Mid-level theory: an approach to generalizability and transferability with reference to hand washing and policy uptake of research findings

Howard White
CEDIL and Campbell Collaboration
What is it and why use it?

• Mid-level (or mid range) theory: A theory of change between general theory and project-level theory
• Tests causal mechanisms rather than specific interventions: so build evidence for mechanism
• Helps assess transferability of findings
## Generalizability and Transferability

<table>
<thead>
<tr>
<th></th>
<th>Definition</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Generalizable</td>
<td>A finding which applies universally</td>
<td>Benefits of infant stimulation (and so benefit Parent Training IF they adopt behaviour)</td>
</tr>
<tr>
<td></td>
<td>$\text{Prob}(Y</td>
<td>X) = \text{Prob}(Y</td>
</tr>
<tr>
<td></td>
<td>$\forall X &amp; Z$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$Y$ is outcome; $X$ and $Z$ are states of the world (context)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very rare</td>
<td></td>
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<tr>
<td>Transferable</td>
<td>A finding which can be transferred from one setting to another as key contextual factors are similar</td>
<td>Not transferable: Nurse Family Partnership because of different context</td>
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<tr>
<td></td>
<td>Non-transferable: $\text{Prob}(Y</td>
<td>X) \neq \text{Prob}(Y</td>
</tr>
<tr>
<td></td>
<td>Very common?</td>
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What I will talk about

• Examples of mid-level theory
• Focus on behaviour change
• ALL development interventions have a behaviour change component
• But here talk about hand washing and policy uptake of research findings
### Three examples of mid-level theory

<table>
<thead>
<tr>
<th>General theory</th>
<th>Mid level theory</th>
<th>Project-level theory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply &amp; demand</strong></td>
<td><strong>Price subsidies</strong></td>
<td><strong>Fertilizer subsidies to increase use of fertilizer in low productivity settings</strong></td>
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<tr>
<td>How the price mechanism clears the market for goods and services</td>
<td>Price subsidies increase use of the subsidized agricultural inputs</td>
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<tr>
<td><strong>Structuration theory</strong></td>
<td><strong>Role conflict</strong></td>
<td><strong>Flexible working time to allow working parents to fulfill child care responsibilities</strong></td>
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<tr>
<td>How social systems are reproduced through an interaction between structures and agents</td>
<td>Employment versus parenting: when incompatible demands are placed on people, complying with all of them will be difficult</td>
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<tr>
<td><strong>Transtheoretical model of behaviour change</strong></td>
<td><strong>Providing information</strong></td>
<td><strong>Public information campaigns to promote handwashing with soap</strong></td>
</tr>
<tr>
<td>The six stage process individuals pass through for successful behaviour change</td>
<td>Providing information on benefits or harms of health behaviours will support behaviour change</td>
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Price elasticities: cost is not always the binding constraint

Free male circumcision: 25% if free down to just 10% with partial subsidy. So price makes a difference, but even if free most uncircumcised men don’t change behaviour.

Subsidized pensions limited impact on pension enrolment. But opt out rather than opt in has huge impact.

Fertilizer subsidy may not increase uptake if inadequate knowledge, lack market for produce or lack complementary inputs.
I was obese, under conditioned and drinking quite a bit

My Dad was becoming less mobile from years of being overweight. He would no longer visit my kids because he was unable to climb stairs. This was a big wake up call for me. It took me 6-8 months contemplating how to start...

I looked at what my husband was doing and checked out some gyms nearby...

I joined a ‘Stay Mobile’ fitness class 3 days a week

I made a commitment to go to crossfit 4 days a week for the first 30-60 days with no excuses

I look forward to going to work out. I miss being at the gym on rest days... I know I in a fitness programme for life
This story illustrates the transtheoretical model of behaviour change: six stages of behaviour change

<table>
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<th>Stage</th>
<th>Definition</th>
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<tr>
<td>Pre-contemplation</td>
<td>Not seriously thinking changing behaviour</td>
</tr>
<tr>
<td>Contemplation</td>
<td>Seriously thinking about changing behaviour in the next 6 months + but not within the next 30 days + no attempt in the past year</td>
</tr>
<tr>
<td>Preparation</td>
<td>Seriously thinking about changing behaviour in the next 30 days</td>
</tr>
<tr>
<td>Action</td>
<td>First 6 months of change</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Change beyond 6 months</td>
</tr>
<tr>
<td>Termination</td>
<td>Complete absence of temptation for previous behaviour</td>
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</table>
A story from Quora

I was obese, under conditioned and drinking quite a bit

My Dad was becoming less mobile from years of being overweight. He would no longer visit my kids because he was unable to climb stairs. This was a big wake up call for me. It took me 6-8 months contemplating how to start...

