



Get Ready for Activity – Ambient Day Scheduling with Dementia

Implementation report

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Preface

This document forms part of the Research Project “Get Ready for Activity – Ambient Day Scheduling with Dementia (GREAT)” funded by the AAL 2016 “Living well with dementia” funding program as project number AAL-2016-023. The GREAT project will produce the following Deliverables:

D1.1 Medical, psychological and technological framework

D2.1 Applicable hardware components

D2.2 Applicable software components

D2.3 Field tested hardware components

D2.4 Field tested software components

D3.1 Implementation report

D3.2 Field test report

D4.1 Communication strategy

D4.2 Stakeholder management report

D5.1 Report on market analysis

D5.2 Dissemination plan

D5.3 Intermediate business plan

D5.4 Exploitation plan

D5.5 Final business plan

D6.1 Consortium agreement

D6.2 Calendar year report 2018

D6.3 Calendar year report 2019

D6.4 Mid-term review questionnaire

D6.5 Final report

The GREAT project and its objectives are documented at the project website <http://uct-web.labs.fhv.at>. More information on GREAT and its results can also be obtained from the project consortium:

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1. Functional Testing with End-Users

1.1 Participants

Functional Testing was realised in three institutions and four private flats from mid-November 2017 until the end of January 2018. The institutions were: administration of retirement home Stiftung Griesfeld in Neumarkt/South Tirol, nursing room in the hospital in Hall/Tirol, offices of CURAVIVA in Bern/Switzerland. In Austria the functional testing was done in to flats, in Italy and Switzerland in one flat respectively.

The lawful persons responsible for those institutes and all testing people have signed a declaration of consent; in this „informed declaration of consent“ the aims of the research project „GREAT“, the process of the functional testing, eventual risks and the exclusion of liability were outlined.

At the end of the testing weeks all of the testing people filled out online-questionnaires. Those questionnaires served to evaluate the acceptance of the individual modules and the ease of use of the system as a whole.

At the institutes the questionnaires were filled out by people from administration with medical/nursing duties.

At the end of the testing weeks 31 persons filled out the questionnaires as follows:

	institute	private flat
Italy	6	2
Austria	7	5
Switzerland	8	3

Table 1: Filled out questionnaires by type

At the institutes the testing lasted for about two to three weeks. For the private flats on the other hand, it lasted for about six days.

1.2 Light module

Just over half of the people were able to recognise by means of the light, which intervention was executed, about a third could not recognise the form of intervention (see Figure 1).

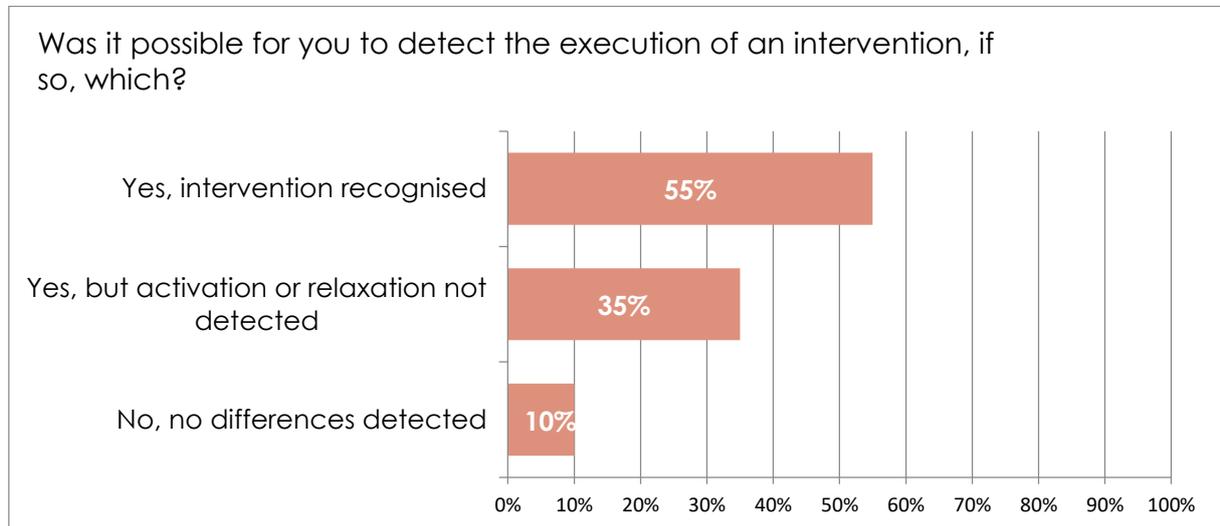


Figure 1: Perception of light

Approximately 60 % could recognise the interventions on intensity/brightness and colour of light. The light for activation and relaxation was rated as „very good“ or „rather good“ by 81 % respectively 88 % of the participants. However, three persons did rate the light with „rather bad“ or „very bad“. Overall, the light was rated as „very good“ or „rather good“ by all except two persons (see Figure 2).

