THOMAS MORE UNIVERSITY OF APPLIED SCIENCES

Smartphone-based virtual reality for relaxation

From user preferences to app development

Immersive Mental Health project

Sylvie Bernaerts, Amandine Verstegen, Bert Bonroy, Glen Debard, Romy Sels, Marlon Van Loo, Tom Van Daele

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With support from

VLAIO Flanders State of the Art

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Background

Positive effects on mental health

- (prolonged) exposure therapy
- Distraction and pain management
- Psychoeducation, behavioral activation

Feasible, acceptable and effective for relaxation

- general population
- clinical population
- workplace well-being

Riches et al. (2021, 2022, 2023)

Background

Effective environments

- VR and 360° video
- Nature
- Nature sounds
- Calming music
- Audio guidance based on evidence-based relaxation techniques

Riches et al. (2021, 2022, 2023)

Background

Limited adoption in outside of specialized clinics and university

Multiple barriers

- Limited knowledge
- Language availability
- Costs

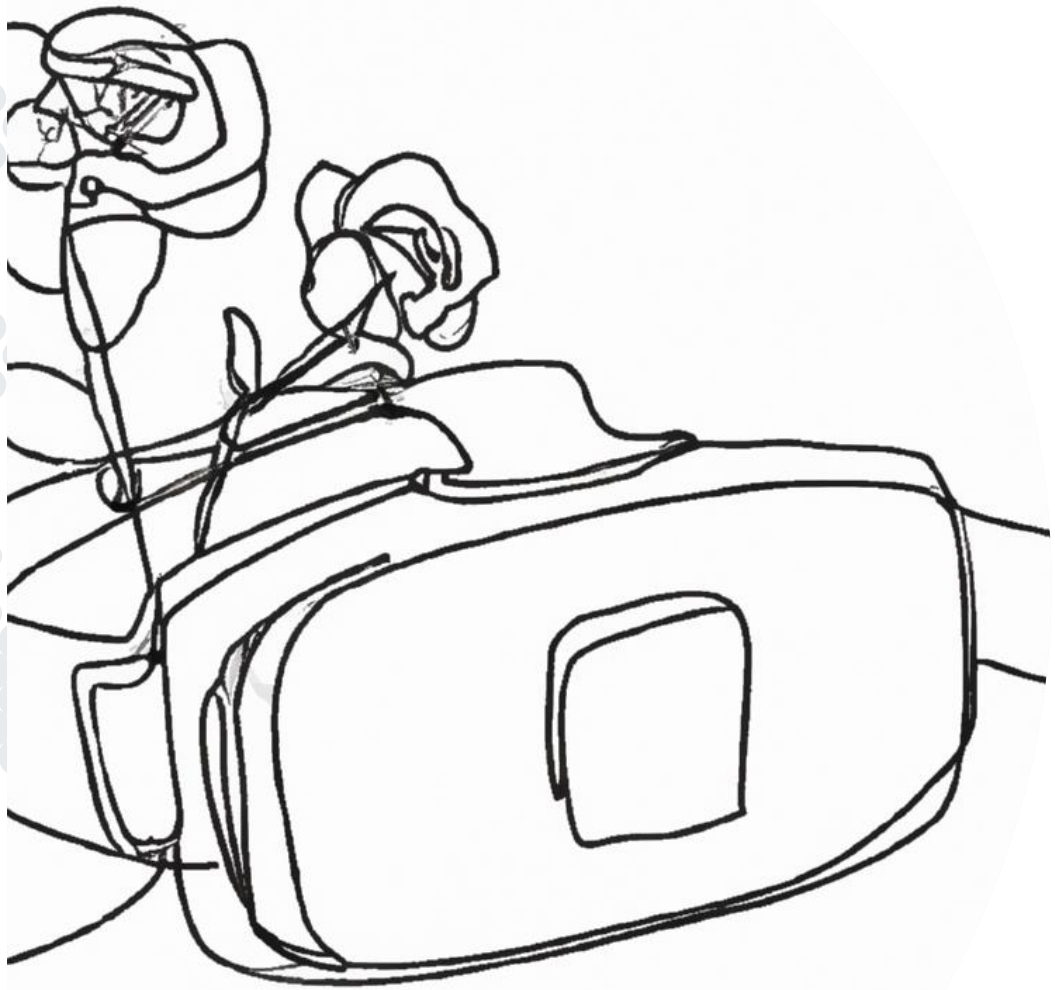
→ **Smartphone VR**

Lindner et al., 2019; Freeman et al., 2017

Objective

Develop a smartphone-based VR application for relaxation

based on user experiences of existing (stand-alone) VR applications

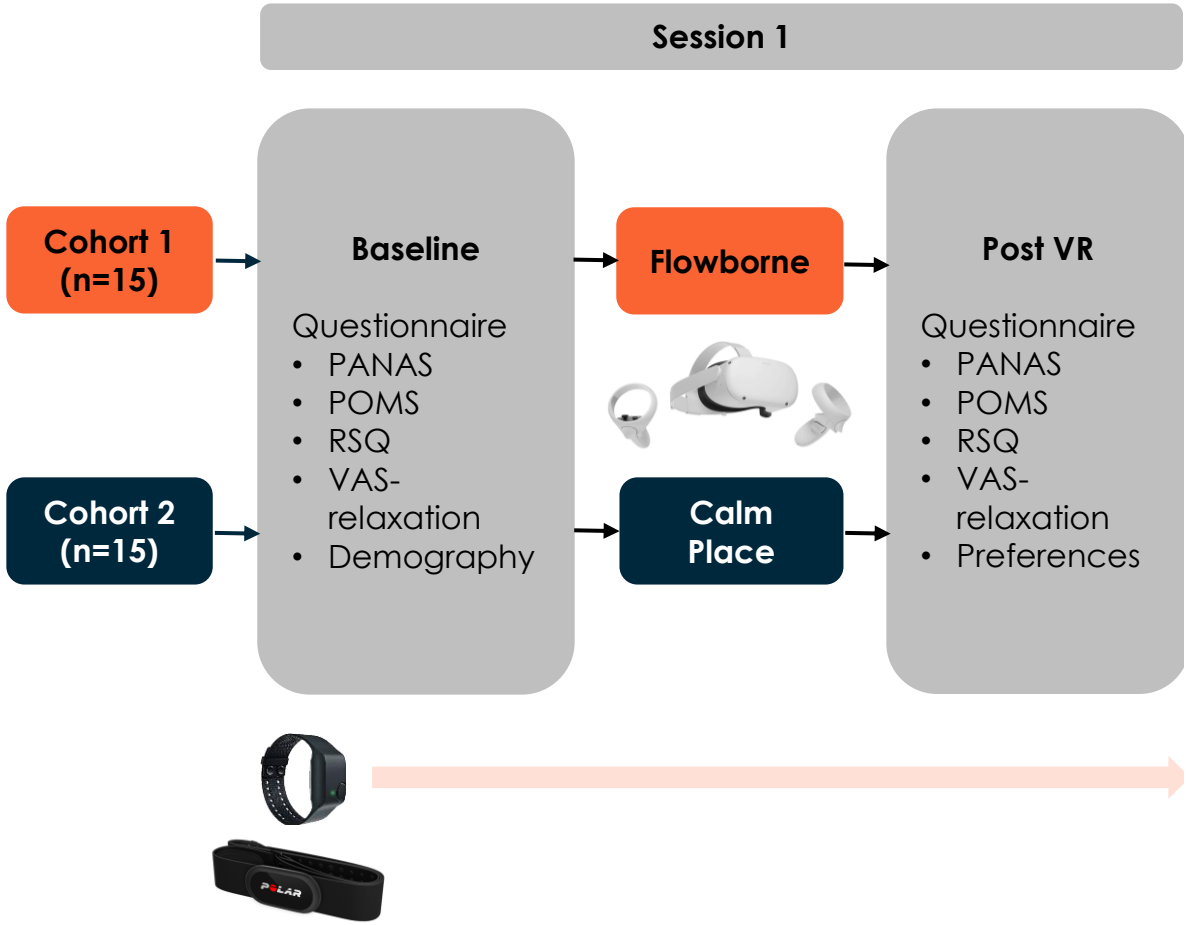


Study design

N = 30 healthy individuals (23 F / 7 M; Age M= 37.17, SD= 8.91)

19/30 No experience with health tech

21/30 at least 1 experience with VR



Stand-alone VR relaxation apps

www.flowborne.com

Guided, diaphragmatic breathing with ‘biofeedback’

Created by psychologists and researchers

Free

Rockstroh et al., 2021

Calm Place, Mimerse

Virtual nature environments (4 options)

