

Time: 2 minutes per group max

Key Takeaways

- Health pathways
- Understanding mediators and moderators
- Identifying **moderators** and **mediators** in the pathway
- **Feedback loops** in the pathway
- Effective interventions at different points in the downstream tract

15

Reflection Questions

Consider for yourself:

1. What upstream determinants most strongly shape health in your own community?
2. Can you identify a mediator or moderator in your own health behaviors?
3. Where would you intervene to create the greatest population health impact?