Supporting Caring among Intergenerational Family Members through Family Fitness Tracking

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The challenges of sharing health information among family members

Can self-tracking tools help? If so, how?

The challenges of sharing health information among family members

If self-tracking tools can help? How?

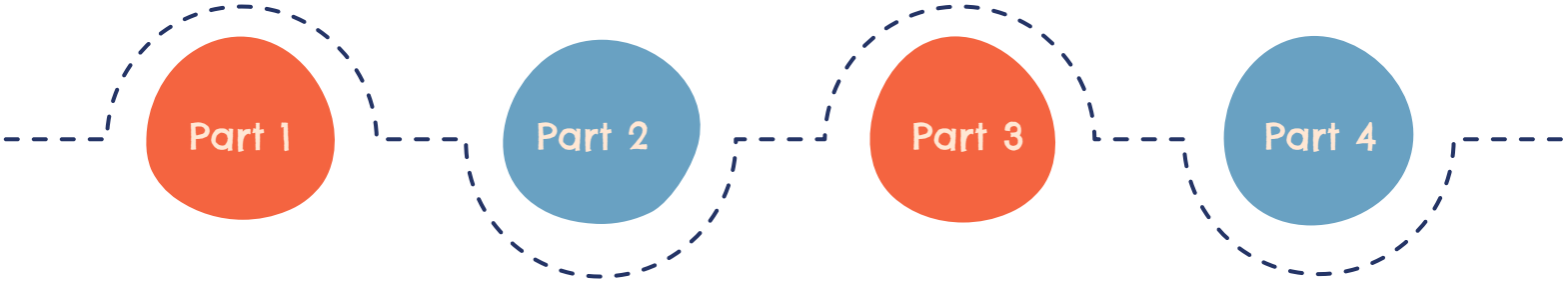
An overview

Introduction

- Motivation
- Background

Results

- Awareness of Each Other's Health
- How Care is Expressed
- Challenges Family Members Face



Methods

- Instruments
- Participants
- Study design
- Analysis methods

Discussion

- Limitations and future work
- Questions

1. Introduction

Related studies

Tracking in a Family Context

Personal informatics literature examines the idea of tracking for self-understanding (Li et al., 2010). While most personal informatics research has focused on self-tracking, research is increasingly being conducted in a family context.

- Gui et al. (2017) studied WeRun to understand how people shared fitness data in pre-existing social networks and found that found sharing fitness data with pre-existing social networks, such as WeRun, has the potential to promote social interaction.
- Lukoff et al. (2018) studied mobile food journaling to facilitate family support for healthy eating, and found that journaling non-shared experiences could extend awareness of family members' behavior and condition.

Ian Li, Anind Dey, and Jodi Forlizzi. 2010. A stage-based model of personal informatics systems. In Conference on Human Factors in Computing Systems.

Xinning Gui, Yu Chen, Clara Caldeira, Dan Xiao, and Yunan Chen. 2017. When fitness meets social networks: Investigating fitness tracking and social practices on WeRun. In Conference on Human Factors in Computing Systems.

Kai Lukoff, Taoxi Li, Yuan Zhuang, and Brian Y. Lim. 2018. TableChat: Mobile food journaling to facilitate family support for healthy eating. Proc. ACM Human-Computer Interact. (2018).

