Applying Prevention Science

Intervention Mapping as an Integrative Framework

[ slides at https://osf.io/gkyza ]

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Looking over the wall
The needs assessment: mapping the situation

Cannabis consumption in school-based adolescents: sex and personality traits [EC oral communication]

» Ms. María del Carmen Torrejón-Guirado¹, Ms. Ana Ruíz-Iglesias¹, Ms. María Isabel Acuña-San Román¹, Dr. Marta Lima-Serrano¹ (1. University of Seville)

Home Drinking in Women over 30 years of age. Findings from an internet survey [oral communication]

» Dr. Martha Canfield¹, Mrs. Valerie Chandler², Dr. John Foster² (1. Kings College London, 2. University of Greenwich)

Young drug users in the criminal justice system [campfire]

» Dr. Günter Stummvoll¹, Dr. Rahel Kahlert¹, Dr. Cees Goos¹ (1. European Centre for Social Welfare Policy and Research)

Developmental perspective on substance use prevention (paper 1: scientific underpinnings) [themed session]

» Dr. Simone Onrust¹, Ms. Renee Verkerk¹, Ms. Ester Speth¹, Ms. Daphne Visser¹ (1. Trimbos Institute)
The why: mapping determinants of behavior

Predictors of mentoring relationship quality: a mixed methods study on a school-based mentoring programme [EC oral communication]

» Dr. Giovanni Aresi¹, Ms. Chiara Riccardi¹, Dr. Elena Marta¹ (1. Università Cattolica del Sacro cuore)

Attitudes towards alcohol use: A study among young adults and teenagers drinking in the streets [EC oral poster]

» Ms. Maite Kefauver¹, Ms. Joella Anupol¹, Ms. Mariàngels Duch Moya¹, Ms. Zara Quigg⁴, Prof. Elena Gervilla⁵ (1. IREFREA - European Institute of Studies on Prevention, 2. LJMU, 3. University of the Balearic Islands)

Do the parental permissive attitudes toward cigarette smoking and alcohol use influence illicit drug use among adolescents? [EC oral communication]

» Ms. Emina Mehanović¹, Prof. Rosaria Galanti², Prof. Fabrizio Faggiano³, Prof. Federica Vigna-Taglianti¹, Dr. the EU-Dap Study Group⁵ (1. Department of Clinical and Biological Sciences, University of Torino, Italy and Piedmont Centre for Drug Addiction Epidemiology, ASL TO3, Grugliasco (Torino), Italy, 2. Department of Public Health Sciences, Karolinska Institutet, Stockholm, Sweden and Centre for Epidemiology, Västerås, Sweden)
The how: behavior change principles

Using powerful solutions for prevention – are we doing enough? [themed session]

» Ms. Karin Streimann¹ (1. National Institute for Health Development)

Moderators of the effect of psychological and psychoeducational interventions to prevent anxiety disorders: A systematic review [EC poster]

» Ms. Carmen Martín-Gómez¹, Dr. Patricia Moreno-Peral², Dr. Sonia Conejo-Cerón², Ms. Henar Campos², Dr. Emma Motrico¹ (1. Universidad Loyola Andalucía, 2. Biomedical Research Institute of Málaga (IBIMA), Spain)

Effective components of parent training programs in preventing child abuse: A meta-analytic review [EC poster]

» Mrs. Jeanne Gubbels¹, Dr. Claudia van der Put¹, Dr. Mark Assink¹, Prof. Geert Jan Stams¹ (1. University of Amsterdam)
The result: program pretesting & production

An Exploratory Study of Teacher’s Requirements to Deliver Drug Education Help! I Have a Lesson - A UK Case Study [oral communication]

» Mr. Richard Lynas¹, Dr. Elizabeth Hurst¹, Ms. Kate Holley¹ (1. Mentor UK)

Am I on the right track with the development of my harm reduction intervention? The development and use of an evaluation instrument [oral communication]

» Dr. Desiree Spronk¹, Mrs. Lotte Voorham¹, Dr. Ferry Goossens¹ (1. Trimbos Institute)