With(out) guided relaxation: breathing, PMR, meditation

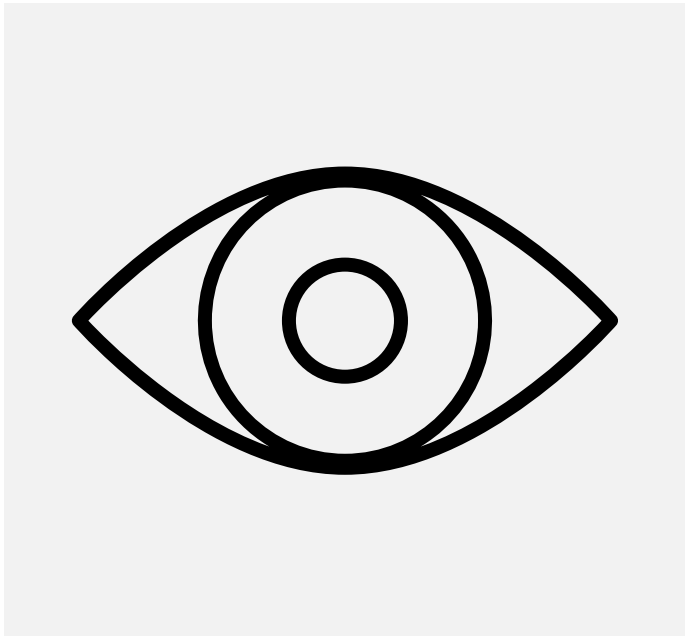
Research app

Lindner et al., 2019;

