

Using Human-Centered Design to Develop Behavioral Interventions

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Workshop on Innovative Study Designs and Methods for Developing, Testing and Implementing
Behavioral Interventions to Improve Health
NIH+ORBIT
April 2nd, 2014

**A few
things
about**



30 years of experience developing products, services and experiences across industries

Healthcare

Government

Education

Non-profit

Food & beverage

Toys

Consumer electronics

Organizational behavior

Energy

Automotive

Consumer goods

Personal care

Media

Financial products

Household goods

Sports

Retail & hospitality



600+ cross-disciplinary people

Anthropologists
Psychologists
Food scientists
Interaction designers
Graphic designers
Product designers
Industrial designers
Business designers
Environmental designers
Mechanical engineers
Architects
Organization designers
Systems designers
Writers
Service designers
Social scientists
Branding specialists



10 locations



IDEO firsts



The first commercial mouse for Apple



The first laptop computer for Grid

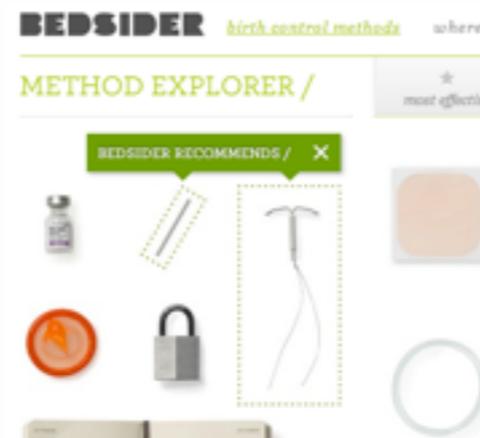
Our offering today

PRODUCTS



USB Blood
Glucose
Monitor

SERVICES



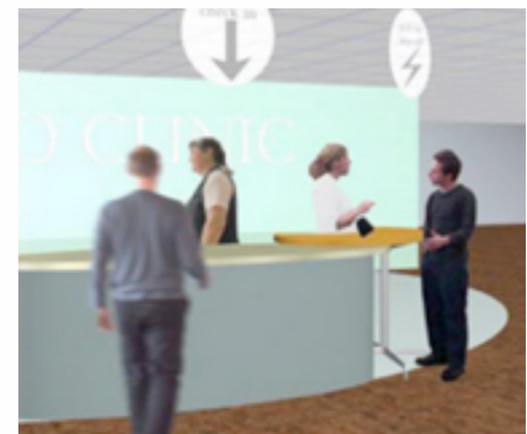
Preventing
teen
pregnancies

SPACES



Encouraging blood
donations for
Red Cross

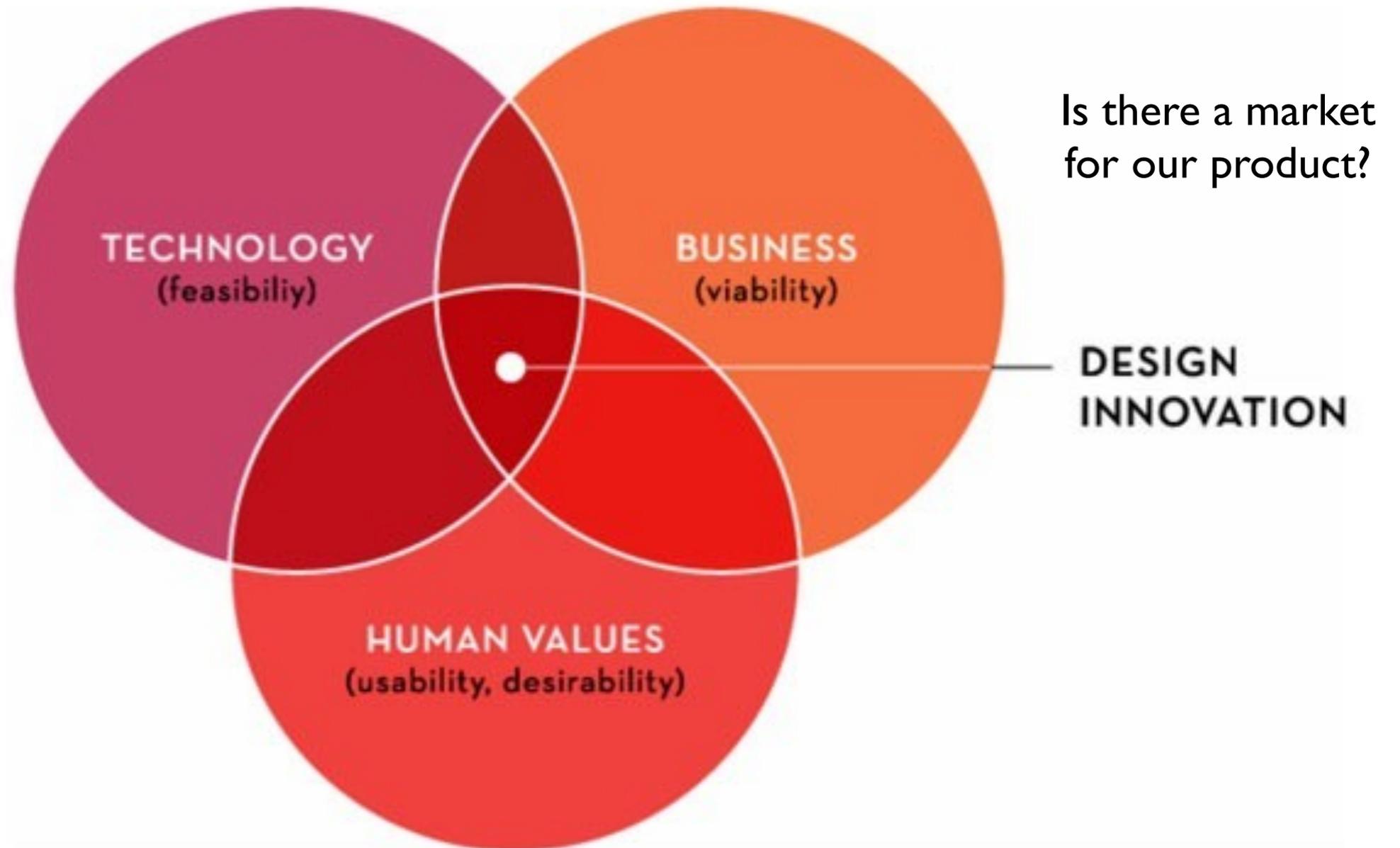
ORGANIZATIONS



Improving patient-
provider flow

What is human-centered design?

Can we build our product?



Is there a market for our product?

Are we designing for the real needs of our users?

