



Maths in
Health

“Thought Viruses” a Mental Self-Help App

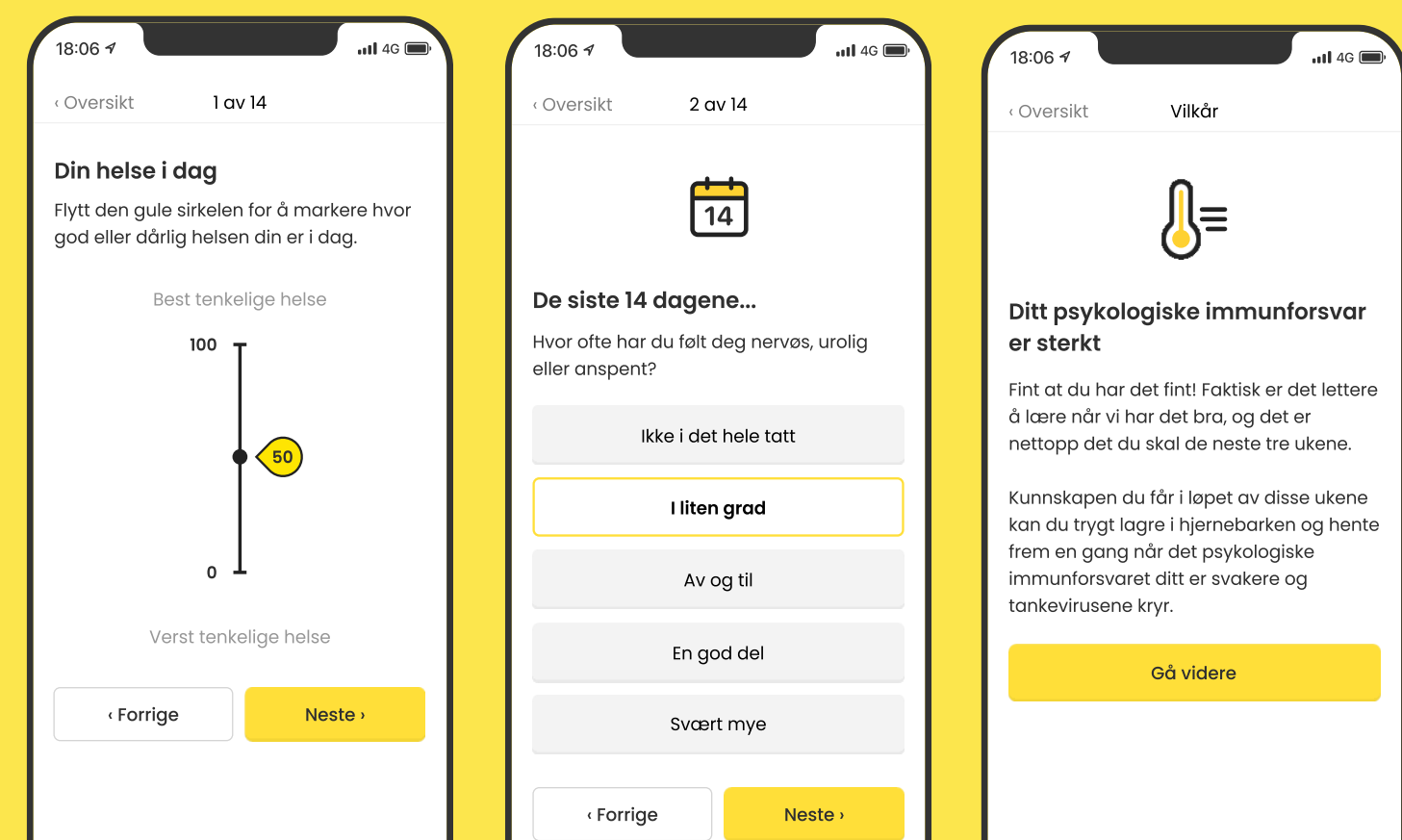
MT15

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Baseline test (PRO)

