Evidence-based behavior change protocol

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Why behavior change?

Hardware: Misuse
Why behavior change?

Hardware: Misused

Rainwater harvesting
Why behavior change?

Hardware: Badly used
Why behavior change?

Hardware: Not at all used
What determines the Hardware Use?

Supply with “Hardware”

Person

Use / Compliance
Behavioral Factors determine the Use of Hardware

Hardware
- Supply with bucket and chlorine

Software
- Behavior Change
- Technique

Person
- Factor A
- Factor B
- Factor C
- Factor D

Drinking disinfected water
The 9 Steps towards sustainable Behavior Change

1. Defining the behavior
2. Conditions of the behavior
3. Catalogue of behavior determinants
4. Develop questionnaire
5. Conduct a baseline survey
6. Determine steering factors
7. Define and design interventions (BCTs)
8. Define communication channels
9. Evaluate behavior change
Step 1: Define the behaviour to be changed and the target population to be tackled

Target behaviour
What is the safe water option that should be used?
What performance is required to use that safe water option?
Which behaviour is crucial for the target population and not habitualised?

Target population
Who are the decision makers?
Who are the people who perform the target behaviour?

Tasks to complete step 1:
1. Interviews with experts
2. Interviews with local partners
3. Interviews with community and opinion leaders
4. Focus-group discussion
Step 2: First impression about the favouring and hindering conditions of the behaviour

- Intensive, in-depth interviews about barriers and facilitating conditions of the behaviour.
- Ask directly about the reasons to perform or not to perform a behaviour
- Cultural habits regarding the social milieu of the target behaviour
- Observations of the daily when and where people perform or do not perform the behaviour,
- Situational conditions of the behaviour

Tasks to complete step 2:
1. In-depth interviews with people who are responsible for performing the behaviour
2. Observation of randomly selected households during a whole day
Am I at risk? Why?

What will others say?

Can I do it?

How to manage it?

Do I like it?

What does it cost/bring?
Step 3: Catalogue all possible behavioural determinants

The RANAS-Model: Risk, Attitudes, Norms, Ability and Self-regulation

Information
Behavior Change
Techniques

Risk Factors:
- Perceived Vulnerability
- Perceived Severity
- Factual Knowledge

Persuasion
Behavior Change
Techniques

Attitude Factors:
- Instrumental Beliefs (Benefits/Costs)
- Affective Beliefs (Emotions)

Norm
Behavior Change
Techniques

Norm Factors:
- Descriptive Norm (Others behavior)
- Injunctive Norm (Others approval)
- Personal Norm

Infrastructural,
Skill & Ability
Behavior Change
Techniques

Ability Factors:
- Action Knowledge
- Self-Efficacy
- Maintenance S.-Efficacy
- Recovery S.-Efficacy

Planning &
Relapse Prevention
Behavior Change
Techniques

Self-Regulation Factors:
- Action Control/Planning
- Coping Planning
- Remembering
- Commitment

Behavior A
Intention
Use/Behavior
Habit

Behavior B
Intention
Use/Behavior
Habit

Tasks to complete step 3:
1. Fill the behavioural determinants with contents regarding the target behaviour
2. If necessary, add more behavioural determinants drawn from of the qualitative formative research phase (step 2).
Step 4: Develop questionnaire to measure behavioural factors

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item example</th>
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</table>
| Knowledge            | What causes colored teeth?  
                        | What causes deformed bones?                                                                                                               |
| Vulnerability        | How high or low do you feel are the chances that you get skeletal fluorosis/that someone of your family develops dental fluorosis/that someone of your family develops skeletal fluorosis? The chances are...-2 = much lower than average / 2 = much higher than average |
| Severity             | Imagine that you contracted skeletal fluorosis, how severe would be the impact on... your life in general? ... your social life? ... your economic situation? 0 = not severe at all 4 = very severe |
| Affective Attitude   | How good or bad would you say is it to consume filtered water? -4 = very bad 4 = very good                                                                 |
| Injunctive norm      | Do you think that, over all, people who are important to you rather approve or disapprove that you use the filter?  
                        | -4 = very strong disapproval / 4 = very strong approval                                                                                     |
| Subjective Norm      | Most people, who are important to me, think I should use the filter. -4 = I strongly disagree / 4 = I strongly agree                             |
Step 5: Conduct a representative baseline survey

- Face-to-face interviews → standardized questionnaires
- Team: social worker, field manager, community facilitators, master students & team of interviewers
Tasks to complete step 5:

1. Translate and retranslate your questionnaire

2. Recruit a team of local interviewers

3. Train the interviewer team in how to approach households, interviewing techniques, and the questionnaire

4. Pretest your questionnaire in the field (with approx. 20-30 households)

5. Select households for interviews randomly
Step 6: Determine the factors, which steer the target behaviour

Differences in mean of 100% users and less than 100% users
### Step 7: Define and design interventions to change recognised behavioural factors