Strong Families: A new open-source family skills prevention programme aiming to prevent a broad spectrum of risk behaviours in different regions [oral communication]

» Dr. Wadih Maalouf¹, Dr. Karin Haar¹, Prof. Virginia Molgaard³, Prof. Rachel Calam⁴, Dr. Aala El-Khani⁴ (1. United Nations Office on Drugs and Crime (UNODC), 2. Iowa State University, 3. The University of Manchester)
The future: program implementation

Challenges and Solutions in Translating Evidence-Based Research into Practice [oral communication]
» Dr. Pamela Buckley¹, Dr. Karl Hill¹, Dr. Abigail Fagan³ (1. University of Colorado Boulder, 2. University of Florida)

Implementing and evaluating a brief digital alcohol and drug prevention intervention among adolescents and young adults [EC poster]
» Dr. Pia Kvillemo¹, Dr. Tobias Elgan¹, Dr. Anna K Strandberg¹, Dr. Johanna Gripenberg¹ (1. Karolinska Institutet)

Is the ability of implementation the key evaluation criterion? Short or long prophylactic impacts on the universal level? [oral poster]
» Prof. Krzysztof Wojcieszek¹ (1. Pedagogium WSNS in Warsaw)
The effects: program evaluation

The effectiveness of school-based intervention programs targeting stress in adolescents: A multilevel meta-analysis [EC oral communication]

» Mrs. Amanda van Loon¹, Dr. Hanneke Creemers², Dr. Michiel Westenberg³, Dr. Jessica Asscher² (1. Utrecht University, 2. University of Amsterdam, 3. Leiden University)

Evaluation of the many not the few: how can we usefully evaluate interventions when a randomised controlled trial is impossible, improbable or unnecessary? [oral communication]

» Dr. Nick Axford¹, Dr. Tim Hobbs² (1. University of Plymouth, 2. Dartington Service Design Lab)

The effectiveness of the “Who really wins?” youth gambling prevention program – results with regard to different types of high-school [EC oral communication]

» Mrs. Sabina Mandić¹, Mr. Neven Ricijaš¹, Ms. Dora Dodig Hundrić¹ (1. Faculty of Education and Rehabilitation Sciences University of Zagreb)
Everything together

Why do flagship evidence-based programmes from the US run aground in Europe, and how should online repositories of programmes deal with this? [campfire]

» Mr. Gregor Burkhart¹, Dr. Nick Axford², Ms. Shreya Sonthalia³, Prof. David Foxcroft⁴, Prof. Fabrizio Faggiano⁵, Ms. Charlotte De Kock⁶ (1. European Monitoring Centre for Drugs and Drug Addiction, 2. University of Plymouth, 3. Dartington Service Design Lab, 4. Oxford Brookes University, 5. Department of Clinical and Biological Sciences, University of Torino, Italy and Piedmont Centre for Drug Addiction Epidemiology, ASL TO3, Grugliasco (Torino), Italy, 6. University College Ghent)
Answers in this presentation
What is Intervention Mapping?

- A framework
  - Not a theory
  - Not a recipe

- Finding a route from a problem
  ... through an intervention ...

... to a solution.

- A shared vocabulary
Intervention Mapping

- Step 1: What? (needs assessment)
- Step 2: Why? (determinant studies)
- Step 3: How? (behavior change principles)
- Step 4: Program production
- Step 5: Implementation
- Step 6: Evaluation
Why is it all so hard?
200.000.000.000

89.000.000.000

7.000.000.000
89.000.000.000.000
×
7.000 connections
×
89.000.000.000.000
A model of behavior
Sub-behavior

Environmental condition

Health

Environmental condition

Quality of life

Target behavior

Target population individual

Sub-behavior

Sub-behavior

Sub-behavior
If I use a high dose of XTC, making contact with others is... much harder. Much easier.
Determinant

Determinant

 Determinant

Determinant

Determinant

Determinant

Determinant

Determinant

Determinant

Behavior change principle

Parameter for effectiveness

Application

Sub-determinant

Sub-determinant

Sub-determinant

Planning coping responses

- Identify barriers to target behavior and ways to deal with each barrier.
- Requires practicing the response.

