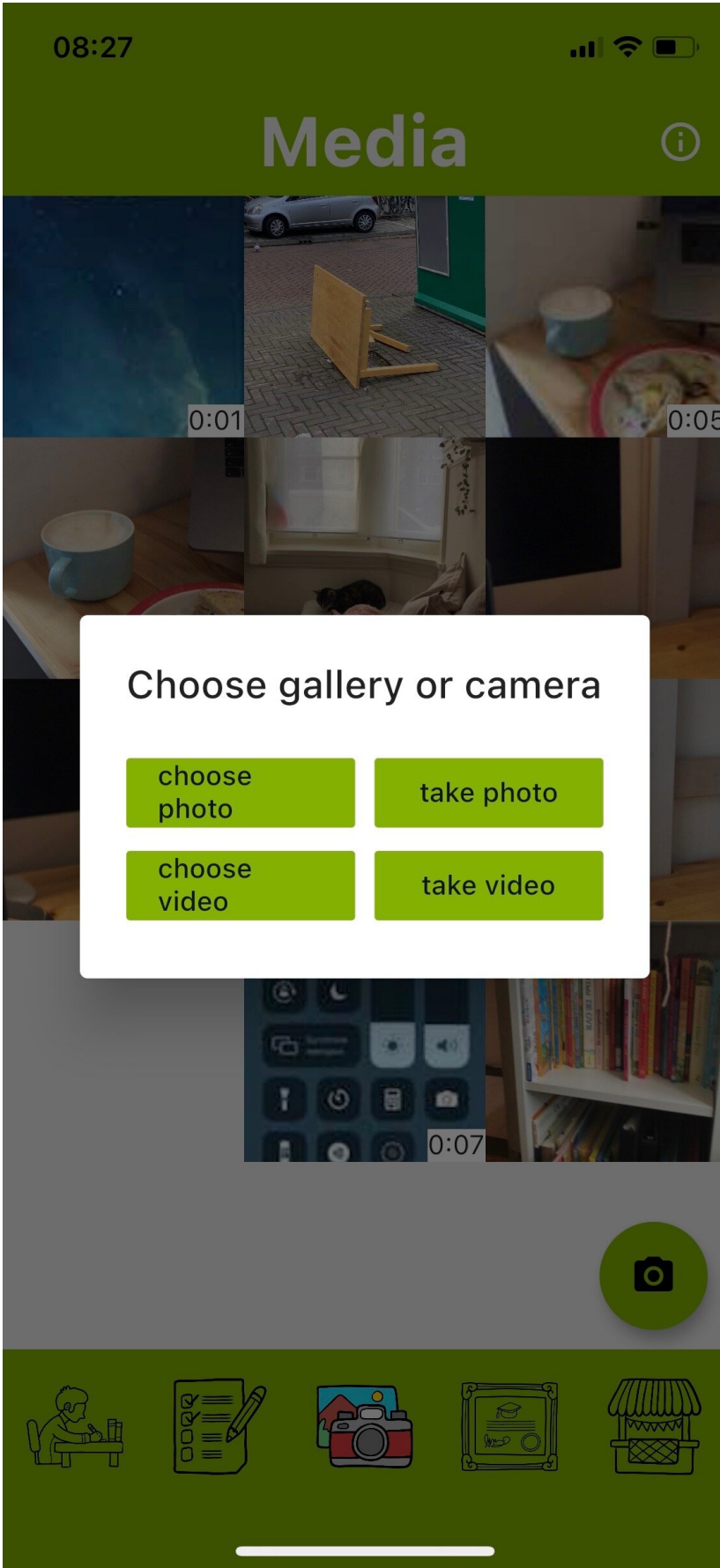


# **An app to help children overcome anxiety**

January 17 2022

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Credit: Leiden University

Anke Klein and her team have devised a fun and useful app to help anxious children. In the app, children can upload a video of themselves showing, for example, something that went well for them and share their success with parents, granny or grandad. Developmental psychologist Klein talks about the path to success with the app; the test phase has started, open source is on the agenda.