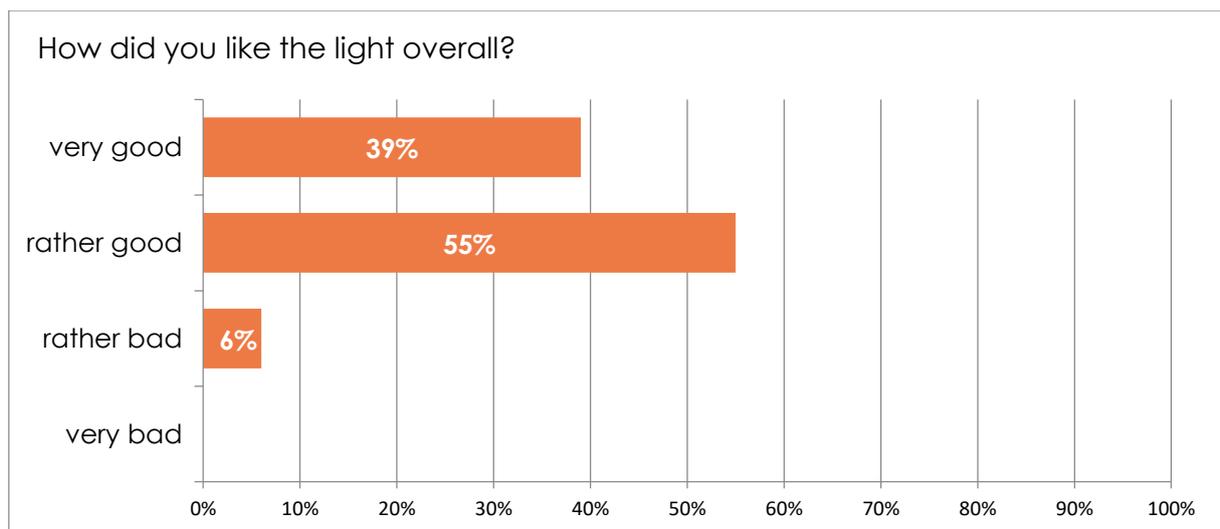


Figure 2: How did you like the light?

Acceptance of the light module

Generally, the light module was rated good: A majority of interviewees stated, that the light was suitable for working and as ambient room lighting. For nearly no one was the light too dark or bothering. For the subjective rating of the effect – meaning, if the soothing light respectively the activating light was indeed soothing or activating – there were some doubts.

Likewise regarding the appropriacy of the duration for the interventions, the opinions were a bit divided (see Figure 3).

