CAREWEAR: 
THE POTENTIAL OF WEARABLE TECHNOLOGY IN STRESS AND BURNOUT MANAGEMENT

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OUTLINE OF THE PRESENTATION

• mHealth & wearables
  – in health care
  – in mental health care (MHC)
• wearables in MHC
  – potential
  – limitations
• carewear: intervention for stress and burnout
MHEALTH – WEARABLES

“mobile computing, medical sensor, and communications technologies”

Istepanian, Jovanov, & Ehang (2004)
MHEALTH – WEARABLES

- wearables
  - sensors and devices that can be worn on the body
  - aim: to (continuously) collect (physiological) data in a non-invasive and reliable way
MHEALTH – WEARABLES
MHEALTH – WEARABLES

physiological ...

• electrocardiogram
• electro-encephalogram
• heart rate variability
• respiratory rate
• skin conductance

but also

• activity
• temperature
• pictures
WEARABLES IN HEALTH CARE

• supportive for entire care pathway
  - prevention and screening
    • e.g. prevention heart failure
  - diagnosis
  - treatment
    • e.g. registration medication intake
  - recovery
  - chronic care
WEARABLES IN MHC

• relatively unexplored field
  – depression
  – activity
  – stress
    • heart rate variability
    • skin conductance
  – panic disorder
    • heart rate variability
    • respiratory rate
  – binge eating
    • heart rate variability
POTENTIAL WEARABLES IN MHC

GREAT OPPORTUNITY AHEAD
POTENTIAL WEARABLES

- may ameliorate efficiency of professional services
- may address current challenges in business and clinical practice

- measuring complaints more reliable and valid
- additional physiological data
- better overview of treatment effects
- focussed feedback at the right time and place
- addressing waiting lists
- addressing following up a large amount of people
LIMITATIONS WEARABLES
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• technology

1. quality of data dependent on type of wearable
   • large progress in recent years
     e.g. power consumption
LIMITATIONS

1. INCOSE
LIMITATIONS

• technology

2. big data
   • bigger picture
   • intra- and interindividual differences
LIMITATIONS

• technology

3. need for development of software
   • for visualisation as well as analysis of data
   • and for feedback to end user

4. translation of experimental setting to clinical practice
LIMITATIONS

• clinical practice
  insufficient familiarity by professionals

1. technical
  • how to use wearables in a reliable and valid way?
  • flexible use of hardware & software

2. content
  • knowledge of neuropsychology and physiology
  • practical use and interpretation of data
wearables as useful tools in practice

within EAPs
within clinical setting
CAREWEAR

• TEchnology TRAnsfer (TETRA) project
  • funded by Vlaams Agentschap Innoveren en Ondernemen
  • 2015 - 2016: preparation
  • 2016 - 2018: enrolment and valorisation of MHC interventions using wearables

• combines expertise within Thomas More
  • MHC: centre of expertise Psychology, Technology & Society
  • Wellbeing & Technology: MOBILAB
CAREWEAR IN COOPERATION WITH
CAREWEAR: STRESS AND BURNOUT INTERVENTION

• initial screening
  – self-report through questionnaires
  – registration (physiological) parameters
  – heart rate variability, skin conductance and activity

• wearable
  – additional source of information
  – but also: draws more attention to problems by visualisation

• optional continuity of care for employers at risk
  – standard care within service organisation
  – broadened by wearables and online platform
CAREWEAR: IMPORTANT CONSIDERATIONS

- privacy
- multimodal measures
- correct use of equipment
CAREWEAR: INTERFACE

Wearable sensor solutions for monitoring health and wellbeing

Login

Username:

Password:

Forget your password

Login

Activity per hour

OS-values over time
THANK YOU FOR YOUR ATTENTION!

• additional partnerships are still very welcome to help us succeed in our Carewear project!

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