'Denk je zèlf!' Developing a Personalised Virtual Coach for Emotional Eaters using Personas

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‘Denk je zèlf!’ mHealth virtual coach

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obesity = chronic
12% obese BMI >30 50% overweight

**comorbidities**
physical - heart failure, diabetes etc.
psychological - depression, low self esteem, psycho-social issues

**causes** – energy intake
• bad eating habits, lack of physical activity
• living in an obesogenic environment
• eating disorders
• genetic, metabolic, medication

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Motivation – societal challenge

Venus von Willendorf
40% of obese or overweight are emotional eaters

- food is comfort, stress relief
- feeling powerless over cravings for food
- over eating - a way to cope with complicated feelings
  - eat in response to negative emotional states
  - have problems with emotion regulation

- weight reduction in short term (dieting)
- weight gain in the long run (yo-yo effect)

diets are not the answer!
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Emotional eating - treatment

- diet management, improving life style
- exercise
- (cognitive) behaviour therapy

Clinicians:
GP, dietician, diabetes nurse, fysiotherapist, mental healthcare, clinic for obesity and eating disorders

Possibilities for emotional eaters are limited:
- they don’t benefit fully from existing treatment programs
- treatments do not focus on problems with emotion regulation
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Related work – Dialectical Behaviour Therapy

focus on emotion regulation!

mindfulness
- awareness and acceptance
- developing a wise mind

emotion regulation
- observing and describing your emotions
- controlling the chain emotion <-> behaviour
- decreasing emotional vulnerability,
- increasing amount of positive emotions

stress tolerance
- dealing with pain
- suffering = pain + no acceptance

dialectical focus
- validation vs problem solving

Dialectical principles

thesis - behaviour change
antithesis - the need for acceptance
synthesis - acceptance and change-based strategies (TREATMENT PACKAGE)

rational or reasonable mind
wise mind
emotional mind
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Related work

Why an app?

• variety of ehealth apps on weight management
• need for ehealth tools
• ehealth is proven effective

• DBT = face-to-face group therapy
• mHealth DBT coach
• App Store, Play Store
Develop a personalised self-management intervention based on Dialectical Behaviour Therapy for young adult emotional eaters (from moderate overweight to obesity).

Objective and approach

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Results

• data gathering: literature review, interviews and questionnaires
• developing personas (leRouge)

user profile / persona: healthcare specifics, demographic info
Internet (technical skills)

conceptual user model: needs, desires, capabilities, limitations etc.

user needs:
• self management apps (strong feelings of shame)
• support at the moment a binge or craving will occur, or right after one has taken place
• both validation and encouragement
Personas

Lisanne:
“*I wish that I was more confident about myself ....*”
Feels insecure about her body / Is not able to sense the difference between hunger, appetite or emotion / Fears to experience what she really feels.

Anita:
“When I am stressed out I start snatching the cookie tin”
Is worried about putting on more weight / Suffers from stress and finds comfort in food / Has a sweet tooth / Hates to be patronized (authorities).
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Behaviour Chain Analysis

vulnerability

problem behavior

links

promoting event

consequences
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User Interface design - prototype

De coach staat voor je klaar.

During the day I am able to eat normally but as soon I'm home at night I start craving for chocolate, cheese, cookies... It looks like I cannot be alone...

5 minutes ago

Hi Lisanne, the greater part of emotional eating occurs at night, mostly because of feelings of loneliness or experiencing stress... But it can also happen due to irregular or restrained eating behavior. Shall we give it a try to investigate this?

2 minutes ago

Bericht

Module 1
Mindfullness

Alle lessen met betrekking tot het behalen van volledige mindfullness.

Selecteer oefening

Module 2
Mindfullness

Alle lessen met betrekking tot het behalen van volledige mindfullness.

Selecteer oefening

Jouw dagboek

Gesprek met virtuele coach

3 oefeningen voltooid

Gesprek met virtuele coach

3 oefeningen voltooid

Gesprek met virtuele coach

3 oefeningen voltooid
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The tech side
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Conclusion and discussion

• Persona’s…
• formative evaluation – users feedback
  - user interface design
  - behaviour chain analysis
• and more Personas…
• content skills modules

future work

• the virtual coach – developing behaviour model and dialectical dialogues
• the virtual coach – emotion recognition

illustration by Bryan Christie
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Thank you for listening.
Please support me with your feedback

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