Do my friends use a high dose of MDMA?

Requires practicing the response.
Determinant

Sub-determinant

Sub-determinant

Parameter for effectiveness

Behavior change principle

Application

Determinant

Determinant

Determinant

Requires practicing the response.

If I use a high dose of XTC, making contact with others is ...

If I use a high dose of XTC, afterwards I remember ...

If I use a high dose of XTC, time seems to pass ...

For my health, a high dose of XTC is ...

Do my friends use a high dose of MDMA?

Planning coping responses

Identify barriers to target behavior and ways to deal with each barrier.

Requires practicing the response.

Use a high dose of MDMA.

Use a high dose of MDMA.

Use a high dose of MDMA.

Use a high dose of MDMA.

Use a high dose of MDMA.

Use a high dose of MDMA.

Use a high dose of MDMA.
Implementation Mapping: Using Intervention Mapping to Develop Implementation Strategies

Maria E. Fernandez1, Gill A. ten Hoor2, Sanne van Lieshout3, Serena A. Rodriguez1,4, Rinad S. Beidas5,8, Guy Parcel1, Robert A. C. Ruiter2, Christine M. Markham1 and Gerjo Kok2

1 Center for Health Promotion and Prevention Research, University of Texas Health Science Center at Houston School of Public Health, Houston, TX, United States, 2 Department of Work and Social Psychology, Maastricht University, Maastricht, Netherlands, 3 Department of Public Health, Amsterdam UMC, University of Amsterdam, Amsterdam, Netherlands, 4 Department of Population and Data Sciences, University of Texas Southwestern Medical Center, Dallas, TX, United States, 5 Department of Psychiatry, University of Pennsylvania, Philadelphia, PA, United States, 6 Department of Medical Ethics and Health Policy, University of Pennsylvania, Philadelphia, PA, United States

Background: The ultimate impact of a health innovation depends not only on its effectiveness but also on its reach in the population and the extent to which it is implemented with high levels of completeness and fidelity. Implementation science has emerged as the potential solution to the failure to translate evidence from research into effective practice and policy evident in many fields. Implementation scientists have developed many frameworks, theories and models, which describe implementation determinants, processes, or outcomes; yet, there is little guidance about how these can inform the development or selection of implementation strategies (methods or techniques used to improve adoption, implementation, sustainment, and scale-up of interventions) (1, 2). To move the implementation science field forward and to provide a practical tool to apply the knowledge in this field, we describe a systematic process for planning or...
Do my friends use a high dose of MDMA? Requires practicing the response.

Identify barriers to target behavior and ways to deal with each barrier.

Planning coping responses

Parameter for effectiveness

Behavior change principle

Application

Target behavior

Environmental condition

Determinant

Sub-determinant

Environmental agent

Individual

Health

Quality of life

Target population
A deep dive
Behavior change principle

Application

Target behavior

Sub-determinant

Determinant

Sub-determinant

Determinant

Sub-determinant

Determinant

Sub-determinant

Determinant

Environmental condition

Environmental condition

Environmental condition

Environmental condition

Environmental condition

Health

Quality of life

Target population

individual

Do my friends use a high dose of MDMA?

Planning coping responses

Identify barriers to target behavior and ways to deal with each barrier.

Requires practicing the response.

If I use a high dose of XTC, making contact with others is...

If I use a high dose of XTC, afterwards I remember...

If I use a high dose of XTC, time seems to pass...

For my health, a high dose of XTC is...
89.000.000.000
×
7.000 connections
×
89.000.000.000
Habituation
Operant conditioning
Procedural memory
Vicarious learning

What a cute little critter.
I’ll go pet it.

Auw.

Grrrr.