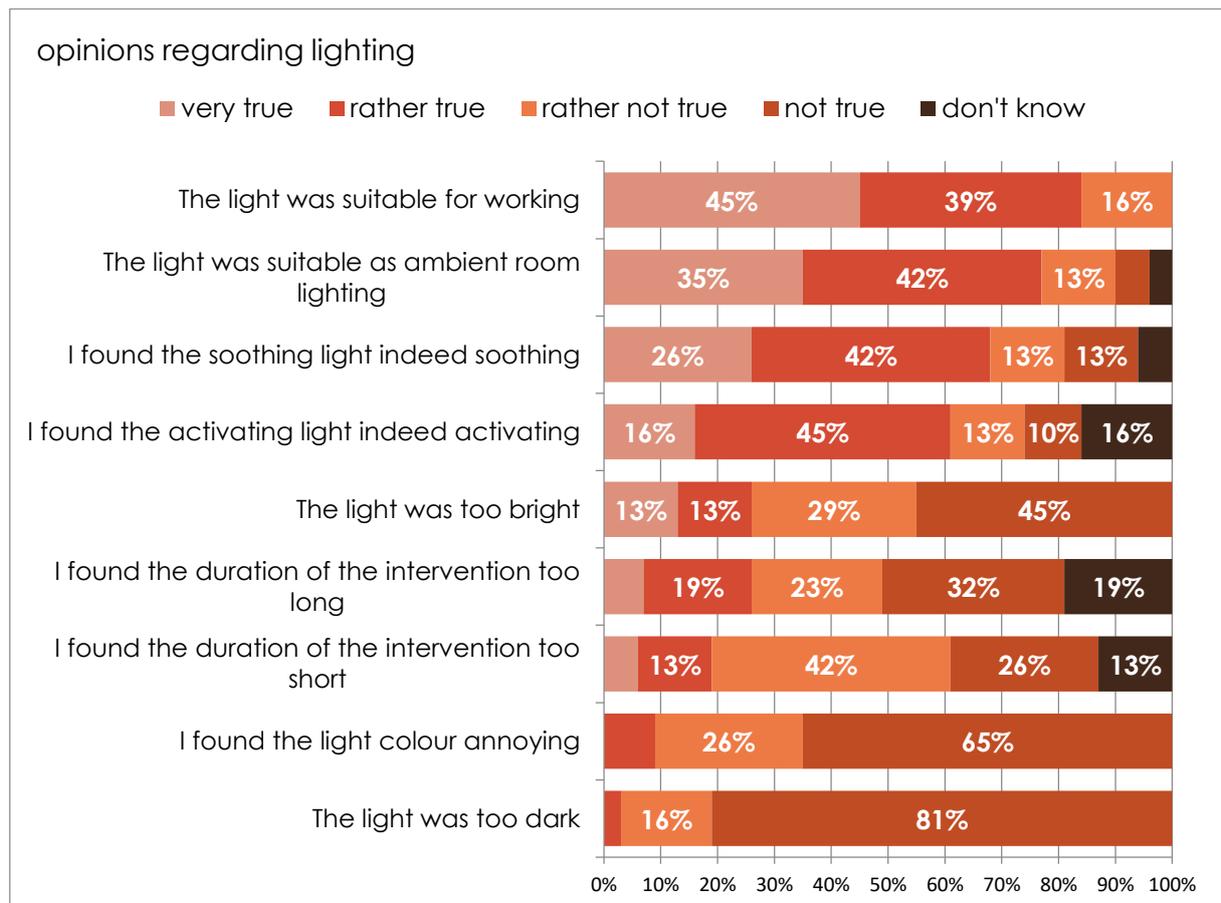


Figure 3: Opinions on lighting

Open answers to the lighting

When asked „What was particularly good about the light?“ 28 people answered.

The answers focused on the following aspects: „daylight“, „very good Light distribution“, „I found it pleasantly bright“, „clear difference to light and dark“, „that it varies“, „timer function“, „found it very soothing“.

In the open question „What you not like regarding the light?“ 17 people answered. The answers have considered the following aspects: „the appearance“, „not adjustable“, „was partly not able to be modified. The operation by the iPad was poor“, „The calming light was still too bright“, „it was rather uncomfortable“, „partly too bright and unpleasant“.

One institution reported that in the second week with the automated control nothing worked with the lamp anymore. It was constantly changing to the orange nightlight and the carers have tried to compensate this by frequently pressing for Activation and unplugging and plugging the lamp.

1.3 Fragrance module

Just over half of the people were able to determine only by the smell, which intervention was executed. About one third could not recognize the type of intervention.¹

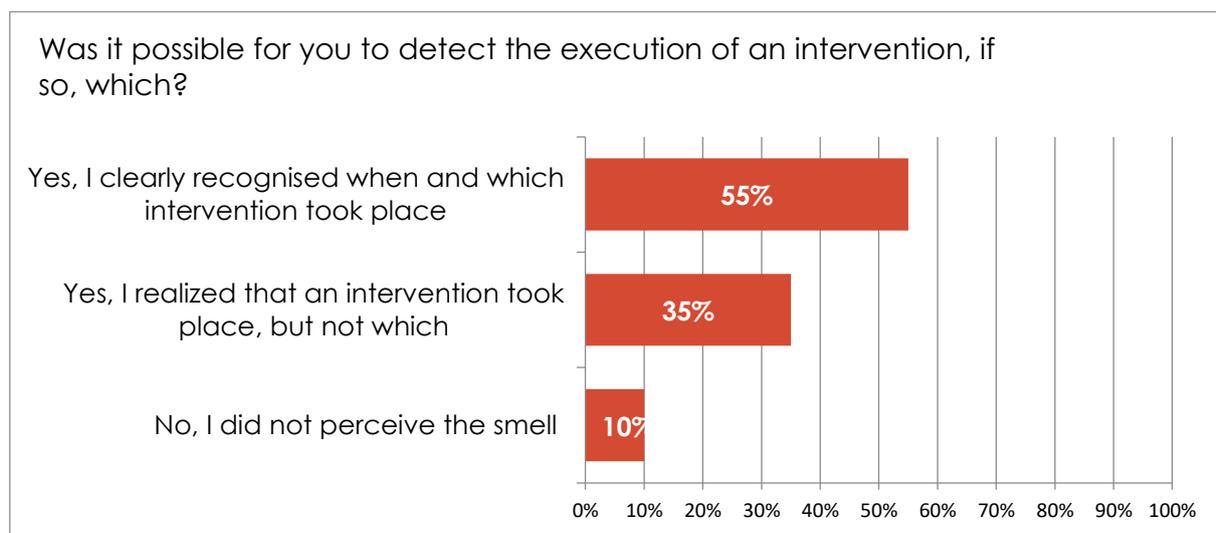


Figure 4: Perception module fragrance

The fragrance of activation generally pleased people quite well (see Figure 5). The relaxation scent on the other hand was much less appealing and for about a third of the participants it was „rather bad” or „very bad” (see Figure 6).

