Center for Digital Health Interventions
CSS Health Lab | Health IS Lab

ETHzürich

Institute of Technology Management
University of St.Gallen

CSS Insurance

Ally: A Smartphone-based Physical Activity Intervention

Florian Künzler [1], Jan-Niklas Kramer [2], Varun Mishra [3], Bastien Presset [4], Shwana N. Smith [5], David Kotz [3], Urte Scholz [6], Elgar Fleisch [1,2] & Tobias Kowatsch [2]

[1] ETH Zurich, [2] University of St.Gallen, [3] Dartmouth College, [4] University of Lausanne, [5] University of Michigan, [6] University of Zurich

1. Background

No behavior has an impact on human health as great as **physical activity** (PA). We therefore developed Ally, a **smartphone-based 6-week PA intervention**. Ally seeks to exploit the ubiquity and sensing capabilities of mobile phones to adapt the provision of PA interventions to the context of the user.
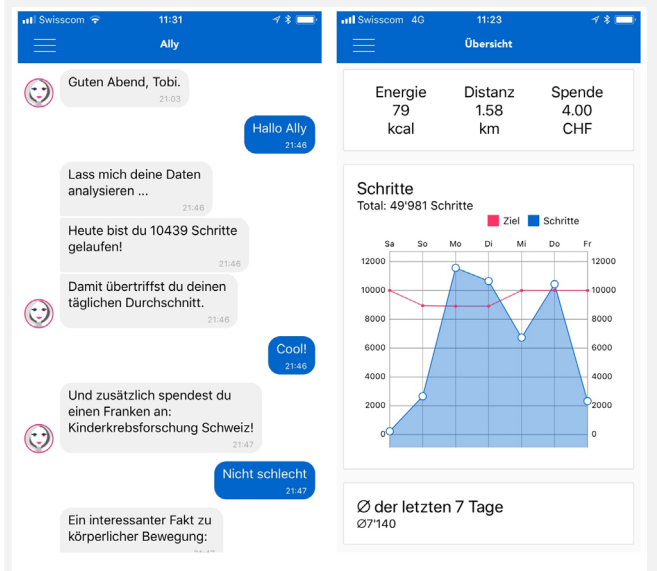
2. Research Questions

(1) What are **effective components** of Ally, a mHealth physical activity intervention?
(2) Can mobile sensor data **predict opportune moments** for interventions?

3. JITAI Framework

State of vulnerability and opportunity → JITAI
State of receptivity → JITAI
JITAI → Proximal Outcome → Distal Outcome

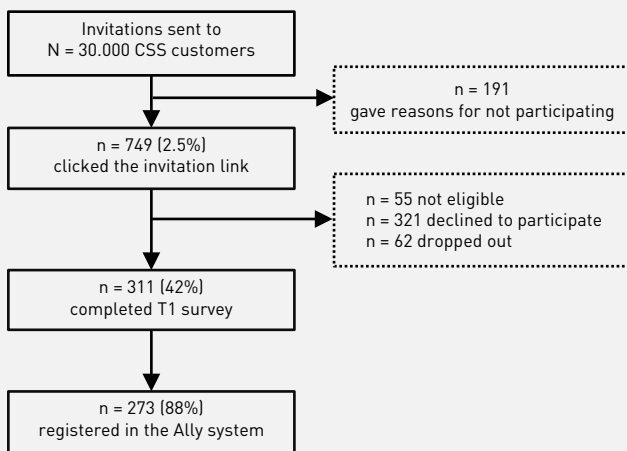JITAI stands for Just-in-time adaptive Interventions (NAH16)

4. Ally Field Study

We conduct a longitudinal factorial experiment to test intervention components and collect a variety of sensor data.

5. Recruitment Process

Invitations sent to N = 30.000 CSS customers
↓
n = 749 (2.5%) clicked the invitation link → n = 191 gave reasons for not participating
↓
→ n = 55 not eligible
n = 321 declined to participate
n = 62 dropped out
n = 311 (42%) completed T1 survey
↓
n = 273 (88%) registered in the Ally system

References

Florian Künzler, Jan-Niklas Kramer & Tobias Kowatsch (2017) Efficacy of mobile context-aware notification management systems: A systematic literature review and meta-analysis", 2017 IEEE 13th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 131–138, doi:10.1109/WiMOB.2017.8115839

Nahum-Shani, I., S. N. Smith, B. J. Spring, L. M. Collins, K. Witkiewitz, A. Tewari & S. A. Murphy (2016). "Just-in-Time Adaptive Interventions (JITAIs) in Mobile Health: Key Components and Design Principles for Ongoing Health Behavior Support." Annals of Behavioral Medicine, ePrint ahead doi:10.1007/s12160-016-9830-8.

Partner: Dartmouth | Center for Technology and Behavioral Health – Innovate · Evaluate · Disseminate | UNIVERSITY OF MICHIGAN | UNIL | Université de Lausanne | University of Zurich UZH