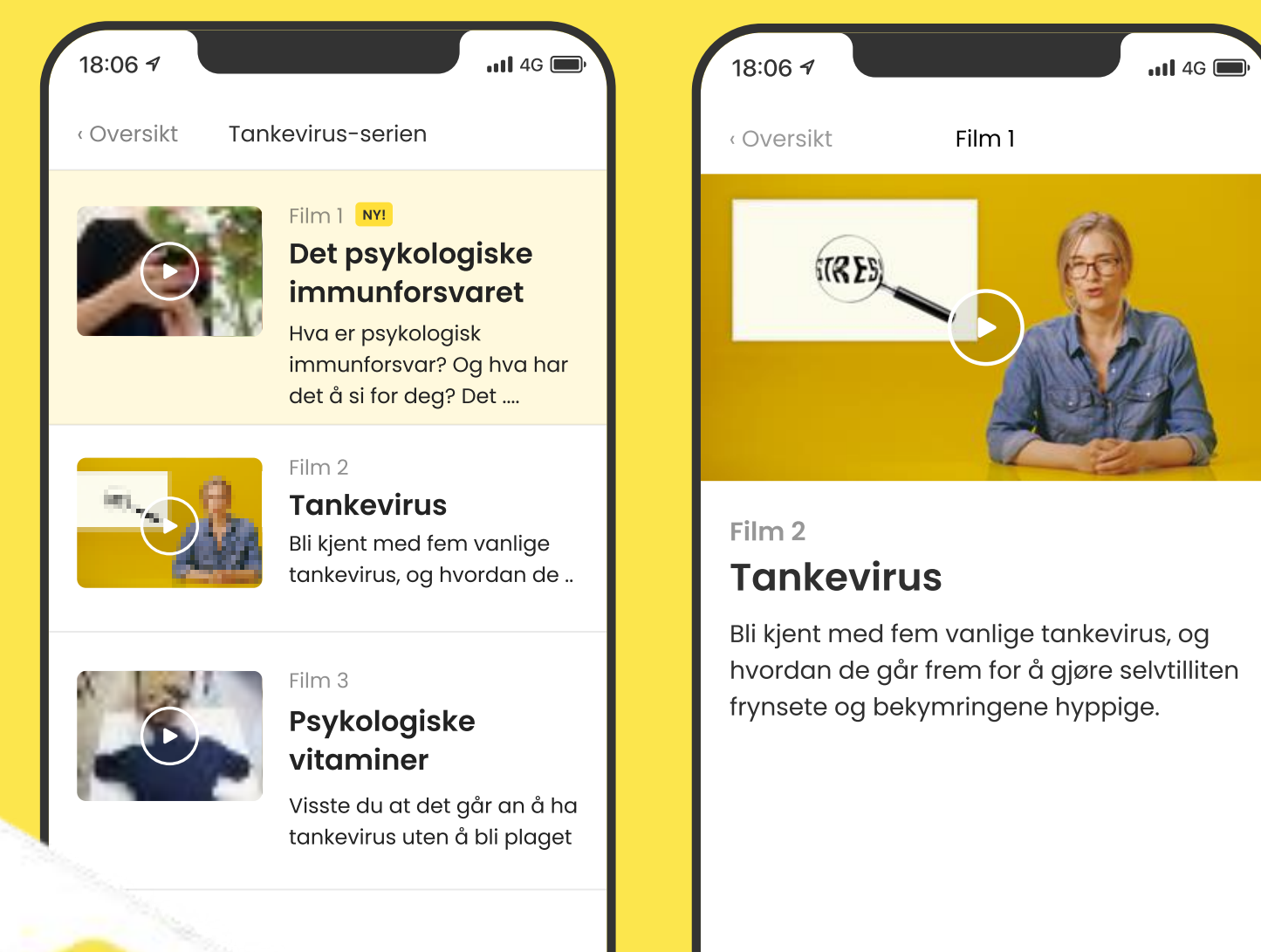
General health VAS, PHQ-4, SSS-8, gender and age questions. Show a self-reported anxiety and depression.



TANKE VIRUS

Introduction

Three 10-minute videos introducing key concepts and based on cognitive behavioral therapy (CBT)