More grrrr.
Reflective learning
Habituation / sensitization
Classical conditioning
Operant conditioning
Affective learning / emotional memory
Procedural memory
Cognitive maps
Vicarious conditioning
Abstract concept learning / declarative memory
Reflective learning / autobiographical memory

Evolutionary Learning Processes, Crutzen & Peters, 2018
10.1080/17437199.2017.1362569
Planning coping responses

- Procedural memory
- Reflective learning

Evolutionary Learning Processes, Crutzen & Peters, 2018
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Planning coping responses

Identify barriers to target behavior and ways to deal with each barrier.
Planning coping responses

Identify barriers to target behavior and ways to deal with each barrier. Requires practicing the response.
A taxonomy of behaviour change methods: an Intervention Mapping approach

Gerjo Kok, Nell H. Gottlieb, Gjalt-Jorn Y. Peters, Patrick Dolan-Mullen, Guy S. Parcel, Robert A.C. Ruiter, María E. Fernández, Christine Markham, and L. Kay Bartholomew

ABSTRACT
In this paper, we introduce the Intervention Mapping (IM) taxonomy of behaviour change methods and its potential to be developed into a classing taxonomy. That is, although IM and its taxonomy of behaviour change methods are not in fact new, because IM was originally developed as a tool for intervention development, this potential was not immediately apparent. Second, in explaining the IM taxonomy and defining the relevant constructs, we call attention to the existence of parameters for effectiveness of methods, and explicate the related distinction between theory-based methods and practical applications and the probability that poor translation of methods may lead to erroneous conclusions as to...
99 methods

Motor cortex

Motor cortex

?
Will I remember everything if I use a high dose of MDMA?

Does a high dose give me more energy?

What do my friends think I should do?

Does a high dose make you hallucinate more?

Am I able to determine my dose accurately?

Will I remember everything if I use a high dose of MDMA?

Can I obtain pills with a low dose of MDMA?

Do my friends use a high dose of MDMA?

Does a high dose facilitate connecting to others?

Is a higher dose of MDMA more unhealthy?

Does a high dose make you hallucinate more?

Do I like to hallucinate?
Do I like the effects of a high dose of MDMA?
Can I obtain pills with a low dose of MDMA?
What do my friends think I should do?
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Attitude

Perceived norm

Self-efficacy
<table>
<thead>
<tr>
<th>Method</th>
<th>Definition</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classical conditioning</td>
<td>Stimulating the learning of an association between an unconditioned stimulus (UCS) and a conditioned stimulus (CS).</td>
<td>Most effective when the time interval is short and the CS precedes the UCS.</td>
</tr>
<tr>
<td>Self-reevaluation</td>
<td>Encouraging combining both cognitive and affective assessments of one’s self-image with and without an unhealthy behavior.</td>
<td>Stimulation of both cognitive and affective appraisal of self-image. Can use feedback and confrontation; however, raising awareness must be quickly followed by increase in problem-solving ability and self-efficacy.</td>
</tr>
<tr>
<td>Environmental reevaluation</td>
<td>Encouraging realizing the negative impact of the unhealthy behavior and the positive impact of the healthful behavior.</td>
<td>Stimulation of both cognitive and affective appraisal to improve appraisal and empathy skills.</td>
</tr>
<tr>
<td>Shifting perspective</td>
<td>Encouraging taking the perspective of the other.</td>
<td>Initiation from the perspective of the learner; needs imaginary competence.</td>
</tr>
<tr>
<td>Arguments</td>
<td>Using a set of one or more meaningful premises and a conclusion.</td>
<td>For central processing of arguments they need to be new to the message receiver.</td>
</tr>
<tr>
<td>Direct experience</td>
<td>Encouraging a process whereby knowledge is created through the interpretation of experience.</td>
<td>Rewarding outcomes from the individual’s experience with the behavior or assurance that the individual can cope with and reframe negative outcomes.</td>
</tr>
<tr>
<td>Elaboration</td>
<td>Stimulating the learner to add meaning to the information that is processed.</td>
<td>Individuals with high motivation and high cognitive ability; messages that are personally relevant, surprising, repeated, self-pacing, not distracting, easily understandable, and include direct instructions; messages that are not too</td>
</tr>
</tbody>
</table>
### Table 6: Methods to Change Social Influence (Adapted from Bartholomew et al., 2011)

