How to improve pre-swim shower behaviour

A minimal intervention field experiment in a holiday park

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Content

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2. Theory of behavioural change
3. Our study
4. Conclusions
Previous research

- Initial anthropogenic pollutants
- Continual anthropogenic pollutants
- Incidental anthropogenic pollutants

60-80% of anthropogenic pollutants are released by unhygienic behaviour
What to do

Improvement of hygienic behaviour will reduce anthropogenic pollutants and reduce unwanted DBP’s significantly.

We needed help from behavioural scientists University of Twente.
Behavioural change (1)

Many publications on behavioural change:
• Using stairs instead of escalator
• Re-use of towels in hotels

Similarity of these study's:
• Use of posters with short messages
• Based on theories from behavioural science
  – Communication
  – Psychology
Behavioural change (2)

Global methods:
• Informative method
• Normative method
• Adding a game element
• (pointing towards) facilities
Informative method

Mechanism: when people know why certain behaviour is desirable, they act alike
Normative

Describe the social norm: what other people do or feel

Mechanism: deviation from the norm leads to social rejection
Adding a game element

Mechanism: no arguments but stimuli
(pointing towards) facilities

Mechanism: remove barriers to promote desired behaviour
Previous study

- 3 communal swimming pools
- 3 minimal interventions
  1. Normative
  2. Informative
  3. Routing game
- Informative method best results
- Barrier found in carrying belongings
- Additional variables due to different locations
Setup current study

• Reduce variables between locations
• Use holiday park swimming pool
  – Location variables are constant
  – Each week new set of visitors (subjects)
Interventions

- 2x informative
- 2x normative
- 2x (pointing towards) facilities
- 3x combinations of above
No irritated eyes?

Take a **shower before swimming**

Dirt on the body reacts with chlorine in the pool water. This causes irritated eyes. Showering before swimming washes away this dirt and reduces the chances of getting irritated eyes.

Taking a shower before swimming decreases chances of getting red eyes

Dirt on the body reacts with chlorine in the pool water. This causes irritated eyes. Showering before swimming washes away this dirt and reduces the chances of getting irritated eyes.

Informative
Normative

Most people take a shower before swimming

Fellow swimmers appreciate it if you take a shower before swimming
Facilities

Hands free when showering?

You can store your belongings on the table around the corner
Method

• Signs on the door leading to the shower/pool area
• Visual observation of visitors (no interaction with subjects)
• Reference: pre-swim shower% without signs
• 6 single interventions: each intervention 1 day observation
• 3 combinations of best single interventions

Total: 1771 swimmers observed
Results interventions

Current study

<table>
<thead>
<tr>
<th>Observations</th>
<th>Baseline</th>
<th>Informative 1</th>
<th>Informative 2</th>
<th>Normative 1</th>
<th>Normative 2</th>
<th>Improving facilities 1</th>
<th>Improving facilities 2</th>
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<tbody>
<tr>
<td>1</td>
<td>41.2%</td>
<td>45.5%</td>
<td>48.9%</td>
<td>59.4%</td>
<td>61.7%</td>
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</tbody>
</table>
Results groups

- Observed pre-swim shower rate (%)

<table>
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<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Age 0-9</th>
<th>Age 10-19</th>
<th>Age 20-49</th>
<th>Age 50+</th>
<th>No belongings</th>
<th>Belongings</th>
<th>Children/adults alone</th>
<th>Children with adults</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>51.5%</td>
<td>46.7%</td>
<td>49.3%</td>
<td>52.8%</td>
<td>48.1%</td>
<td>53.4%</td>
<td>50.8%</td>
<td>37.0%</td>
<td>46.2%</td>
<td>50.8%</td>
</tr>
</tbody>
</table>

Observations:
1. Male
2. Female
3. Age 0-9
4. Age 10-19
5. Age 20-49
6. Age 50+
7. No belongings
8. Belongings
9. Children/adults alone
10. Children with adults
Conclusions

- Communal pool → informative method
- Holiday park pool → normative method

Maybe different motivation for behavioural change in different types of swimmers
Future questions?

- What is the influence of watching eyes?
- What is the influence of audio/video messages?
- Does teaching normal hygienic behaviour during swimming lessons improve hygienic behaviour?
- What other barriers inhibit pre-swim showering?
- What is the optimal pool design for hygienic behaviour?
- How to get people to use a toilet when nature calls?
- Small changes can have a big influence
Acknowledgements

- Financing organisations: Ministry of economic affairs, European Fund for Regional Development (EFRO), Hellebrekers Technieken, van Remmen UV Techniek, AkzoNobel Industrial Chemicals, Coram International and Sportfondsen Nederland

- all organisations, pool personal and swimmers who accommodated, co-operated or participated in this study
Thanks for your attention

Questions ?

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