Design research is for empathy and inspiration



In-context observations

Design research is for empathy and inspiration



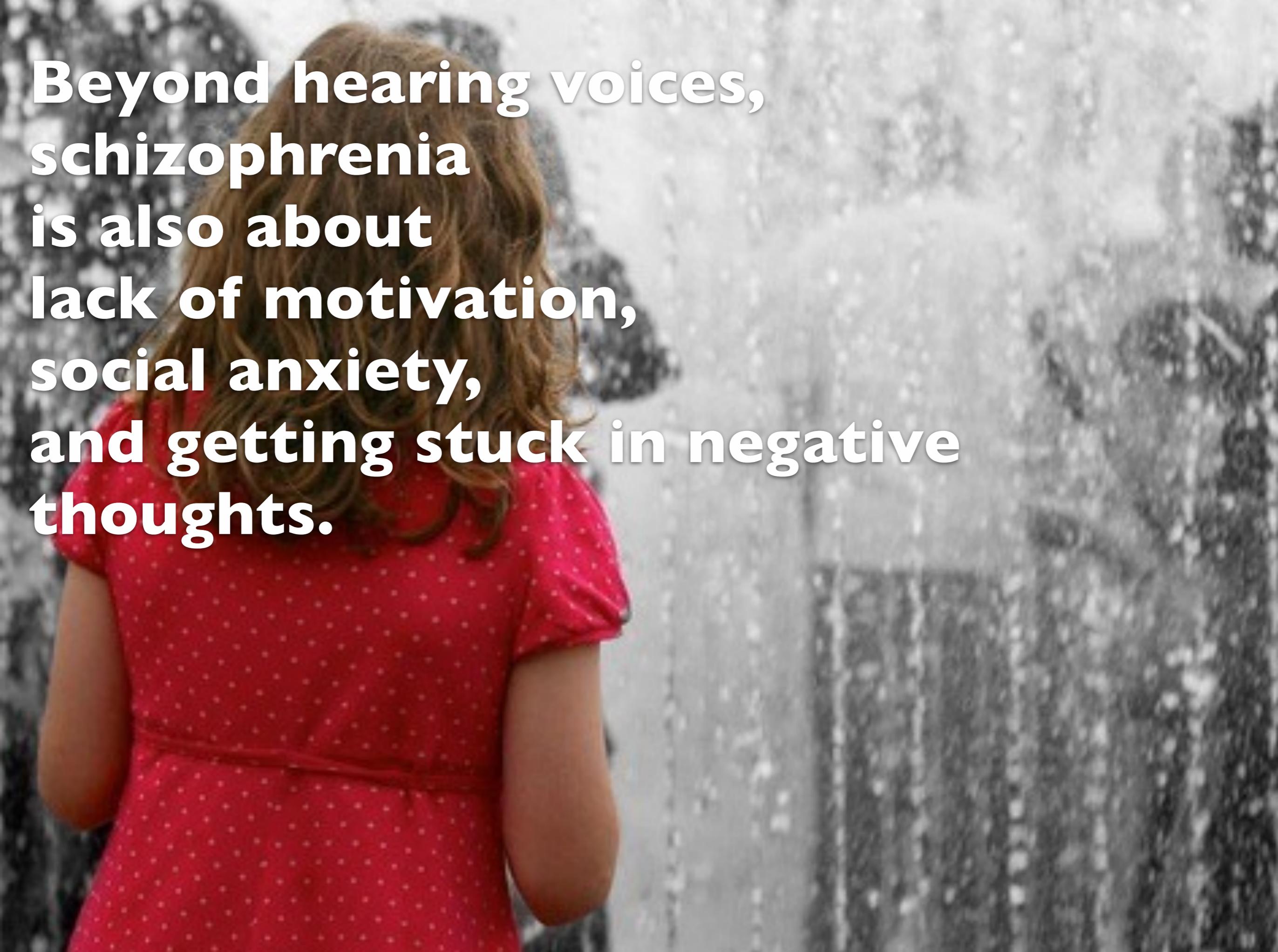
Analogous observations

Design research is for empathy and inspiration



Empathetic
immersions

**How might we design
a digital health intervention
to improve
the quality of life of young
patients with schizophrenia?**



**Beyond hearing voices,
schizophrenia
is also about
lack of motivation,
social anxiety,
and getting stuck in negative
thoughts.**

The journey of the PRIME app



The journey of the PRIME app

**Based on
academic
research**

UCSF



Self-determination
theory



Neuroscience
of reward

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**Inspired by
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The journey of the PRIME app

**Based on
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**Inspired by
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**Currently
under
development**

UCSF

IDEO

zauber



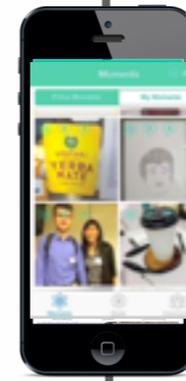
Self-determination
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Neuroscience
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Human-centered
design



We are here

PI.: Danielle Schlosser, UCSF

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**Inspired by
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IDEO