Anonymous data

Push notifications
improve adherence

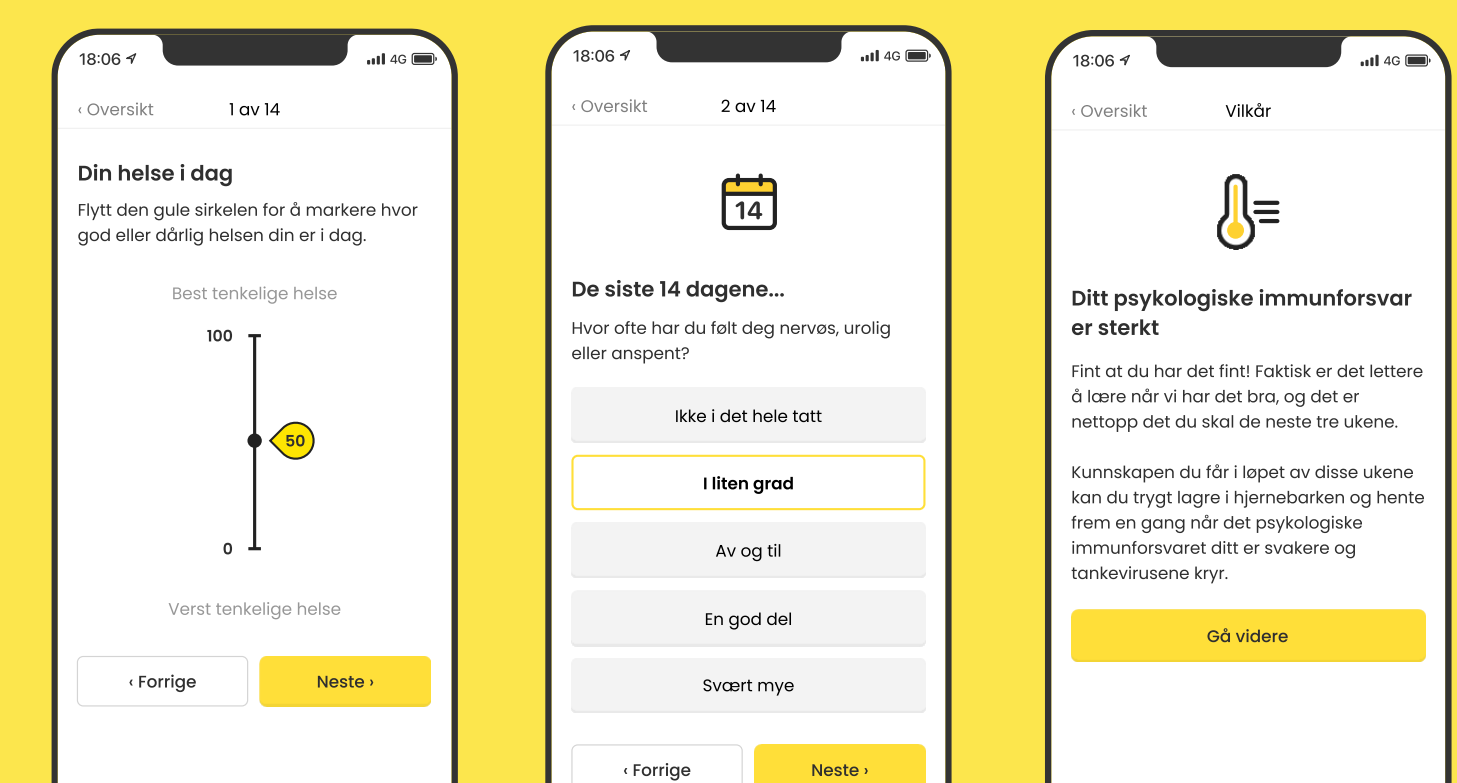
Free download

It does not
require login

After intervention and Long term tests

Re-evaluate and show a self-reported were compared before and after use.

One **90 days** after the last measure and another one after **180 days**.