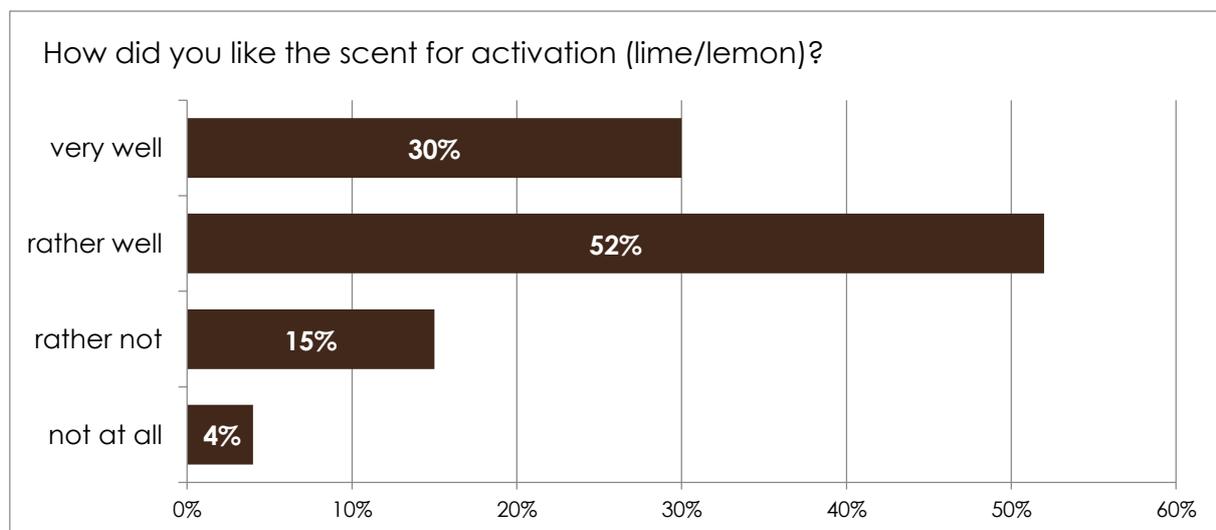


Figure 5: How did the activation fragrance please?

¹ This distribution is the same as that of the light, but the persons not recognizing the interventions, are others than with the light.

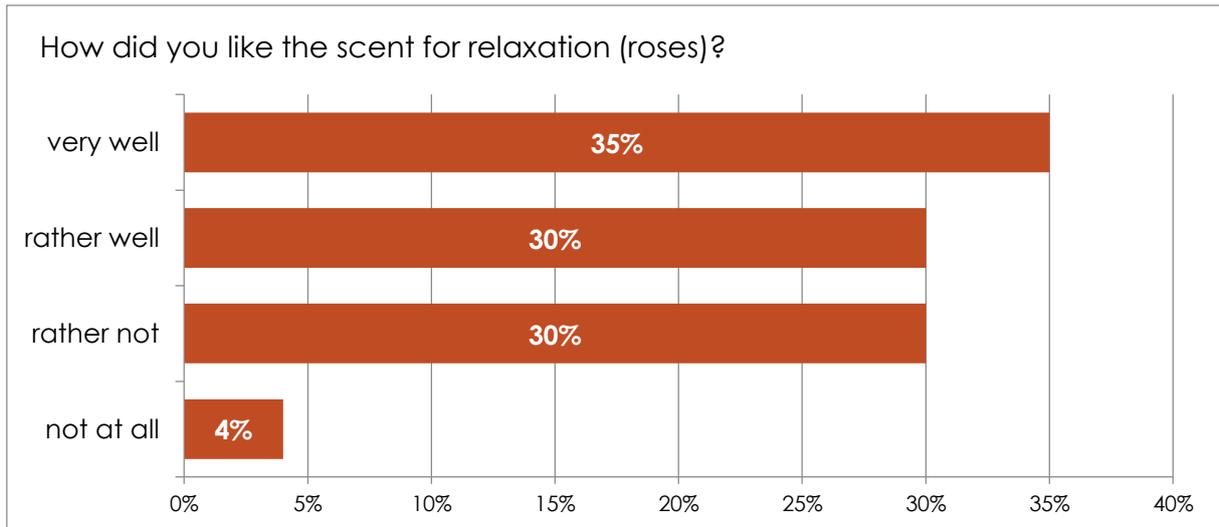


Figure 6: How did you like the aroma for relaxation?

Acceptance of the fragrance module

Positive features of the scent were for over 70% of respondents the fragrance notes and many actually found the citrus scent as activating. The duration of the interventions was appropriate (only for a few was it too long or too short).

Opinions differ greatly whether the rose scent was actually relaxing.

Not quite as positive was the noise of the spraying process. About one third of the Testers found it annoying.