<table>
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<tr>
<th>Method</th>
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<td><strong>Information about others’ approval</strong> (Theory of Planned Behavior; Reasoned Action Approach; Social Comparison Theory; Forsyth, 2014; Mollen, Ruiter, &amp; Kok, 2010)</td>
<td>Providing information about what others think about the person’s behavior and whether others will approve or disapprove of any proposed behavior change.</td>
<td>Positive expectations are available in the environment.</td>
</tr>
<tr>
<td><strong>Resistance to social pressure</strong> (Theory of Planned Behavior; Reasoned Action Approach; Evans, Getz, &amp; Raines, 1992; Evans, 1984)</td>
<td>Stimulating building skills for resistance to social pressure.</td>
<td>Commitment to earlier intention; relating intended behavior to values; psychological inoculation against pressure.</td>
</tr>
<tr>
<td><strong>Shifting focus</strong> (Theory of Planned Behavior; Reasoned Action Approach; Fishbein &amp; Ajzen, 2010)</td>
<td>Prompting hiding of the unpopular behavior or shifting attention away from the behavior.</td>
<td>Preferably shift focus to a new reason for performing the behavior.</td>
</tr>
<tr>
<td><strong>Mobilizing social support</strong> (Diffusion of Innovations Theory; Theories of Social Networks and Social Support; Holt-Lunstad &amp; Uchino, 2015; Valente, 2015)</td>
<td>Prompting communication about behavior change in order to provide instrumental and emotional social support.</td>
<td>Combines caring, trust, openness, and acceptance with support for behavioral change; positive support is available in the environment.</td>
</tr>
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<td><strong>Provide opportunities for social comparison</strong> (Social Comparison Theory; Suls, Martin, &amp; Wheeler, 2002)</td>
<td>Facilitating observation of nonexpert others in order to evaluate one’s own opinions and performance abilities.</td>
<td>Upward comparison may help setting better goals; downward comparison may help feeling better or more self-efficacious.</td>
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<td>Method</td>
<td>Definition</td>
<td>Parameters</td>
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<td><strong>Guided practice</strong> (Social Cognitive Theory; Theories of Self-Regulation; Kelder et al., 2015)</td>
<td>Prompting individuals to rehearse and repeat the behavior various times, discuss the experience, and provide feedback.</td>
<td>Subskill demonstration, instruction, and enactment with Individual feedback; requires supervision by an experienced person; some environmental changes cannot be rehearsed.</td>
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<td><strong>Enactive mastery experiences</strong> (Social Cognitive Theory; Theories of Self-Regulation; Kelder et al., 2015)</td>
<td>Providing increasingly challenging tasks with feedback to serve as indicators of capability.</td>
<td>Requires willingness to accept feedback.</td>
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<td><strong>Verbal persuasion</strong> (Social Cognitive Theory; Theories of Self-Regulation; Kelder et al., 2015)</td>
<td>Using messages that suggest that the participant possesses certain capabilities.</td>
<td>Credible source.</td>
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<td><strong>Improving physical and emotional states</strong> (Theories of Self-Regulation; Kelder et al., 2015)</td>
<td>Prompting interpretation of enhancement or reduction of physiological and affective states, to judge own capabilities.</td>
<td>Must carefully interpret and manage emotional states.</td>
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<td><strong>Reattribution training</strong> (Attribution Theory and Relapse Prevention Theory; Theories of Self-Regulation; Marlatt &amp; Donovan, 2005)</td>
<td>Helping people reinterpret previous failures in terms of unstable attributions and previous successes in terms of stable attributions.</td>
<td>Requires counseling or bibliotherapy to make unstable and external attributions for failure.</td>
</tr>
<tr>
<td><strong>Self-monitoring of behavior</strong> (Theories of Self-Regulation; Creer, 2000; Harkin et al., n.d.)</td>
<td>Prompting the person to keep a record of specified behavior(s).</td>
<td>The monitoring must be of the specific behavior (that is, not of a physiological state or health outcome). The data must be interpreted and used. The reward must be reinforcing to the individual.</td>
</tr>
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<td><strong>Provide contingent rewards</strong> (Theories of Learning; Theories of Self-Regulation; Bandura, 1986)</td>
<td>Praising, encouraging, or providing material rewards that are explicitly linked to the achievement of specified behaviors.</td>
<td>Rewards need to be tailored to the individual, group or organization, to follow the behavior in time, and to be seen as a consequence of the behavior.</td>
</tr>
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<td><strong>Cue altering</strong> (Theories of Automatic, Theories of Systematic, Bandura, 1986)</td>
<td>Teaching changing a stimulus, response, or both response.</td>
<td>Existing positive intention.</td>
</tr>
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</table>
Do my friends use a high dose of MDMA?