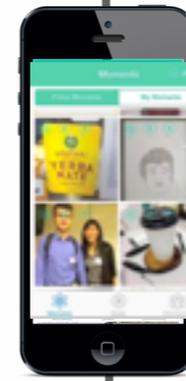


Human-centered
design



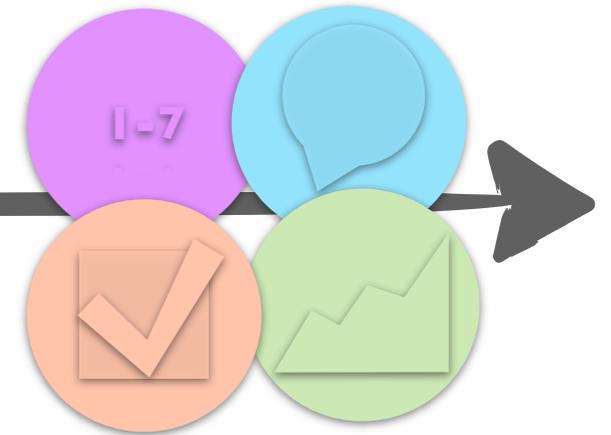
**Currently
under
development**

zauber



We are here

**Evaluated
through a model
based on
academic +
design research**



PI.: Danielle Schlosser, UCSF

The journey of the PRIME app

Inspired by
design research

IDEO



Human-centered
design



**We had 1:1 interviews
with six patients**



Participants ranked their needs through a card prioritization exercise



Sense of control is the core need

Feel a sense of control
over my future

Deepen my
relationships with
family and friends

Remember positive
moments

Feel "normal"/not like
I have a condition

group

Have a
partner/boyfriend/girl
friend

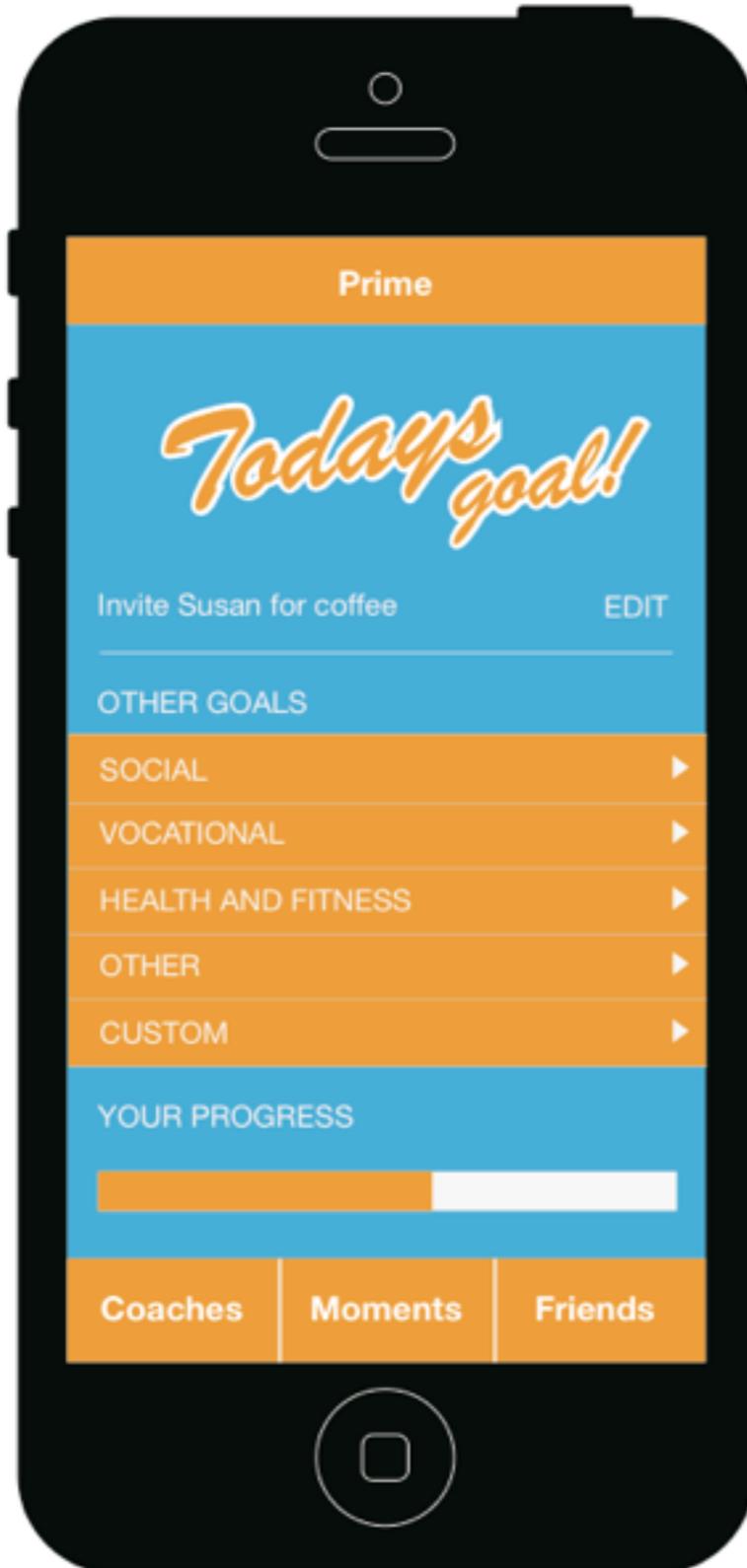
Be a role model

Feel appreciated when
I achieve a goal

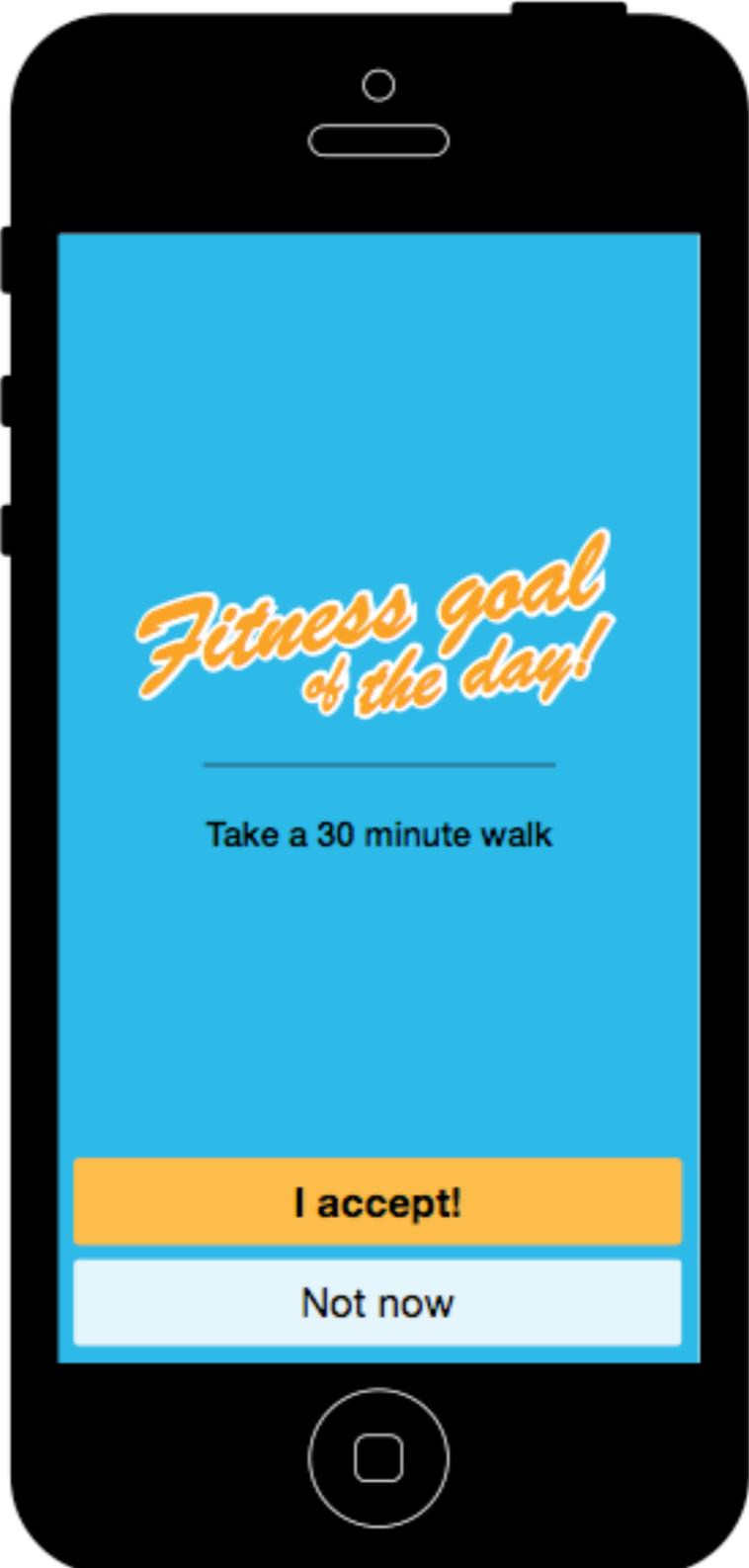
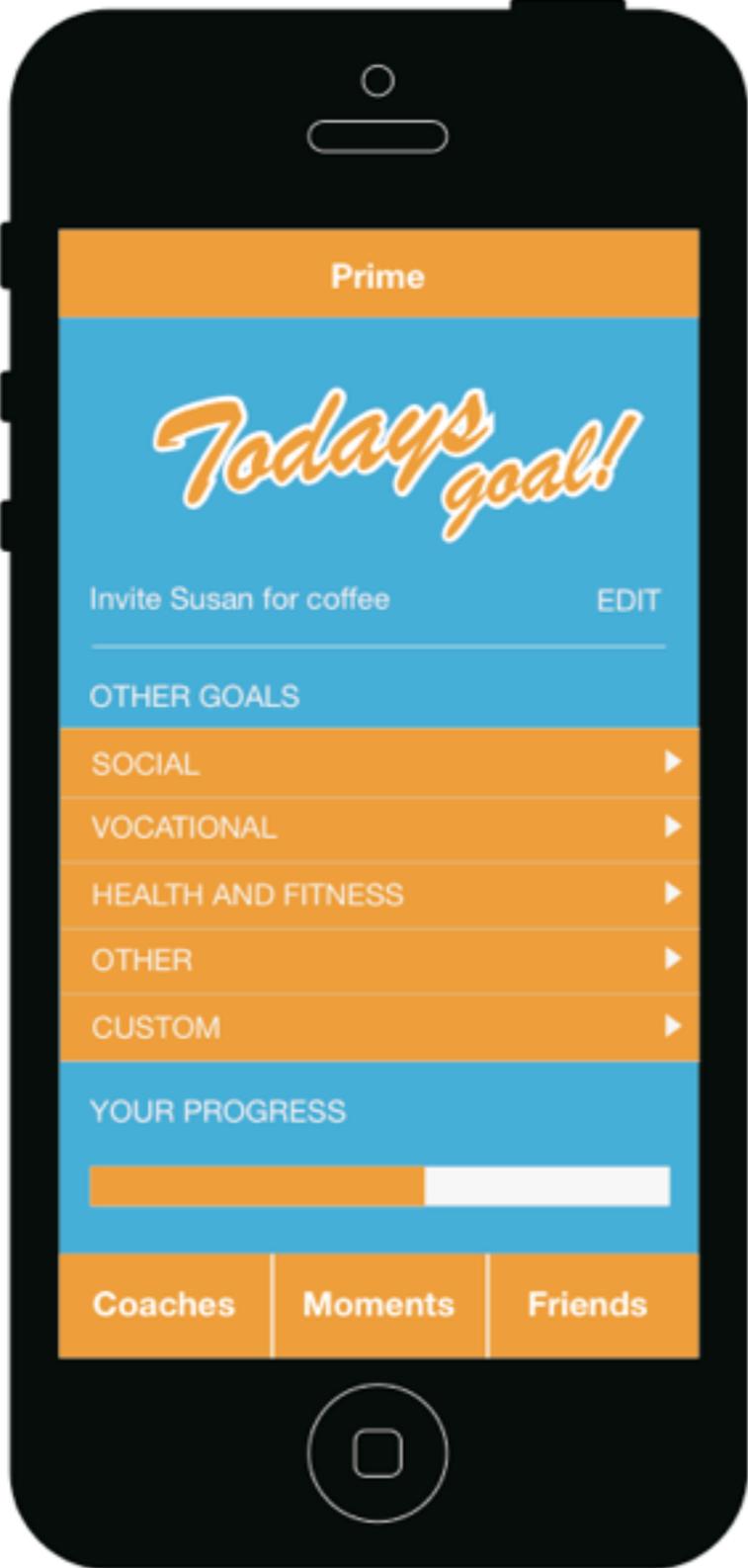
**Participants
experienced
the app through
paper prototypes**



