Technostress, wearable trackers, and older adults

- Technostress
  - Stress process elicited by demands related to technology use
  - Often studied in the work context
  - Older employees (50+) have been particularly susceptible to technostress
- Wearable trackers
  - Health-oriented trackers (e.g., step count; heart rate monitor) that provide feedback to users
  - Research focuses on technology acceptance and compliance, and health-related outcomes

Source: USA Today

Methodological features among technostress and wearable tracker studies with older participants

- Participants
  - Recruited through online platforms and other electronic communications
- Research design
  - Often rely on cross-sectional survey, particularly the technostress studies
  - Tend to focus on between-person comparisons
- Data collection
  - Utilization of apps to record usage and report perceptions, attitudes, and reactions

Improved research designs

- Utilize intensive, longitudinal diary or e̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶

  - Individuals providing multiple reports/day̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ time

  - Reduce recall bias (as participants report ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ s in situ)

  - Allow researchers to examine both within̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ound personal baseline) and between-person differences̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ ̶ imultaneously

- Typical study design

  - Collect self-reported stress experience multiple times/day

  - Use wearable trackers to assess physiological indicators of stress

  - Create opportunities for better integration of different streams of data on a finer-grained timescale

Experience sampling study on technostress among older adults

- Concerns with the study protocol's heavy reliance on technology
  - May lead to self-selection and premature withdrawal from the research
  - May lead to poor quality of data due to noncompliance to technology-oriented research protocol
- Current research goals
  - To identify factors that may influence older adults' participation in the technostress study with experience sampling design
  - To generate strategies to promote older adults' participation in technology-related research

Method

- 18 older adults participated in 3 focus groups
  - Recruited from a larger sample (N = 37) who were in a technostress study with experience sampling design
- Technostress study involved one-week experience sampling study
  - 4 daily reports of stress using a mobile app
  - Tracking app for smartphone
  - Wearable trackers for physiological responses
  - 3 saliva samples collected on 2 specific days
- Focus group included questions related to technology use during the study period, compliance issues, recommendations, and stress and coping

Results: Overall compliance rate

- 95% of participants completed the daily surveys
  - Average response rate = 85%
- 97% provided useable heart rate data trackers
- All but 1 out of 228 saliva samples did not contain enough saliva to quantify cortisol
- Survey responses showed no clear indication for careless responses

Results: feedback on wearable trackers

Positives

- Informative in-app feedback regarding step counts and sleep quality

Negatives

- Discomfort related to wearing it overnight
- Difficulties related to putting trackers back on after charging

Results: feedback on daily survey apps

Positives

- Automatic time-based reminder was helpful

Negatives

- Survey window (1 hour) was too narrow
  - Missing the window actually caused stress
- App feature was difficult to use
  - For uploading pictures
- Survey question wording and anchors were ambiguous

Results: Strategies to encourage participation

- Multiple forms of reminders to comply with the protocol

- Clarity on app data use and privacy and confidentiality protection

- Better technology to facilitate ease of reporting

Discussion

- Careful recruitment protocol and information session can facilitate initial interest in the research

- Design of technology used for research to facilitate ease of participation

- Limitations
  - Only conducted focus groups with participants who successfully completed the study
  - All participants were recruited from a college campus