Pre-contemplation

Contemplation

Preparation

I looked at what my husband was doing and checked out some gyms nearby...

Action

I joined a ‘Stay Mobile’ fitness class 3 days a week

Maintenance

I made a commitment to go to crossfit 4 days a week for the first 30-60 days with no excuses

Termination

I look forward to going to work out. I miss being at the gym on rest days... I know I in a fitness programme for life
Transtheoretic model provides a good framework for mid-level theory approach to behaviour change.

A key insight is that the different stages of the process require different interventions.
Pre-contemplation

Mid-level theory: Exposure to information on benefits of handwashing with soap (harms from not doing so) will lead people to consider changing behaviour (transition from pre-contemplation to contemplation)
Pre-contemplation

Mid-level theory: Community engagement in identifying sanitation-related problems and solutions can change social norms regarding handwashing and open defecation.
Pre-contemplation

Interventions

• Public information (posters, media)
• Community meetings (awareness raising)
• Community influencers (community and religious leaders, TV stars)
• Entertainment based (street theatre, soap operas, movies)
• School-based

Indicators

• Social norms
• Attitudes & beliefs
Contemplation and planning
Mid-level theory: Providing information on when and how to carry out handwashing with soap will improve knowledge of correct practice (using soap, frequency and duration)
Contemplation and preparation

Interventions

• Public information (posters, media)
• Community meetings with demonstrations
• Entertainment based (street theatre, soap operas)
• School-based demonstrations

Indicators

• Social norms
• Attitudes & beliefs
• Knowledge
Action

Mid-level theory: Financial and non-financial incentives will support adoption of proper handwashing practice.
Action

Interventions

Financial incentives:
• Soap subsidy
• Vouchers

Non-financial incentives:
• Giving soap (school or household)
• Handwashing facilities
• Awards to community-leaders
• Community peer pressure

Indicators

• Handwashing facility available
• Soap present and used in household
• Proper practice
Maintenance

Mid-level theory: Following correct handwashing practice for sufficient duration will turn the practice into a habit (sustained proper practice)
Action

Interventions

• Handwashing facilities
• Supply chain (possible subsidy)

Indicator

• Sustained proper practice
What about the evidence?
Results as expected:
Community-based approaches no evidence maintenance of effect
Marketing evidence is adherence
Messaging main impact on uptake
Multi-component programmes more effective:

- Community-based approaches work better if add incentives
- Combining media campaign with community involvement had impact on knowledge and behaviour, whereas campaign alone did not
- One way messaging generally not effective, but may be so with community engagement
Lessons

• Mid-range theory identifies range of interventions which may be appropriate to operate a mechanism
• Different interventions needed to operate different mechanisms (at different stages of causal chain)
• So multi-component programmes more effective (or coordinate between agencies)
• Primary studies, and especially systematic reviews, can test both interventions and mechanisms
### Application to policy uptake of evidence

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<th>Theory</th>
<th>Interventions</th>
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| Pre-contemplation      | Exposure to cases of successful use of evidence will increase willingness to consider evidence-based policy | Develop cases of cost savings and welfare impact when evidence has been used  
Awareness raising workshops (how evidence is being used elsewhere, local examples where there is relevant evidence)  
Media stories on use of evidence national and globally |
| Contemplation          | Learning different sources and uses of evidence will encourage action and thinking about own possible uses | Use of evidence workshops  
Evidence needs assessment |
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| Preparation and action | Policy makers benefit from guidance to navigate the evidence           | Activities to identify relevant stakeholders to be engaged, and policy issues to be addressed  
|                    |                                                                        | Direction interaction to interpret available evidence                        |
|                    |                                                                        | Prepare evidence summaries / briefs                                           |
| Action             | As policy makers become more experienced they can seek out and use evidence themselves (using available research and evidence resources) | Guide users to evidence resources                                             
|                    |                                                                        | Generate nationally-specific evidence resources                               |
| Maintenance        | Use of evidence assessments and awards for use of evidence             | Use of evidence assessments and awards for use of evidence                    |
|                    | Develop national evidence architecture                                 | Develop national evidence architecture                                       |
|                    | Build evidence courses into civil service training                      | Build evidence courses into civil service training                             |
Thank you

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And
www.cedilprogramme.org