"You have an idea," Anke Klein explains. "You want to provide better treatment support for [children](#) who are suffering from anxiety, and most of all help them by getting them to do some practical exercises in a much more fun and effective way by using an app. Some apps are useful, others are more fun, but we want to combine the two. Researchers and literature are good places to look for effective interventions. But how can we make an app so attractive and usable that children, parents and the therapist involved also start using the app? That brings us to our third component: user friendly. It has to be fun with images and games, but also simple and easy to use with big buttons for the children, clear explanations for parents and a well-organized dashboard for therapists."

## **Individually tailored exercises and rewards**

"The therapist is important as the person with final responsibility, so you want to give them tools for the treatment process. Then you also develop a complete system for therapists to track a child in the app. They think up the exercises together that the therapist types into his or her own dashboard and then transfers to the app. The children download the app themselves on their mobile. The app has three levels, both for fun and

because the science tells us that it is important for children to be able to make choices themselves. The rewards are also personal. Children save for a reward by earning points with exercises and they make their own film of their successes."

08:27



# Goals



Collect 3 medals  
1 / 3



Collect 5 medals to unlock  
exercise 4 to 6  
1 / 5



Take 5 photos  
1 / 5



Earn 50 points  
7 / 50



Collect 10 medals to unlock  
exercise 7 to 9  
1 / 10



Watch 10 photos  
1 / 10



Credit: Leiden University




## End users

"It sounds so easy, to just develop an app. But in practice it's a lot more difficult, especially when there are several different types of end users. On the one hand you have to work with the [software engineers](#) and on the other with researchers, children, parents and therapists. All these end users really need you to develop an effective, fun and user-friendly product. And then there's the technical side of things, because you want the app to work on the children's mobiles. At the start, it didn't work on older operating systems: and that was just for starters! It takes a lot of time and it's all too easy to underestimate just how much time it takes. That's something you don't really see when the finished product looks good and everything is working properly."




## Panels


During the process, Klein spoke regularly with children and parents. Together with research assistant (AIO) Annelieke Hagen, she also got children to try out the app at school, at home and in a clinical setting. They learned a lot from these panels, such as the need for a maximum amount of 25 euros for small rewards focused on attention; for example, choosing what food to eat or a trip to the cinema. Earning rewards in the app itself is a future step. Klein: "Winning a game like Mario really is different from a reward for a success in everyday life. The children in the panel agreed with that." Klein is the intermediary between the different panels, including the development team who show her the mock-ups for each phase.





08:30   


# Exercises

1. Spider pictures  
Looking at a spider (small) picture   

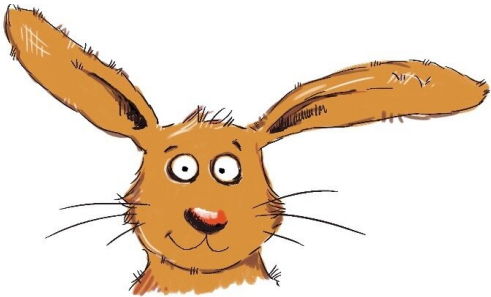
2. Spider video  
Wa 






3. Lo 

4. Try 

5. Being in a room with a spider  
Stay in a room with a spider 

Well done! You completed goal  
Earn a shiny medal and earned 2 points.





Credit: Leiden University

## **Test Phase**

"The developers have built the app flexibly so that it can be tailor made for different types of anxiety, for example. That's why I think it's important to work together with other researchers to save them having to reinvent the wheel. The app will also be [open source](#); the rights issues are complex and we're still discussing these with the legal department. We're now ready for the "randomized control" phase, where children test whether the app is as effective as we want it to be. Half of the children use the app, and the other half don't. As you can imagine, the app is a lot more fun."

## **Still some way to go**

"If you're very proud of something, you want to see how you can broaden its use; for the physio or slimming coach, or for planning your homework and things you don't enjoy doing. All children have to learn how to overcome things in their life they don't feel comfortable with. This is a training program that you can use in different contexts, including in remedial teaching. As a researcher, you always hope that all the time you have put into something can be applied as broadly as possible. A teacher can put a four-week set of exercises in the app, for example, for all the children in the class. What you're really aiming for is to make children's lives easier."

Provided by Leiden University

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