Simplicity is more important than customization



Simplicity is more important than customization



Be open to fortuitous discoveries



A patient felt inspired to create a song out of the interview recording



PORTER INSTITUTE



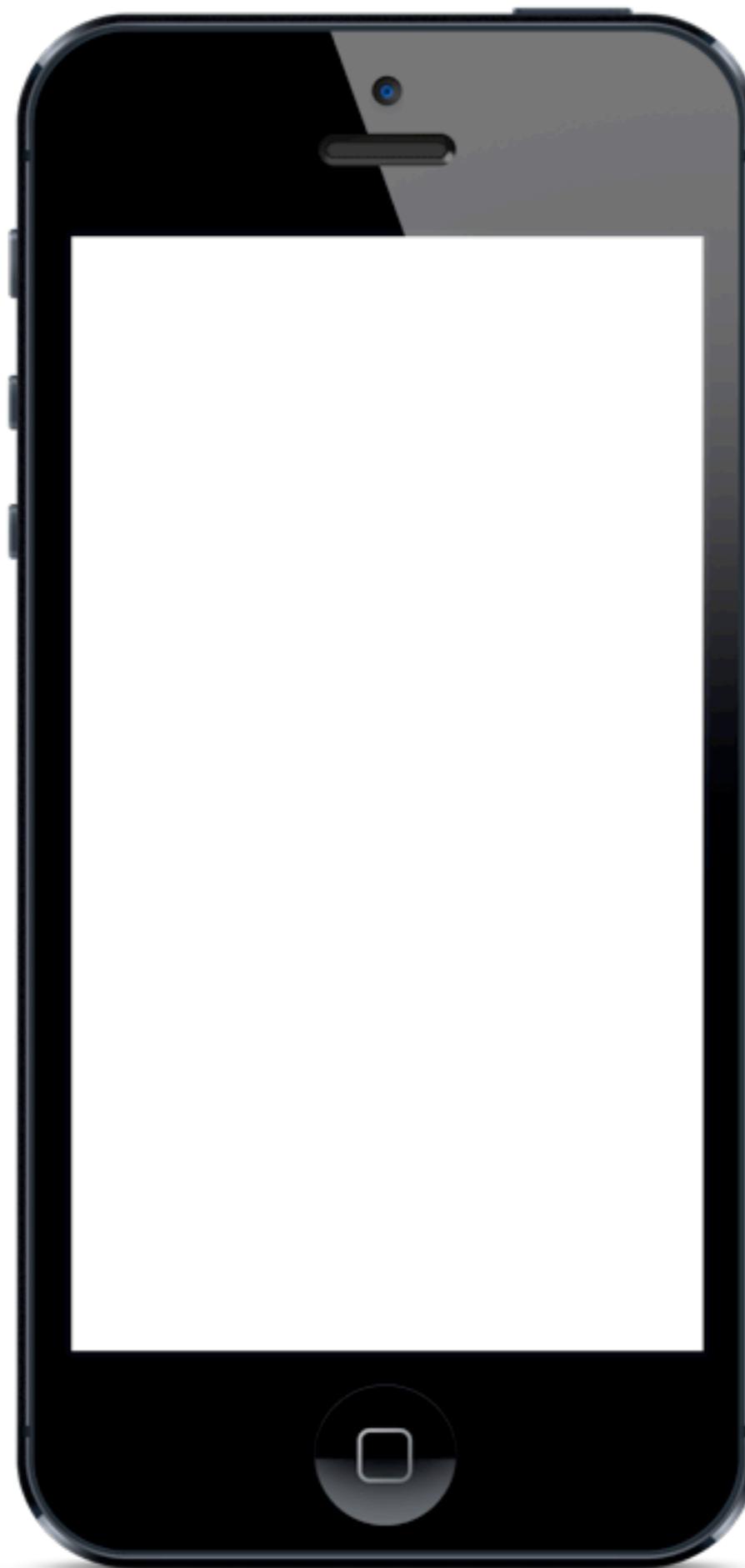
ideo



Lead with happiness, not health

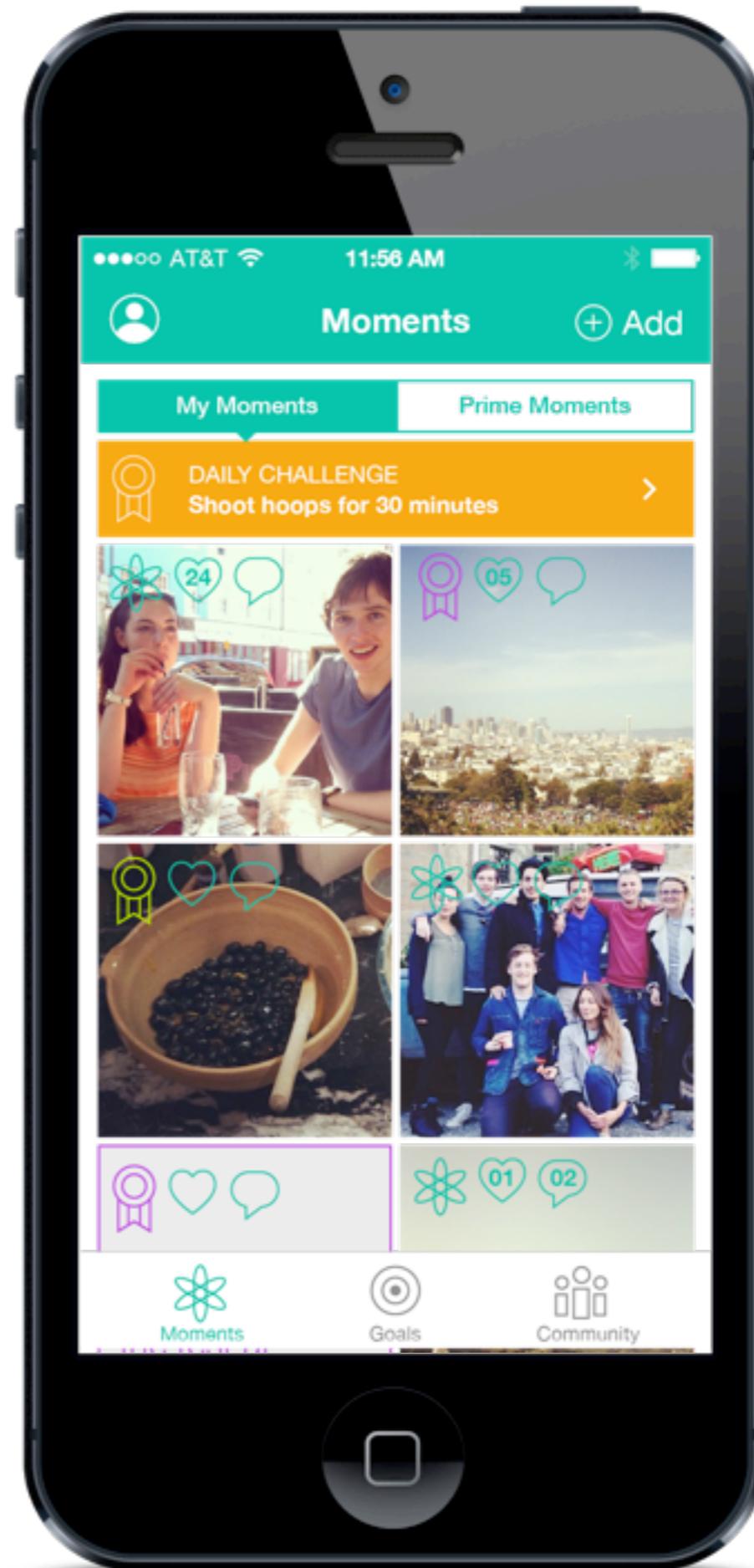


Meet PRIME



Meet PRIME

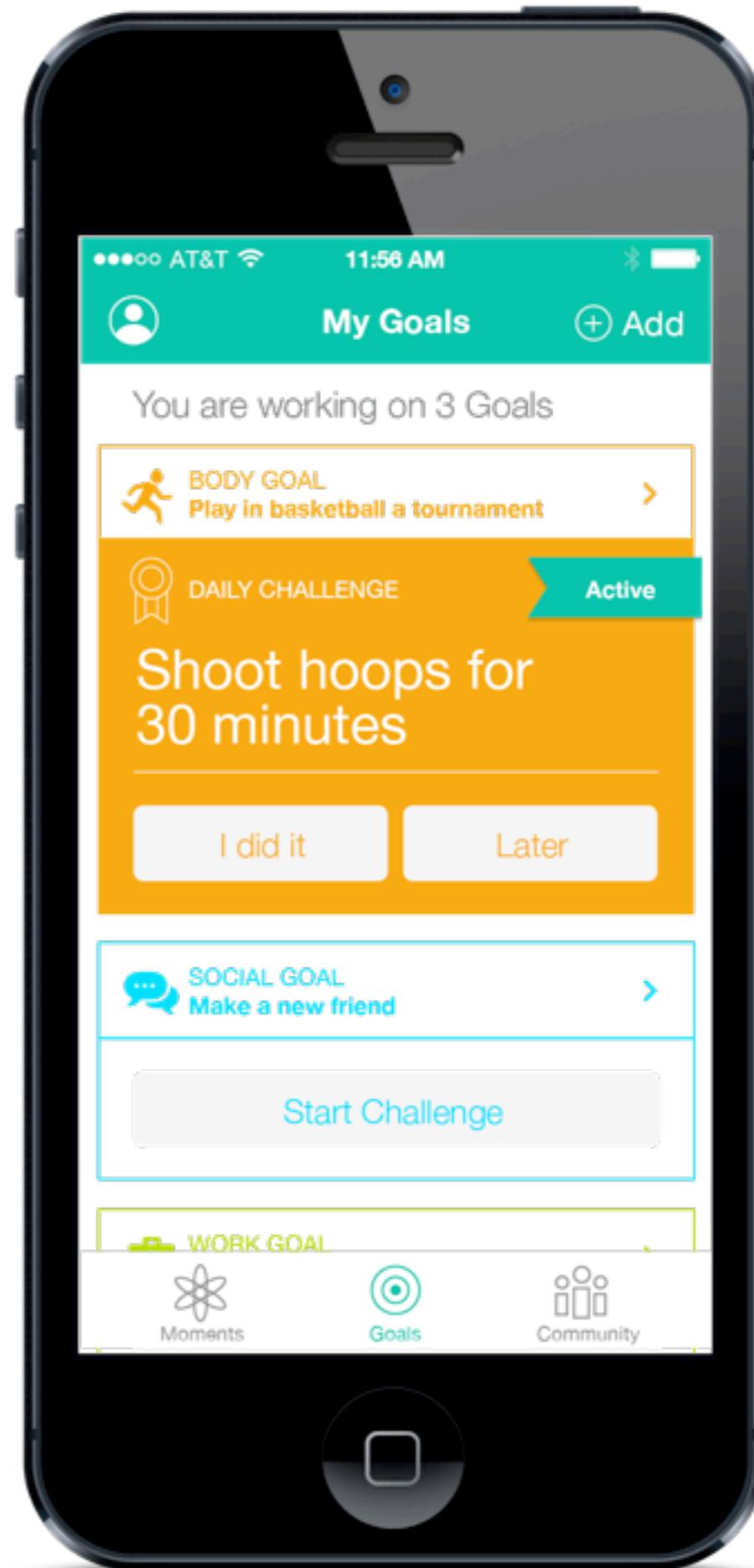
Safe online community
with shared positive moments
to encourage engagement



Meet PRIME

Safe online community