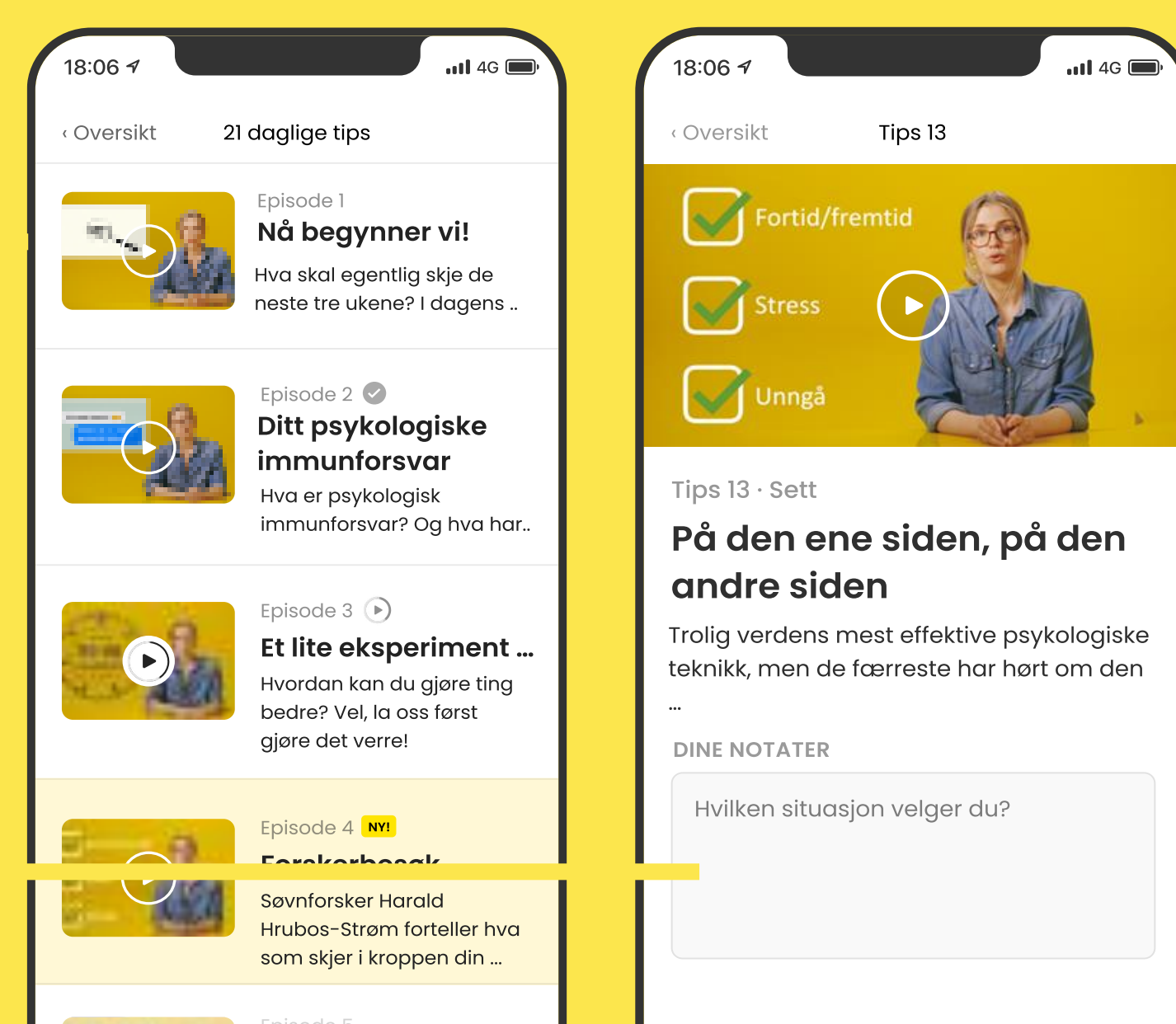


Replay videos

Video notes section

Intervention

A new video will be available each day (20 days) in which tips and task are given to manage negative thoughts.



Background and objectives

The thought virus is a concept in which psychological terms are treated using well-known terms (such as viruses and vitamins) that improve understanding and reach the patient more. Applying this to an app allows the patient to self-evaluate and make an intervention. The objective was to develop, deploy and evaluate the health economics of a low-threshold self-help app for mild to moderate anxiety and depression.

Methods

TANKEVIRUS (English: *Thought virus*) App is a self-help app development and distribution are funded by the Norwegian government.

Results

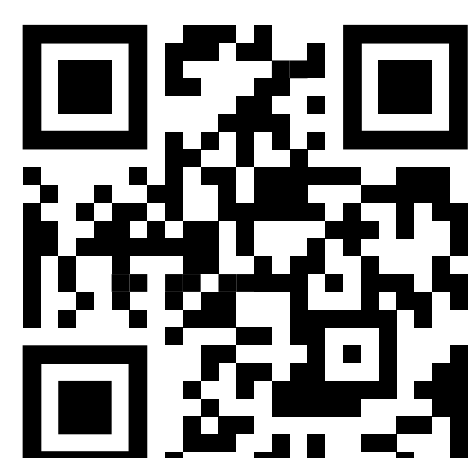
Between Q1 2022 and Q1 2024, 109,000 unique users (77% female) initiated the app; 40,000 completed the main series, and 15,000 completed all videos. Of the completers, 70.1% reported reduced anxiety and depression. Mapping PHQ-4 scores to EQ-5D utilities, the average QALY gain was 0.0095 per completer limited to the 20 days of the program. At a willingness to pay threshold of 500K NOK/QALY, the intervention is cost-effective up to NOK 4,700 (400 Euros) per completer. Including improvements up to 6 months, the average QALY gain was 0.068 per completer, with cost-effectiveness up to 34K NOK (2,800 Euros) per completer.

Conclusions

The TANKEVIRUS App is widely used, with 2.1% of Norway's population engaging in two years. It is associated with reduced anxiety and depression and is cost-effective at 400 to 2,800 Euros per complete user.

References

Hanne H. Brorson. Tankevirus. Gyldendal (2012).



www.tankevirus.no

Brorson&Sande AS

www.mathsinhealth.com