Identify barriers to target behavior and ways to deal with each barrier. Requires practicing the response.
Attitude

Does a high dose of MDMA facilitate connecting to others?

Will I remember everything if I use a high dose of MDMA?
The Intervention Mapping protocol
Step 1 Needs assessment

Step 2 Determinant analysis

Step 3 Methods & applications

Step 4 Intervention

Step 5 Implementation

Step 6 Evaluation

Does a high dose of MDMA facilitate connecting to others?

Will I remember everything if I use a high dose of MDMA?
Throughout

- Ecological model
- Core processes
  - Brainstorm
  - Empirical evidence
  - Theory
  - New research

Attitudes towards alcohol use: A study among young adults and teenagers drinking in the streets [EC oral poster]
  - Ms. Maite Kefauver
  - Ms. Joella Anupol
  - Ms. Mariàngels Duch Moya
  - Ms. Zara Quigg
  - Prof. Elena Gervilla
  - 1. IREFREA - European Institute of Studies on Prevention
  - 2. LJMU
  - 3. University of the Balearic Islands

If I use a high dose of XTC, making contact with others is ...
If I use a high dose of XTC, afterwards I remember ...
If I use a high dose of XTC, time seems to pass ...
For my health, a high dose of XTC is ...

If I use a high dose of XTC, much harder ...
If I use a high dose of XTC, much less ...
If I use a high dose of XTC, much slower ...
For my health, a high dose of XTC is much worse ...

If I use a high dose of XTC, much easier ...
If I use a high dose of XTC, much more ...
If I use a high dose of XTC, much faster ...
For my health, a high dose of XTC is much better ...

Scales and 90.0% CIs

90% CIs of associations
IM step 1

Planning group:
- Prevention scientist
- Experts on problem and target population
- Target population members
- Implementers
- Other stakeholders, experts, etc

Logic model of the problem

Program goal(s)
IM step 2

- Performance objectives, environmental conditions, determinants
- Matrices of change objectives:

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## IM step 2

- **Performance objectives, environmental conditions, determinants**
- **Matrices of change objectives:**

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<td>Who ...</td>
<td>... does what</td>
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<td>Performance objective 2: ... gets their XTC tested</td>
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### IM step 2

- **Performance objectives, environmental conditions, determinants**
- **Matrices of change objectives:**

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<th>Perceived norms</th>
<th>Self-efficacy</th>
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<td>... explains that high doses make connecting to others harder</td>
<td>... explains that important people approve of recommended dosing</td>
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<td>Performance objective 2: ... gets their XTC tested</td>
<td>... explains that their friends approve of them getting their XTC tested</td>
<td>... expresses confidence to drop XTC pill off at testing centre</td>
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IM step 2

Environmental condition

Environmental condition

If I use a high dose of XTC, it is harder to connect to others.

If I use a high dose of XTC, time seems to pass faster.

If I use a high dose of XTC, I remember less.

Most people that are important to me approve of dosing XTC within the recommendations.

Attitude

Perceived norm

Decide to avoid using a high dose of XTC

Dose XTC within recommendation

Sub-determinants
determinants
sub-behaviors
target behavior
**IM step 3**

**Persuasive communication**

Messages must be relevant and should not deviate too much from the target populations’ beliefs. Can be stimulated with surprise and repetition; contains arguments.