with shared positive moments
to encourage engagement

Personalized daily challenges
to help obtain a sense of achievement
and control

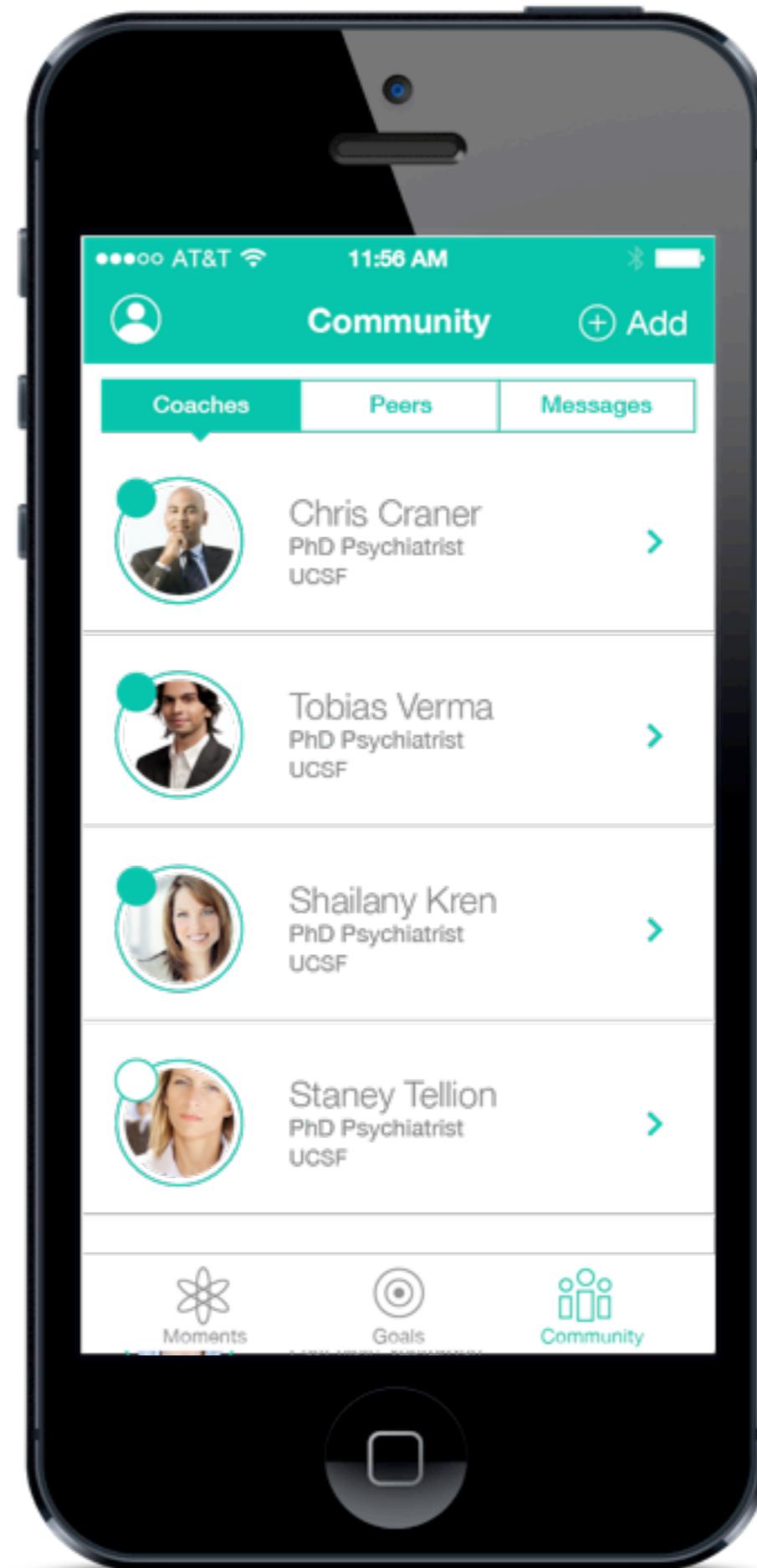


Meet PRIME

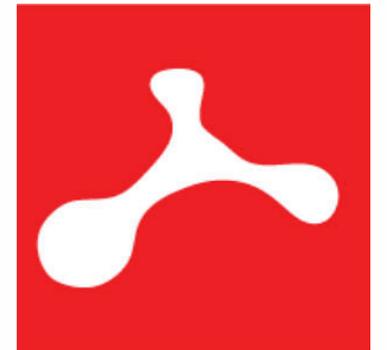
Safe online community
with shared positive moments
to encourage engagement

Personalized daily challenges
to help obtain a sense of achievement
and control

Remote access to coaches
to reduce hospitalization



Thank you



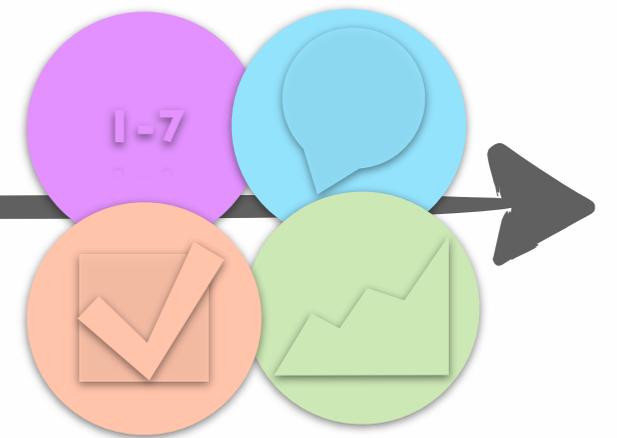
To the PRIME funders:

- NIMH K23 Career Development Award (PI: Schlosser)
- NIMH R34 Clinical Trial Planning Award (PIs: Schlosser/Vinogradov)
- NIH UL1 TR000004/UCSF CTSI Catalyst Award (PI: Schlosser)

Appendix

The journey of the PRIME app

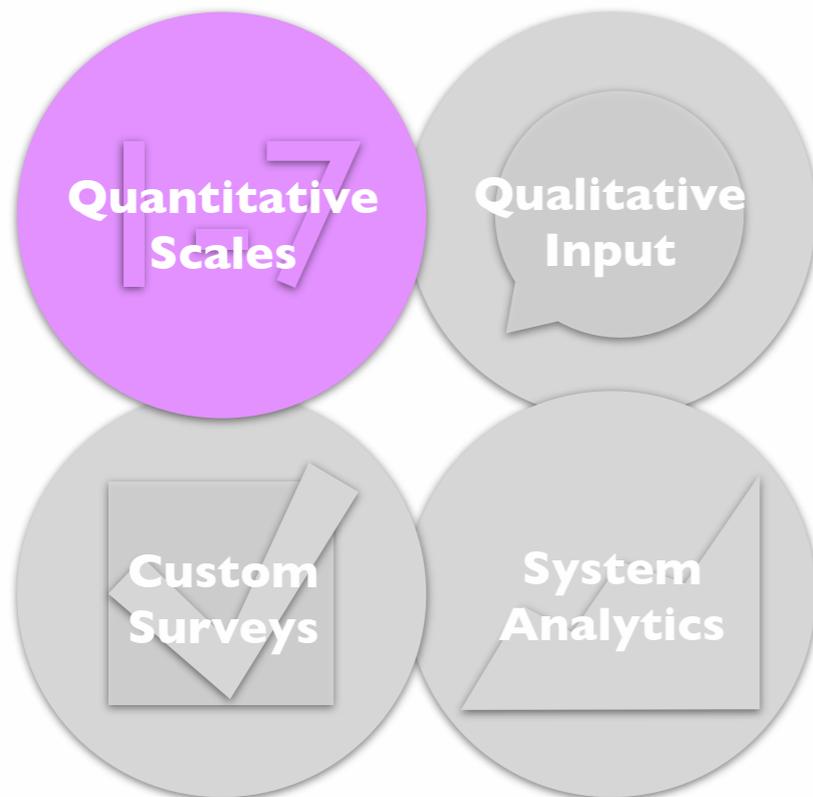
**Evaluated
through a model
based on
academic +
design research**



Cross-validating between quantitative and qualitative research to measure change in quality of life



Quantitative scales



Negative Scale (N)

N4. Passive/apathetic social withdrawal. Diminished interest and initiative in social interactions due to passivity, apathy, anergy, or avolition. This leads to reduced interpersonal involvements and neglect of activities of daily living. *Basis for rating:* reports on social behavior from primary care workers or family.

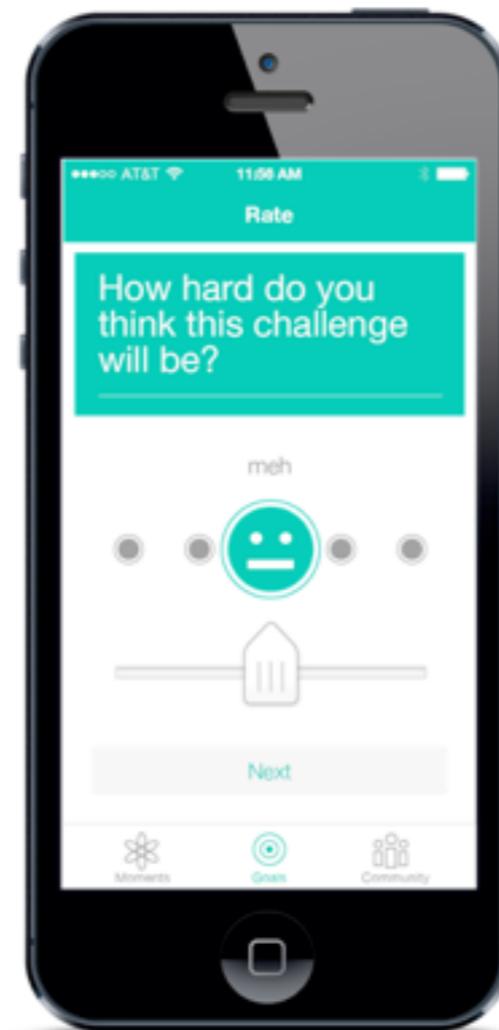
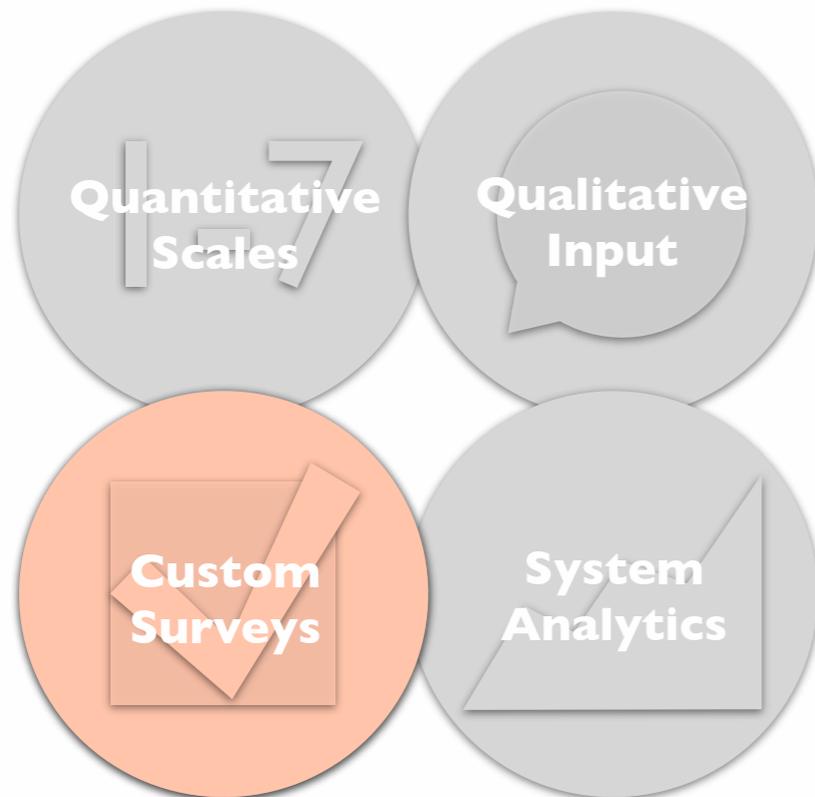
	Rating	Criteria
1	Absent	Definition does not apply.
2	Minimal	Questionable pathology; may be at the upper extreme of normal limits.
3	Mild	Shows occasional interest in social activities but poor initiative. Usually engages with others only when approached first by them.
4	Moderate	Passively goes along with most social activities but in a disinterested or mechanical way. Tends to recede into the background.
5	Moderate Severe	Passively participates in only a minority of activities and shows virtually no interest or initiative. Generally spends little time with others.
6	Severe	Tends to be apathetic and isolated, participating very rarely in social activities and occasionally neglecting personal needs. Has very few spontaneous social contacts.
7	Extreme	Profoundly apathetic, socially isolated, and personally neglectful.

Negative Scale (N)

N5. Difficulty in abstract thinking. Impairment in the use of the abstract-symbolic mode of thinking, as evidenced by difficulty in classification, forming generalizations, and proceeding beyond concrete or egocentric thinking in problem-solving tasks. *Basis for rating:* responses to questions on similarities and proverb interpretation, and use of concrete vs. abstract mode during the course of the interview.