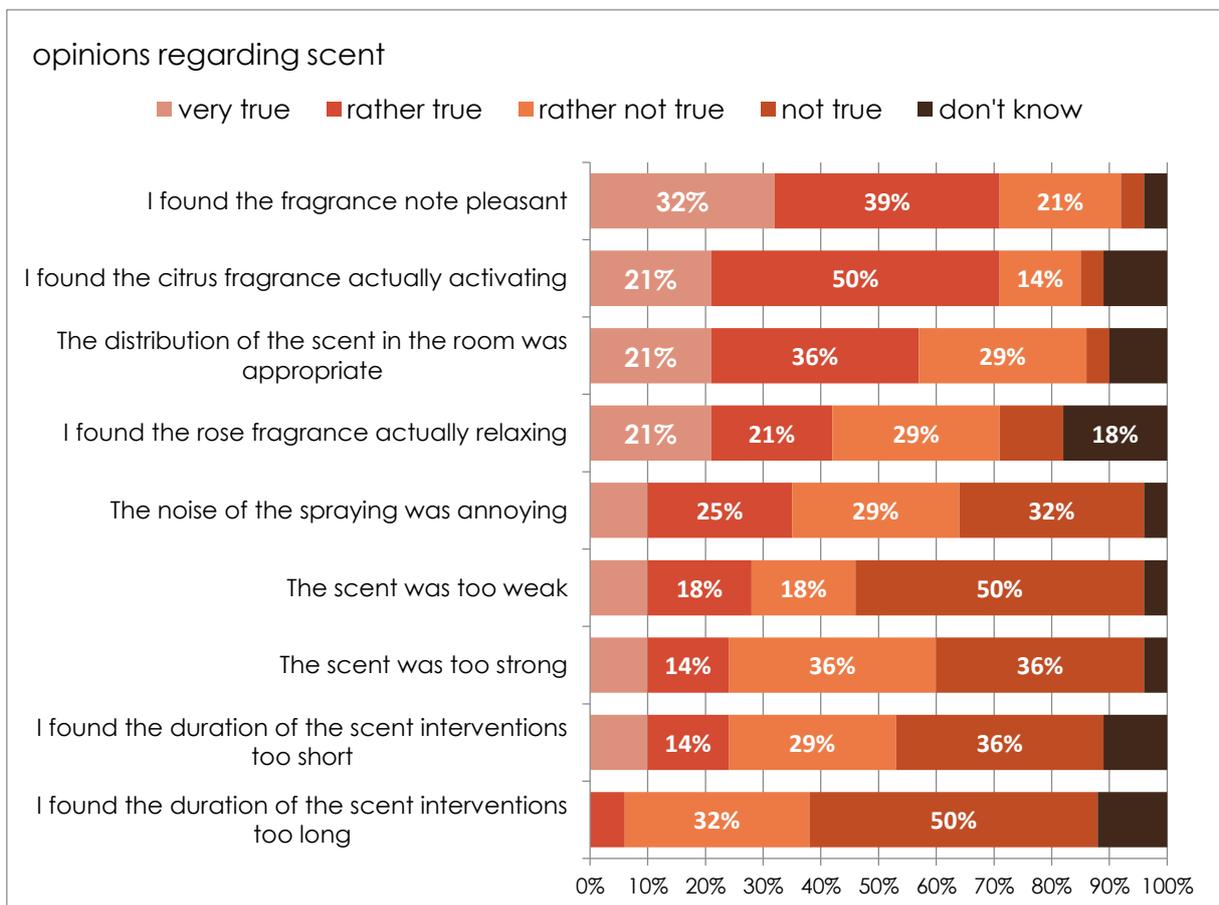


Figure 7: Opinions regarding scent

The persons who tested the GREAT system in the private flats rated almost all aspects more positive. There are hardly any differences (except the brightness of the light) in the institutes.

Open answers to the fragrance

23 people gave an answer to the question „What was particularly good about the scent?“. An excerpt of the answers as follows: „the automatism“, „different fragrances“, „refreshing“, „it was very pleasant“, „citrus scent“, „rose scent“.

What was not liked about the scent is on the other hand: „not all scents fit every person“, „too strong“, „noise of the device“, „the notes are very artificial and intrusive“, „is sprayed very far, small radius of action“ (21 replies).

Note: A few respondents stated that the scent module did not work for a few days and one of the institutes reported that the floor below the module constantly gets slightly wet and that the scent module comes out as much too fragile and even dangerous.

1.4 Sound module

The interventions by sound were perceived by most people.

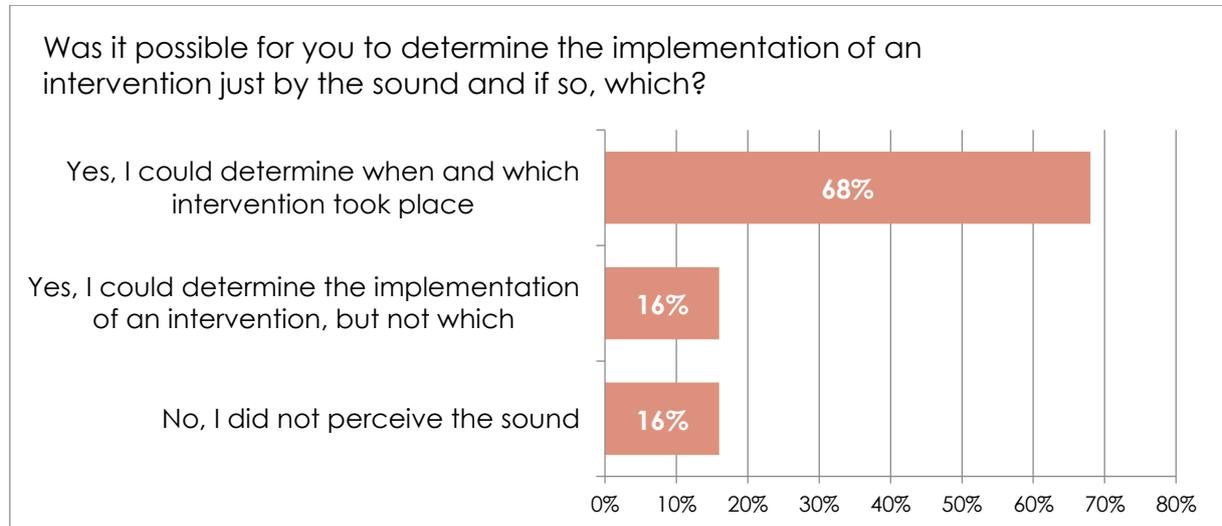


Figure 8: Perception of the sound

The evaluation of the sounds of the two interventions divides the respondents. About half finds the birds' twittering (for activation) and the water noise (for relaxation) good, the other half less good to bad (see Figure 9 and Figure 10).