2. Methods

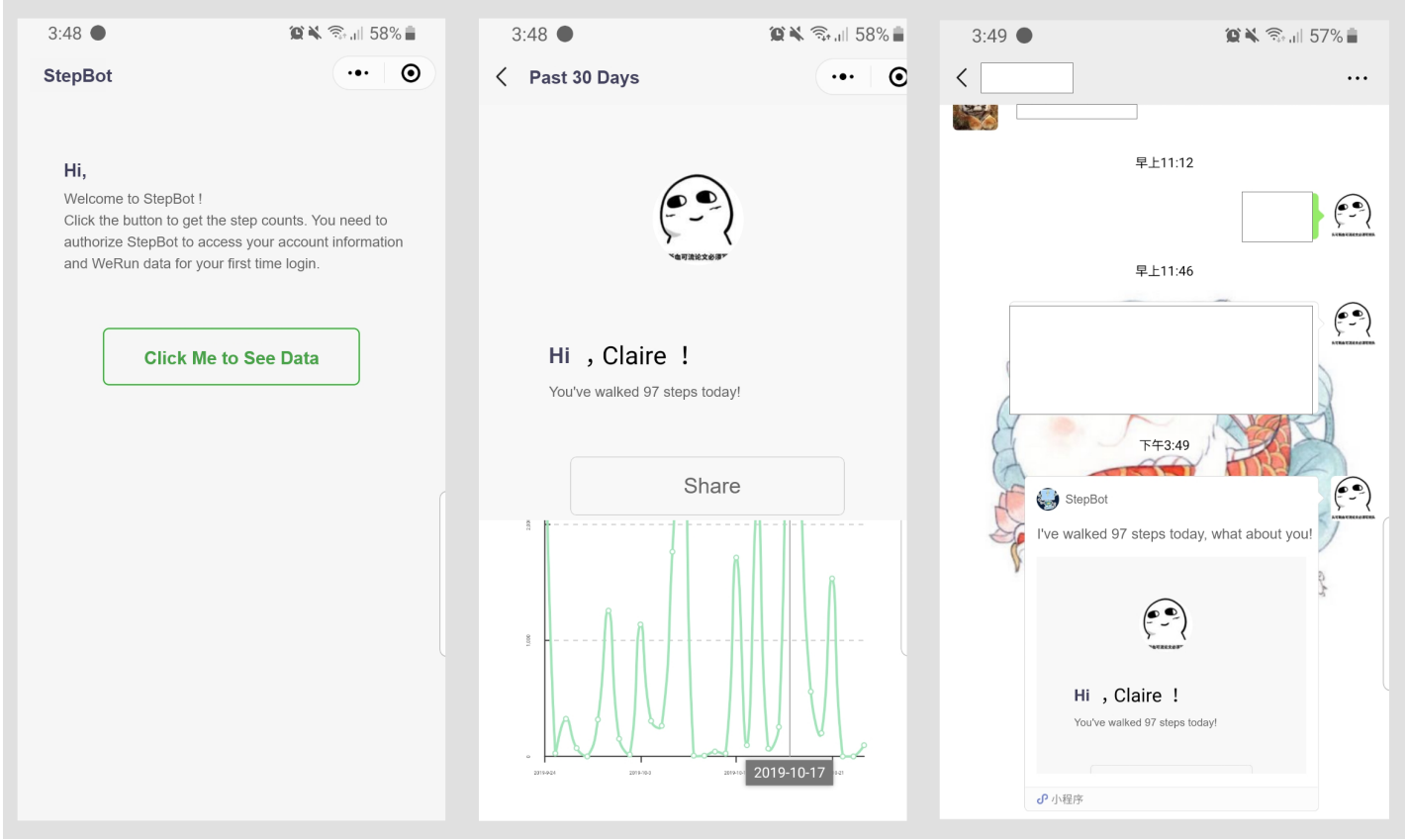
Instruments

WeRun is embedded in WeChat

2. Methods

Instruments

Mini-program: StepBot



2. Methods

Participants

2. Methods

Participants

8 family units

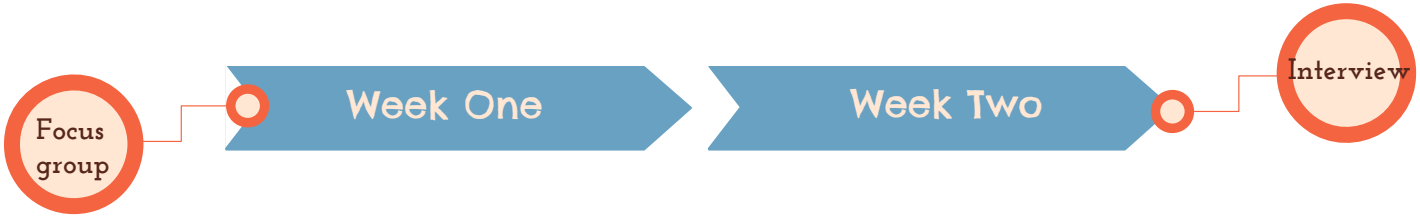
11 older adults,
12 middle-aged,
and 4 young participants