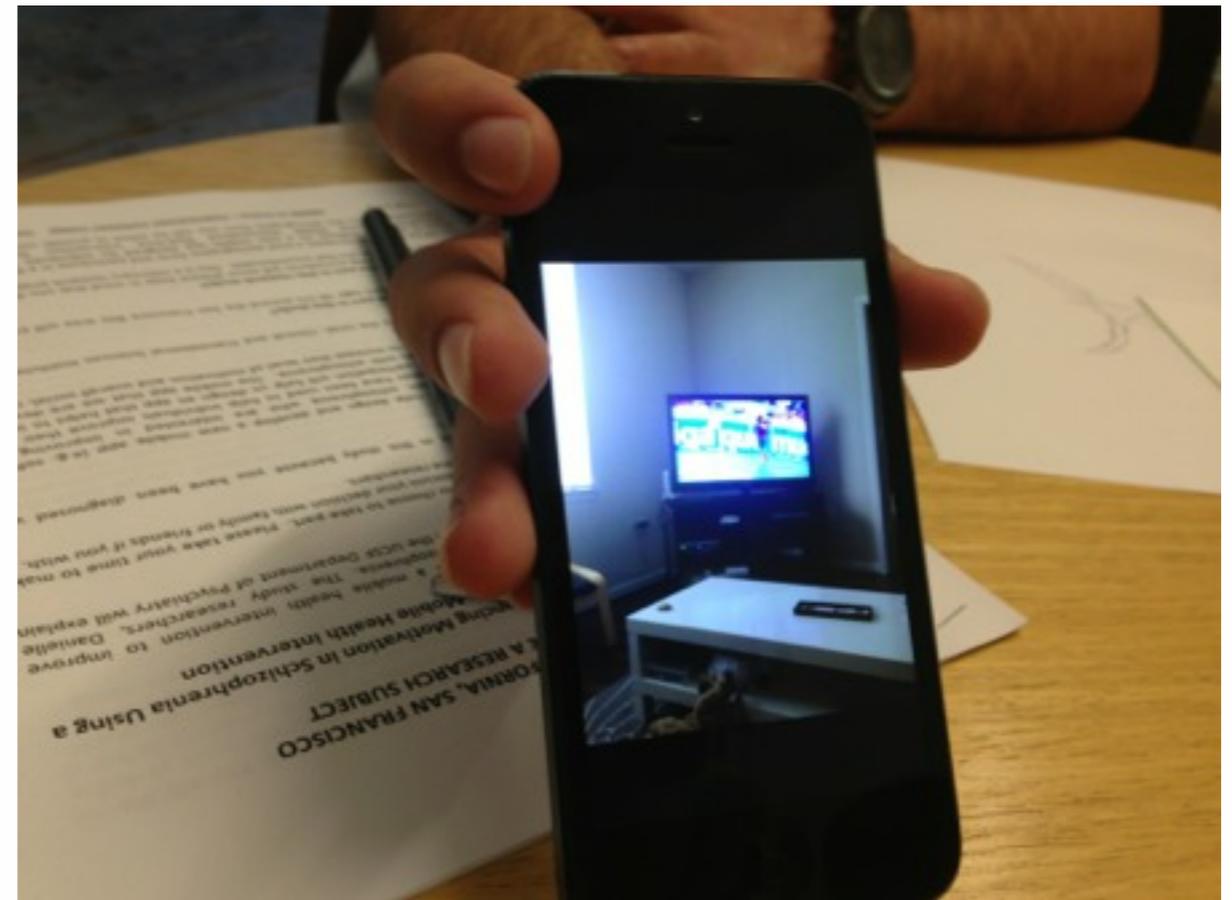
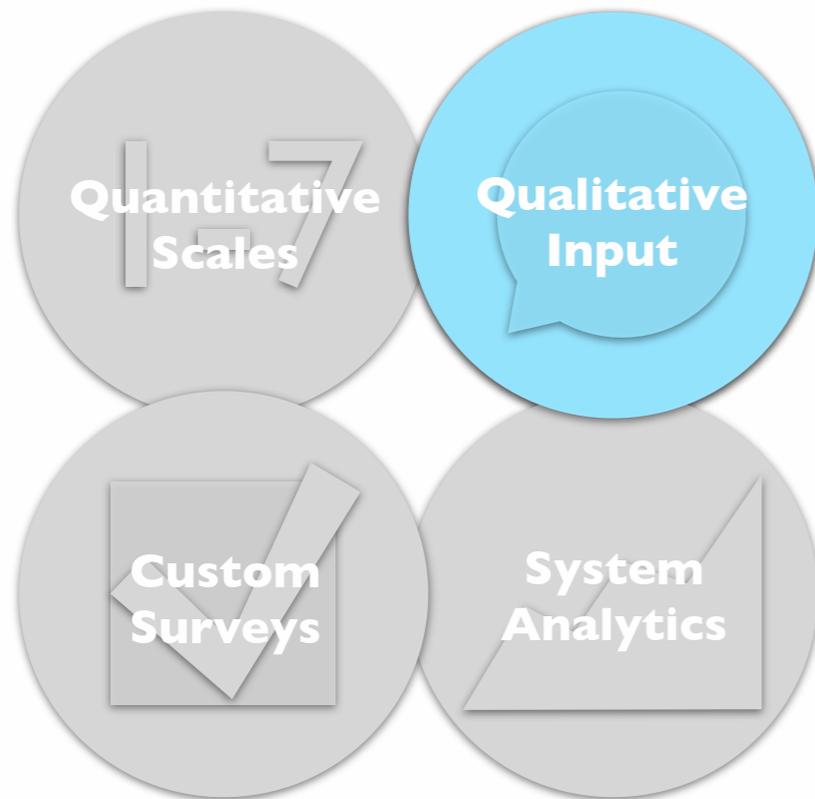
Scales are used as a benchmark to measure the efficacy of the app compared to traditional therapies

Custom surveys



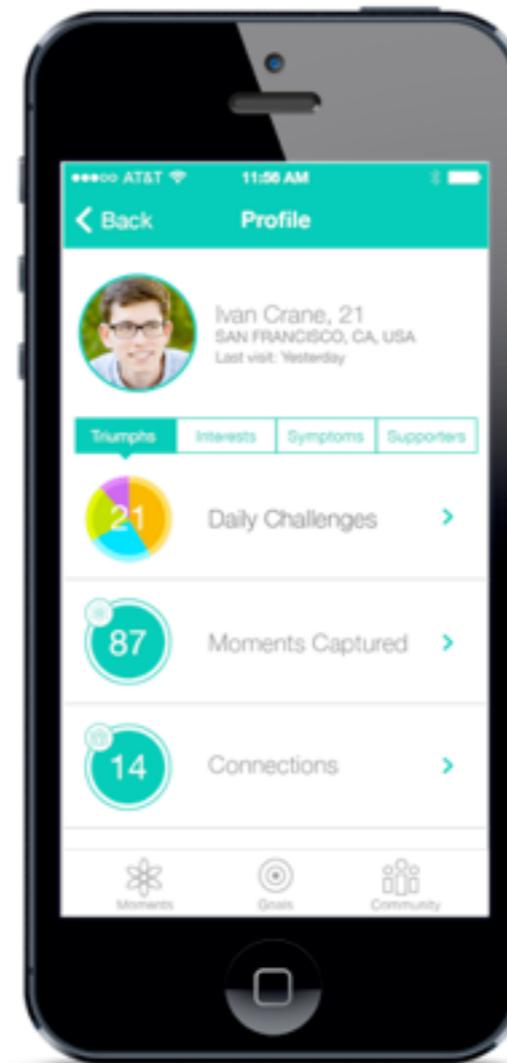
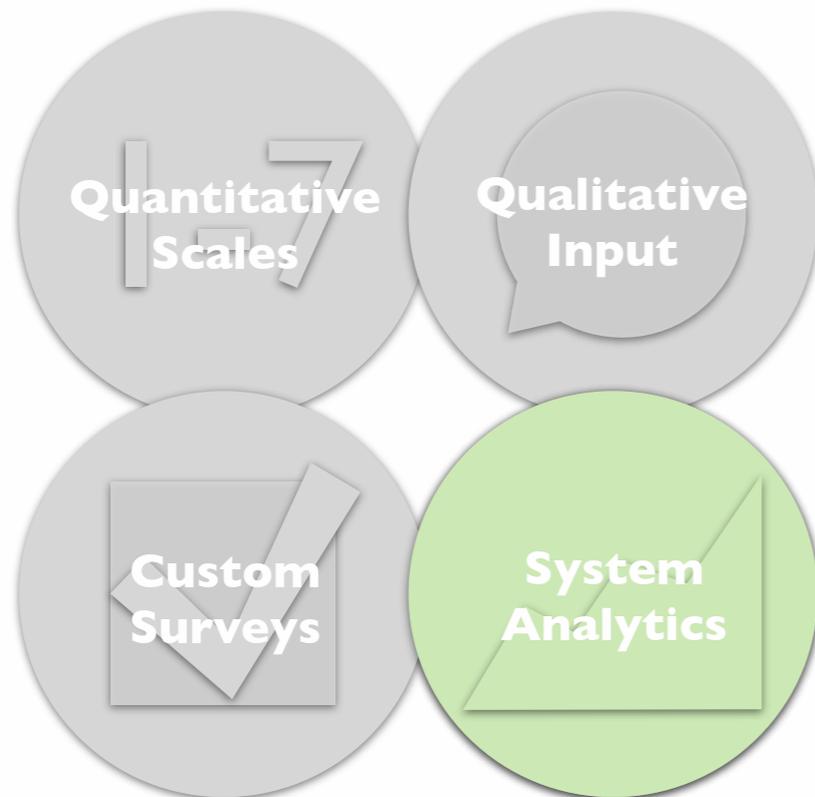
Custom surveys complement data from the scales, and are administered to both patients and family members