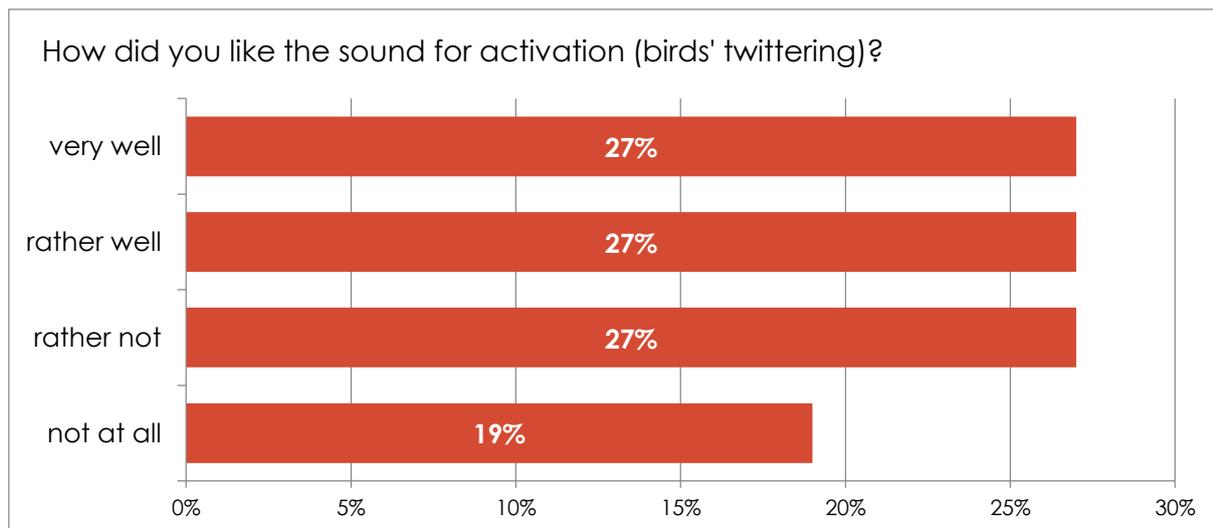


Figure 9: How did you like the sound for activation?

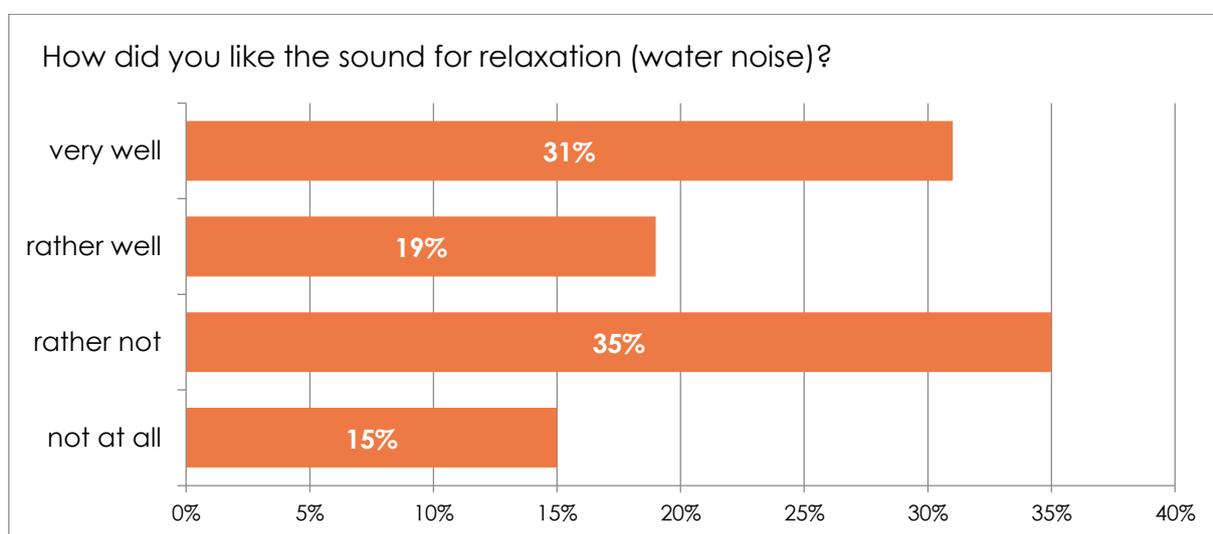


Figure 10: How did you like the sound for relaxation?