Results: thematic analysis

Music and sounds

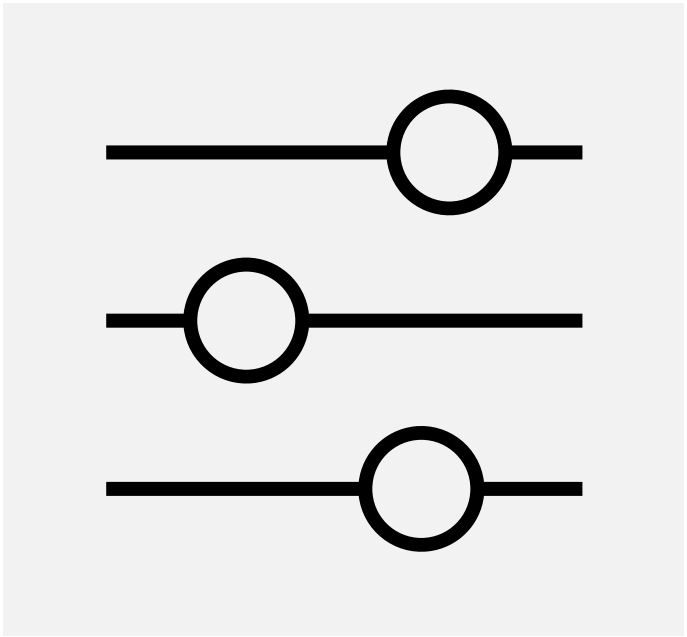
Guidance



Content

Realism

Variation and dynamics



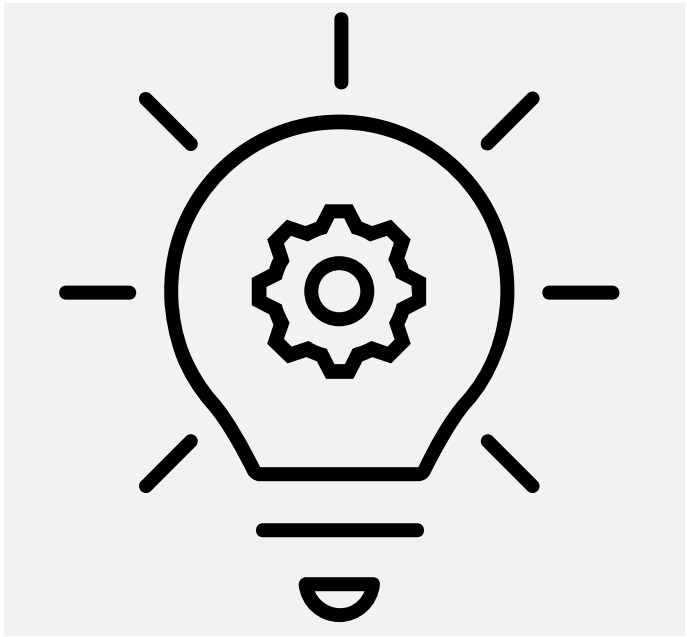
Language

Options

Feedback and instructions

Exercise

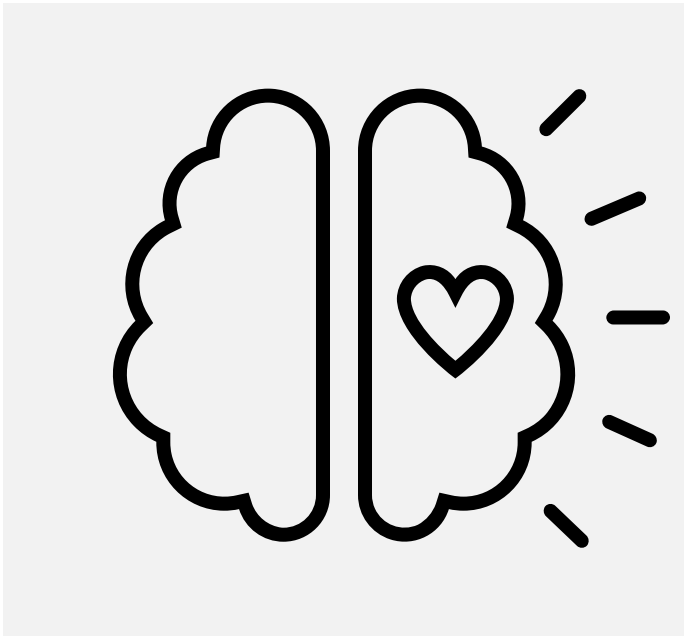
Results: thematic analysis



Technical aspects

Cybersickness

Acceptability and usability



Experiences

Conclusion

Users experienced VR relaxation as pleasant and relaxing

Various opinions on likes and dislikes concerning audio, visuals, features and implementation.

→ **Customization**

Smartphone VR relaxation

3 VR environments
- Beach
- Mountains
- Snow + northern lights

3 types of relaxation
- Mindfulness
- Progressive muscle relaxation
- Exploration of VR nature (introduction)

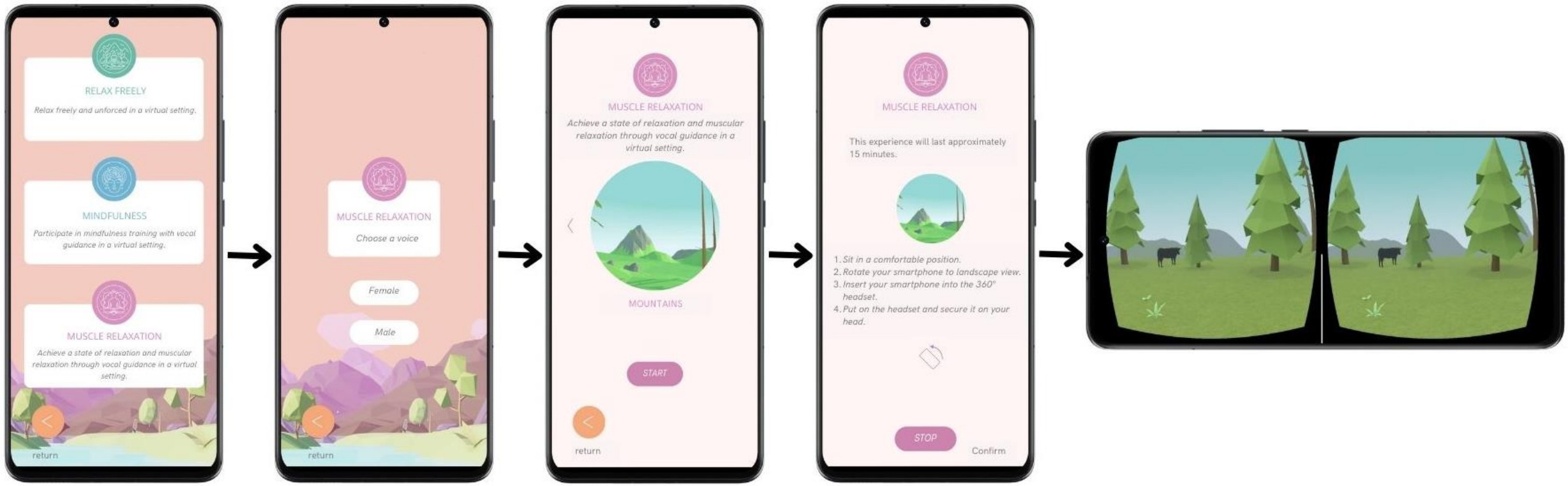
Personalization audio guidance
- Male or female voice

