Research in and Design of
Toilet Supports
&
Means for Perineal Cleansing

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This presentation

Usability studies by URB Delft

- Comfort toilet seats
- Usage & preferences for supports
- Usage & preferences for perineal cleansing

Results of these studies

Implementation of results in FRR designs
The test environment Do-It-Yourself store Delft
The test environment

Usability laboratory at TUD

Means for perineal cleansing:

• Several types of support
• Model washbasin concept
Pre-test  5 Students
Old age simulation gear
Fine-tune test set-up
Identify possibly strenuous activities
Guarantee safety
Usage different types of supports

- Sitting down
- Standing up
Usage means for perineal cleansing

Toilet paper
Sprayer & Blower
**Questionnaires**

**Common toilet postures**

**Means for perineal cleansing:**

- Common used
- Experience
- Preference
### Results

Preferences positions per type of support

<table>
<thead>
<tr>
<th>Support Position</th>
<th>Vertical supports</th>
<th>Front support</th>
<th>Side supports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Neck</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Shoulder</td>
<td>7</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Chest</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Elbow</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Elbow/hip</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Hip</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Buttock</td>
<td>1</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Thigh</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Knee</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Results  Preferences for type of support per activity

- Standing up: 10 vertical, 4 front, 3 side
- Sitting down: 8 vertical, 2 front, 4 side
- While wiping buttocks: 6 vertical, 4 front, 4 side, 1 seniors only

“Developing Friendly Rest Rooms for the elderly and the disabled people”
FRR Final Conference Vienna, 17th March 2005
Results Postures perineal cleansing

Observed postures

<table>
<thead>
<tr>
<th>Posture Description</th>
<th>Number of Instances</th>
</tr>
</thead>
<tbody>
<tr>
<td>sits 1 buttock from behind</td>
<td>10</td>
</tr>
<tr>
<td>hovers from behind</td>
<td>5</td>
</tr>
<tr>
<td>sits bending from behind</td>
<td>10</td>
</tr>
<tr>
<td>sits from front</td>
<td>0</td>
</tr>
<tr>
<td>stands straight from behind</td>
<td>0</td>
</tr>
<tr>
<td>hovers from front</td>
<td>5</td>
</tr>
</tbody>
</table>

Declared common postures

1. sitting one buttock, behind
2. sitting bending over, behind
3. sitting, front
4. hovering, front
5. hovering, behind
6. standing straight, front
7. standing straight, behind

Bar chart showing distribution of postures.
Implementation results research in design

Toilet seat
Transfer surfaces
Implementation results research in design

Supports

- Type
- Dimensions
- Location

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Implementation results research in design

Washbasin
Implementation results research in design Digital model FRR
Conclusions

Horizontal and vertical supports both valuable

Indications for the range of adjustability of supports

Redesigned washbasin valuable, especially the swivel function

Many hygienic issues remaining

Differences in toilet seat shapes can be perceived

Variations in toilet behaviour

Handling ethical issues of research ‘in the toilet’