Acceptance of the sound module

The most positive feature of the sound module is mainly the pleasant distribution of the sound.

The sound module also exhibits some critical aspects like the default volume is only suitable for about half of the participants. More than a third of the participants felt the sounds as disturbing and/or too loud.

The water noise is considered by almost half of the participants as not relaxing.

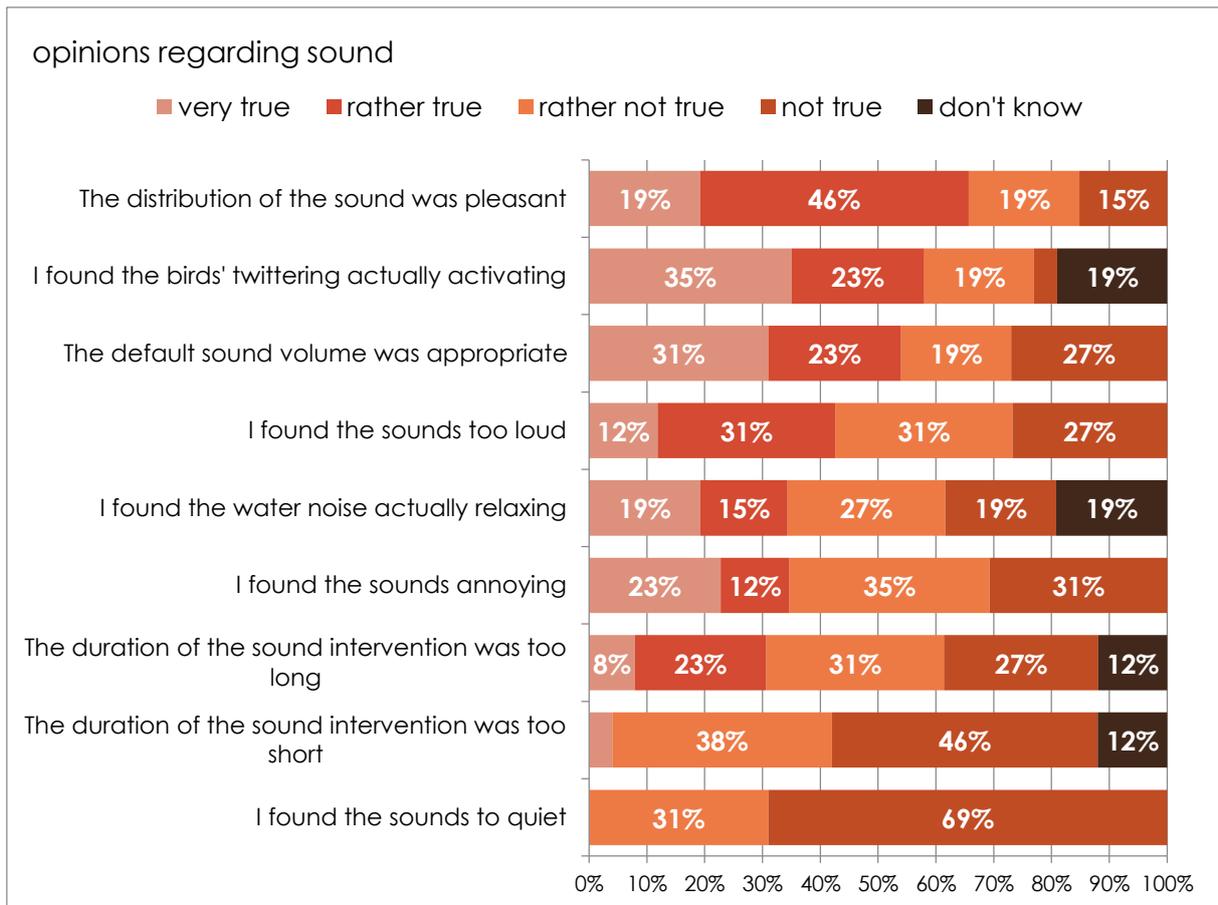


Figure 11: Opinions regarding sound

Open answers to the sound

13 people answered the question „What did you like most regarding the sound?“. Excerpts from the answers are: „that it was not monotonous“, „birdsong cheers up, works equally as relaxing“, „well modelled on nature“, „waves combined with inhaling and exhaling are very relaxing for me“.

On the other hand what was not liked regarding the sounds were: „the water noise was too intense and too strong“, „the chirping of the birds was not suitable for the winter season“, „any sound just makes me nervous“, „not individually adjustable“ (17 replies).

1.5 Bracelet

Three people from the Altersheim Stiftung Griesfeld tried out the bracelet „Biovation“. The feedback was consistently positive. The device is comfortable to wear, the size of the device does not bother and the weight is low. The body worn components of the device could be easily adapted.

1.6 Ease of use acceptance of the system

When evaluating the system as a whole, the most positive aspects were that the majority of the participants felt safe and comfortable using this technology and that for most this technology is easily applicable and not connected with effort.

70% of the people liked the design of the lamp, about 54% also liked the design of the sound module. Not so positive rated, however, was the design of the fragrance module.