15 min

Dutch (Flemish)

AEROPLANE

Immersive Mental Health app




Focus 3 seconden op de startknop
om de ervaring te beginnen
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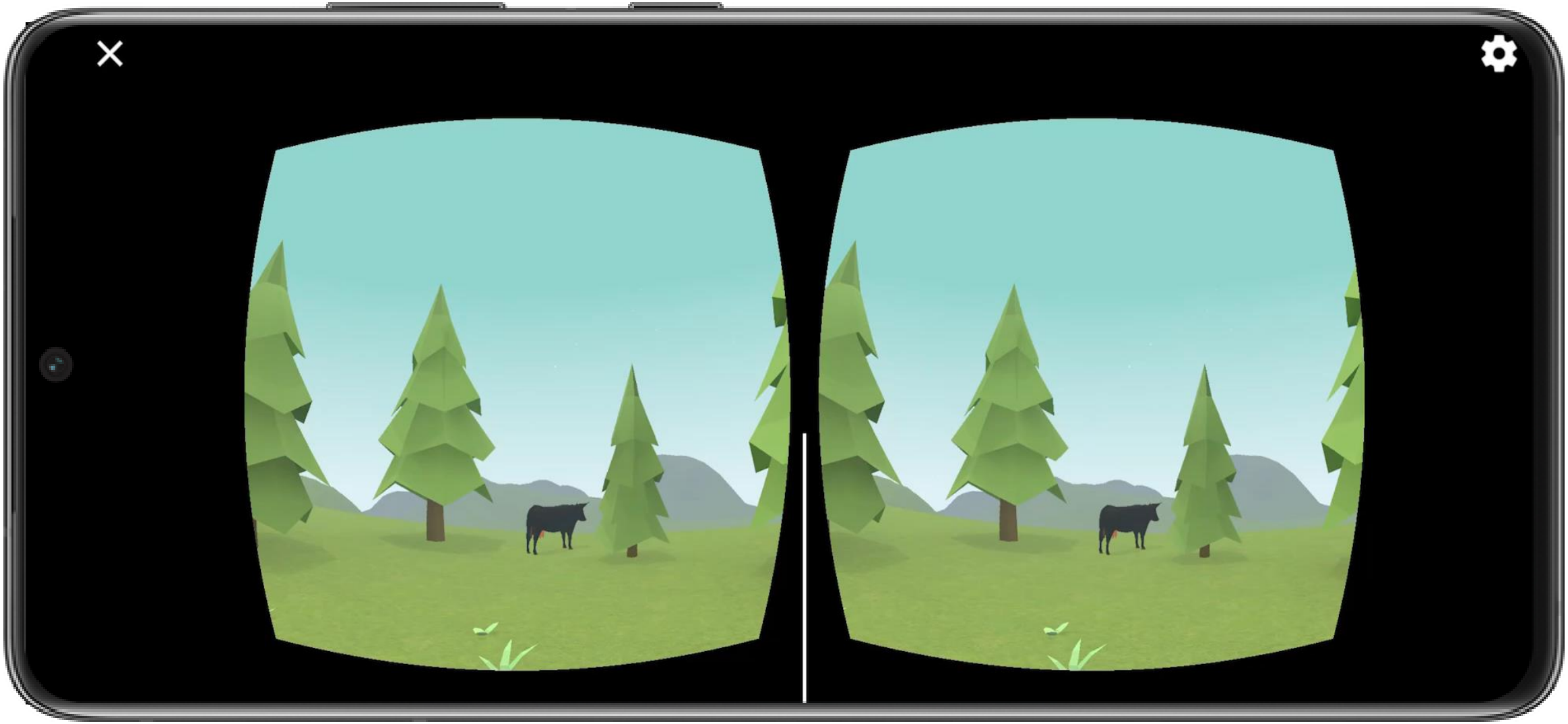

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A (smartphone-based) VR relaxation app needs options to customize audio, visuals and additional features.

End 2024

Sylvie.bernaerts@thomasmore.be

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