2. Methods

Study design

2. Methods

Study design



2. Methods

Data analysis

Interview

Chatlog

3. Findings

Qualitative findings

1. Awareness of Each Other's Health

- Daily steps provide a window into family members' health and well-being status
- Care through Data

2. How Care is Expressed

3. Challenges Family Members Face

1. Awareness of Each Other's Health

- Daily steps provide a window into family members' health and well-being status
- Care through Data

B2: "I've taken 17191 steps today, and 26400 steps yesterday."
B3: "Why are you walking so much?"
B2: "Yes, one lap of the playground is 400 meters. I walked on the outside runway, plus the distance went [to the playground] and back [home]. I walked for over an hour."
B3: "But don't walk too much. This is only a test [family tracking study]. Healthy comes first."
[Several days later]
B2: "11131 steps today." [B2 normally walk 15000-20000 steps per day]
B3: "Mom, why did your step counts were low today?"
B2: "I slept over this morning, and it was too cold to go out."
B3: "That is it. Don't go out for exercise in the cold morning."

1. Awareness of Each Other's Health

2. How Care is Expressed

- Conversations Triggered by the Shared Fitness Data
- In-Person Care Prompted by Fitness Sharing

3. Challenges Family Members Face

3. Findings

Qualitative findings

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2. How Care is Expressed

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3. Challenges Family Members Face

G1: "…We did our routine workout. And this afternoon we went to get a new pair of eyeglasses. But there's some issue with the fundus examination."
G3: "@G1 What's wrong with the fundus, does it serous?"
G1: "…I have arteriosclerosis and my fundus was not clear to be seen. But it's no big deal, my vision is 0.7."

3. Findings

Qualitative findings

1. Awareness of Each Other's Health

2. How Care is Expressed

3. Challenges Family Members Face

- Privacy Concerns and Deferred Time Commitment
- Tracking Step Counts is Limited and One-Sided

C5: "They thought that my grandpa is 80 years old and still takes 30,000 steps a day, and I am so young but walk so little every day, and I feel very embarrassed to be educated by my grandfather as he always reminds me that I am not exercising enough."

3. Findings

Qualitative findings

1. Awareness of Each Other's Health

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3. Challenges Family Members Face

- Privacy Concerns and Deferred Time Commitment
- Tracking Step Counts is Limited and One-Sided

H1: "I would receive a lot of encouragement and feel happy and a sense of achievement when I reached 10000 steps. But in the meantime, I also worried if I over-exercised, which was bad for my leg."

4. Discussion

Family Sharing is Different from Social Network Sharing

In a family context, the accuracy of tracked data might be essential.

Designers could guide families to shift their attention from data to experiences and bodily feelings.

Older adults

Attached great importance to the group channel:

- gain a sense of achievement,
- Reduce the complexity.

The middle-aged

Main caregiver and supporter:

- Identify internal and external factors,
- Send reminders for anomalies.

The young

could not fully engage in fitness sharing:

- Value independence and privacy
- Fragmented attention

4. Discussion

Designing for the Intergenerational Family

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CONCLUSION:

- Family tracking triggered different levels of information sharing and different forms of caring.
- Older adults, middle-aged, and young participants displayed distinctly different use and care behaviors
- Family sharing requires higher accuracy and explanation for how data is collected and analyzed.
- Tracking tools to be designed for varied levels of expertise and engagement to account for the preferences and practices of each generation.

Thanks!

Does anyone have any questions?

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