For more than 40% of the participants the GREAT system works „rather not“ or „not reliably“. This opinion has certainly been influenced by a number of difficulties encountered during the functional testing.

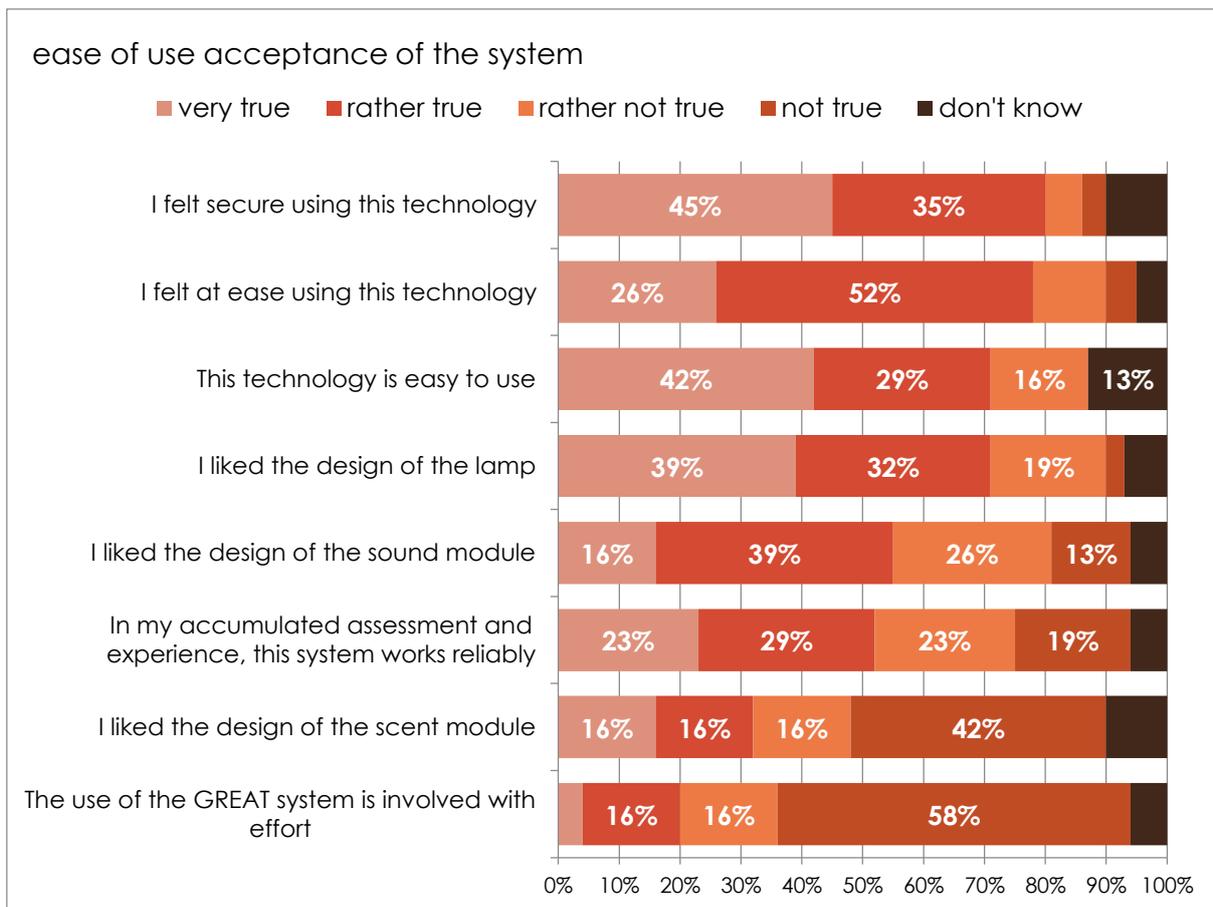


Figure 12: Opinions regarding scent

Difficulties encountered while testing the system

The participants could also report if there occurred any difficulties in testing the system. Most of the feedback relates to the light. Here are excerpts of the answers: „lamp could not be turned off“, „lamp could not be adjusted like desired“, „the lamp has been blocked a few times, only by switching off and on again. At first it turned off after a short time and you had to constantly grab the tablet to turn it back on“, „lamp could not be switched off“, „the lamp definitely needs a manual control.

Furthermore, the times for the switch on points or activation and relaxation need to be adjustable“.

Only one comment has been added regarding the sound, it refers to the default volume that was a bit too loud in the beginning.

Regarding the scent, a few people complained about the scent dispenser not (always) working.

There were the following comments on the system as a whole: „The individual modules partially don't react or very delayed after input on the app“ and „range of controller too low, no suitable place found in flat“.

Further comments or suggestions for improvement

Some people also have possible suggestions for improvement that relate on: „automatic control must be improved, dimming circuit in addition“, „lamp should be more stable“, „manual switch for lamp, time for lamp must be adjustable, only one switch for intervention, more user-friendly operation necessary“, „fragrance and sound should be selectable from a palette“ (specified 3 times),“ restrict sound on only audible frequencies“.

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