**Information about others’ approval**

In reality, others have positive attitudes towards the target behavior.

**Behavior Change Principles**

- Highlight the Party Panel result that most people prefer lower doses of XTC.
-\[\text{Highlight the Party Panel result that most people prefer lower doses of XTC.}\]

**Applications**

- An infographic shows the changing effects of XTC as the dose increases.

**Sub-determinants**

- If I use a high dose of XTC, it is harder to connect to others.
- If I use a high dose of XTC, time seems to pass faster.
- If I use a high dose of XTC, I remember less.
- Most people that are important to me approve of dosing XTC within the recommendations.
IM step 4

- Integrating applications into program
- Preparing for program production
- Overseeing executive producers
  (e.g. advertising agencies, copywriters, app builders, etc)
- Pretesting, pretesting, pretesting
- Design!
IM step 5

- Anticipating on implementation
- Include stakeholders in planning group
- Repeat steps 2 onward for each group
Requires practicing the response.

Behavior change principle

Application

Sub-determinant

Sub-determinant

Sub-determinant

Sub-determinant

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Sub-determinant

Sub-determinant

Parameter for effectiveness

Planning coping responses

Identify barriers to target behavior and ways to deal with each barrier.

Requires practicing the response.

Do my friends use a high dose of MDMA?

If I use a high dose of XTC, making contact with others is ...

If I use a high dose of XTC, afterwards I remember ...

If I use a high dose of XTC, time seems to pass ...

For my health, a high dose of XTC is ...

Determinant

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Determinant

Environmental condition

Target behavior

Target behavior

Target behavior

Target behavior

Target behavior

Target behavior

Target behavior

Target behavior

Health

Quality of life

Target population

individual

Implementer

Environmental agent
IM step 6

- Anticipating on evaluation
- SMART goals and objectives (Change objective phrasing)
- Select/develop measurement instruments
- Plan evaluation
  - Design (RCT? ESM? Quantitative? Qualitative?)
  - Sample size computations
  - Logistics
Easy, practical tools:

the causal structural chain and acyclic behavior change diagram

[slides at https://osf.io/gkyza]
Causal-Structural Chain

Behavior change principle(s)

Parameter(s) for effectiveness

Application(s)

Sub-determinant

Determinant

Sub-behavior

Target behavior

Planning coping responses
Identify barriers to target behavior and ways to deal with each barrier.
Requires practicing the response.
If I use a high dose of XTC, time seems to pass faster. Decide to avoid using a high dose. Dose XTC within recommendation. Relevant message: If I use a high dose of XTC, time seems to pass faster. Persuasive communication.
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Acyclic Behavior Change Diagram (ABCD)
Why do flagship evidence-based programmes from the US run aground in Europe, and how should online repositories of programmes deal with this? [campfire]

Mr. Gregor Burkhart¹, Dr. Nick Axford², Ms. Shreya Sonthalia³, Prof. David Foxcroft⁴, Prof. Fabrizio Faggiano⁵, Ms. Charlotte De Kock⁶

1. European Monitoring Centre for Drugs and Drug Addiction

**Acyclic Behavior Change Diagram (ABCD)**

- **Persuasive communication**
  - Messages must be relevant and should not deviate too much from the target populations’ beliefs. Can be stimulated with surprise and repetition; contains arguments.

- **Information about others’ approval**
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- **Highlight the Party Panel result that most people prefer lower doses of XTC.**
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- **Perceived norm**
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Do my friends use a high dose of MDMA?

Planning coping responses

Identify barriers to target behavior and ways to deal with each barrier.

Requires practicing the response.
Applying Prevention Science
Intervention Mapping as an Integrative Framework

More resources & references:

https://bookofbehaviorchange.com
https://interventionmapping.com
https://effectivebehaviorchange.com

[ slides at https://osf.io/gkyza ]

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Open University of the Netherlands

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@gjalt-jorn@behaviorchange.eu