#### RANAS Intervention Matrix

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Informational BCTs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factual knowledge</td>
<td>Presentation of facts/knowledge transfer</td>
</tr>
<tr>
<td>Vulnerability</td>
<td>Personal risk information</td>
</tr>
<tr>
<td>Severity</td>
<td>Showing scenarios</td>
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<tr>
<td></td>
<td>Fear arousal</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Attitudinal Factors</th>
<th>Persuasion BCTs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental beliefs</td>
<td>Persuasive arguments</td>
</tr>
<tr>
<td></td>
<td>Persuasive means</td>
</tr>
<tr>
<td></td>
<td>Talking to others</td>
</tr>
<tr>
<td>Affective beliefs</td>
<td>Affective persuasion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Normative Factors</th>
<th>Normative BCTs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive norm</td>
<td>Highlighting norms</td>
</tr>
<tr>
<td>Injunctive norm</td>
<td>Informing about others’ approval/disapproval</td>
</tr>
<tr>
<td>Personal Norm</td>
<td>Public commitment</td>
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<tr>
<td></td>
<td>Anticipated regret</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Ability Factors</th>
<th>Infrastructural, Skill &amp; Ability BCTs</th>
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<tbody>
<tr>
<td>Action knowledge (skills)</td>
<td>Provide instruction</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Guided practice</td>
</tr>
<tr>
<td></td>
<td>Facilitating resources (financing)</td>
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<tr>
<td></td>
<td>Social help</td>
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<tr>
<td></td>
<td>Modelling</td>
</tr>
<tr>
<td></td>
<td>Reattribution of past successes and failures</td>
</tr>
<tr>
<td>Maintenance (Coping) self-efficacy</td>
<td>Coping with barriers</td>
</tr>
<tr>
<td>Recovery self-efficacy</td>
<td>Coping with relapse</td>
</tr>
</tbody>
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<tr>
<th>Self-Regulation Factors</th>
<th>Planning &amp; Relapse Prevention BCTs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action control</td>
<td>Daily routine planning</td>
</tr>
<tr>
<td>Coping planning</td>
<td>Outcome feedback</td>
</tr>
<tr>
<td>Remembering</td>
<td>Stimulus control</td>
</tr>
<tr>
<td>Commitment</td>
<td>Forming implementation intentions</td>
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<td></td>
<td>Prompts</td>
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</tbody>
</table>
Tasks to complete step 7:

1. Take your calculation from step 6 and identify which of your behavioural factors has the strongest intervention potential.

2. Link your behavioural factors with the strongest potential to the Intervention Matrix and see possible BCTs for influencing that factor.

3. After identifying possible BCTs, check the provided examples and decide if these would be applicable in your case.
Step 8: Define suitable communication channels

Mass Media Channels

Print media: newspaper, brochure, leaflets, and internet

Audio-visual media: radio, television, loudspeaker system or car are audio-visual media.

*Informative report*: information is disseminated

*Mass media role modeling*: role model stories of community members

*Entertainment-education*: portrayals of role models and reinforcements

*Behavioral journalism*: potential models are interviewed with questions designed to elicit information
Step 8: Define suitable communication channels

Interpersonal Channels
bring messages to a person, or a group of persons of different size.

Community meetings

Home visits with promoters

Opinion leaders

Peer to peer communication

From teachers to children to parents

Small group training

Mobilizing social networks
Step 9: Evaluate the effectiveness of the behaviour change techniques and their long-term effects

Tasks to complete step 9:

1. After the implementation of the BCTs wait for 1-2 month

2. Add questions about the BCTs to your baseline questionnaire

3. Conduct the intermediate survey to evaluate the intervention effects

4. After the last survey wait for 6-12 months and make sure that during this period there are no activities taking place in the project area

5. Add questions about reasons for stopping the target behavior

6. Conduct your final survey to evaluate the long-term effects of BCTs

7. Calculate the short and long-term effects of BCTs
Proportion of households observed to have SODIS bottles in the sun at baseline (BL) and subsequent panel surveys (P1-P8).
Promotion of Solar Water Disinfection in Bolivia

- users consume 60% SODIS water (25% boiled water), half year after implementation

Promotion of Solar Water Disinfection in Zimbabwe

- 100’000 new users (proved with random sampling)
- users consume 70% SODIS water, 1 year after implementation

Promotion of use of alternative water sources for arsenic in Bangladesh

- 65% new users of arsenic free wells (people had access before)
General Conclusion

Evidence-based behavior change protocol enables

1. the systematic determination of the factors to be changed
2. the selection of the corresponding behavior change strategies
3. and their proven record of success

Evidence-based psychological behavior change protocols should be integrated into development programs
Thank you for your attention!