Qualitative input

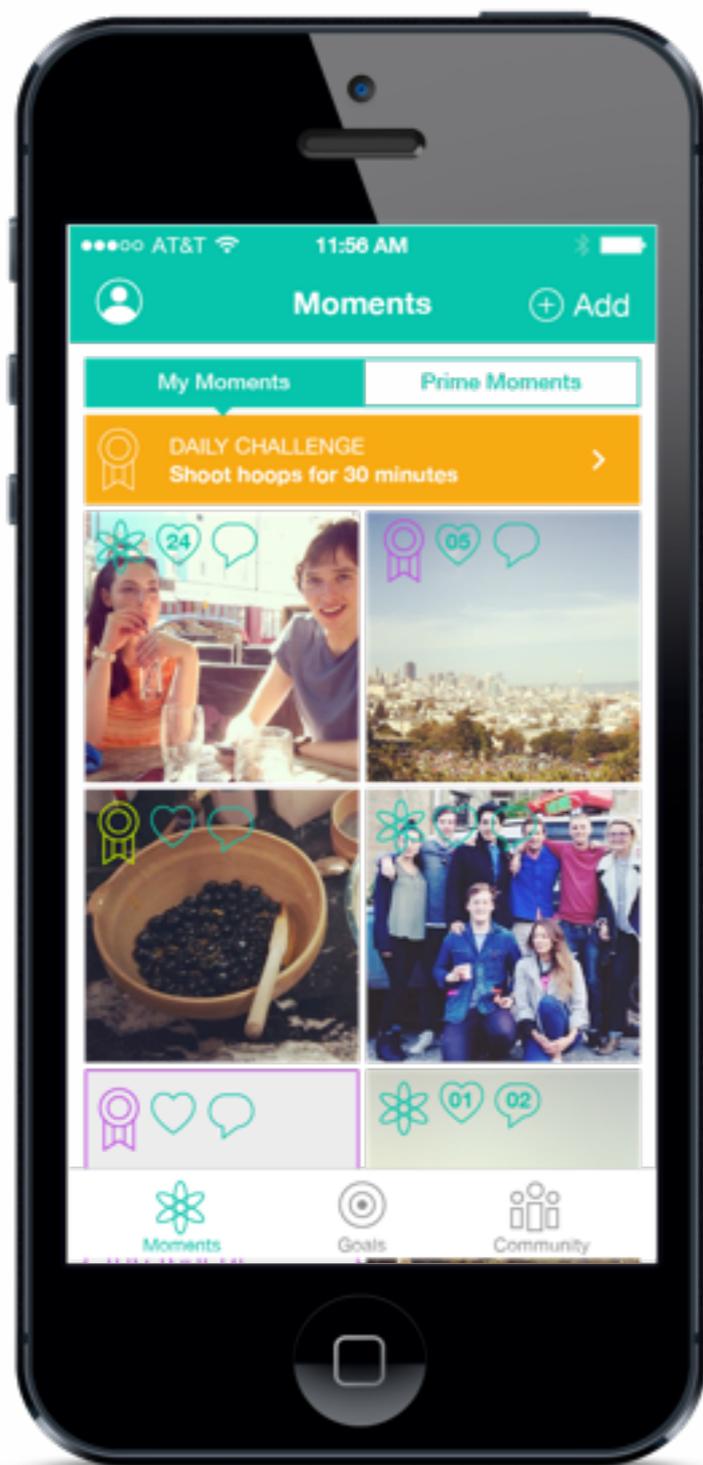


Visual exercises are used during face-to-face sessions with patients. Example: Take 10 pictures of your favorite daily moments (before and after using the app)

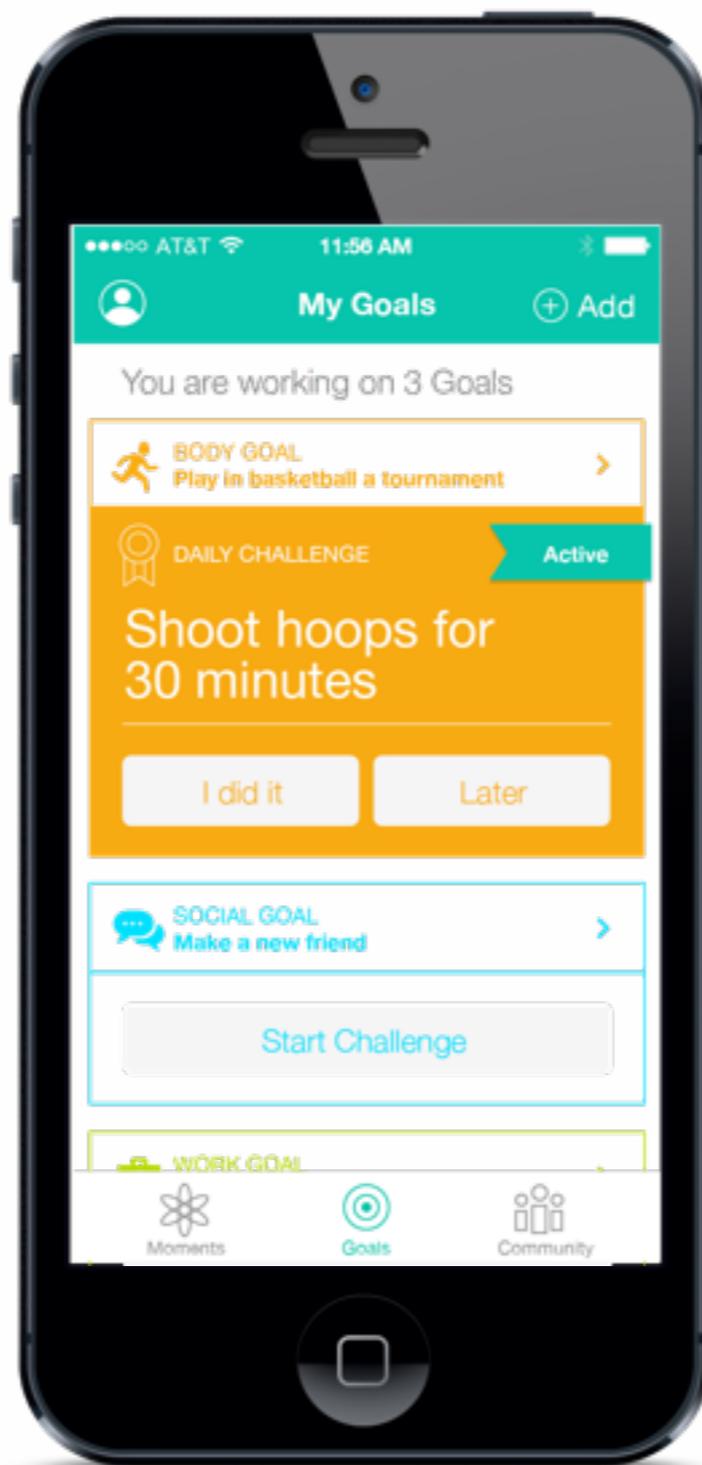
System analytics



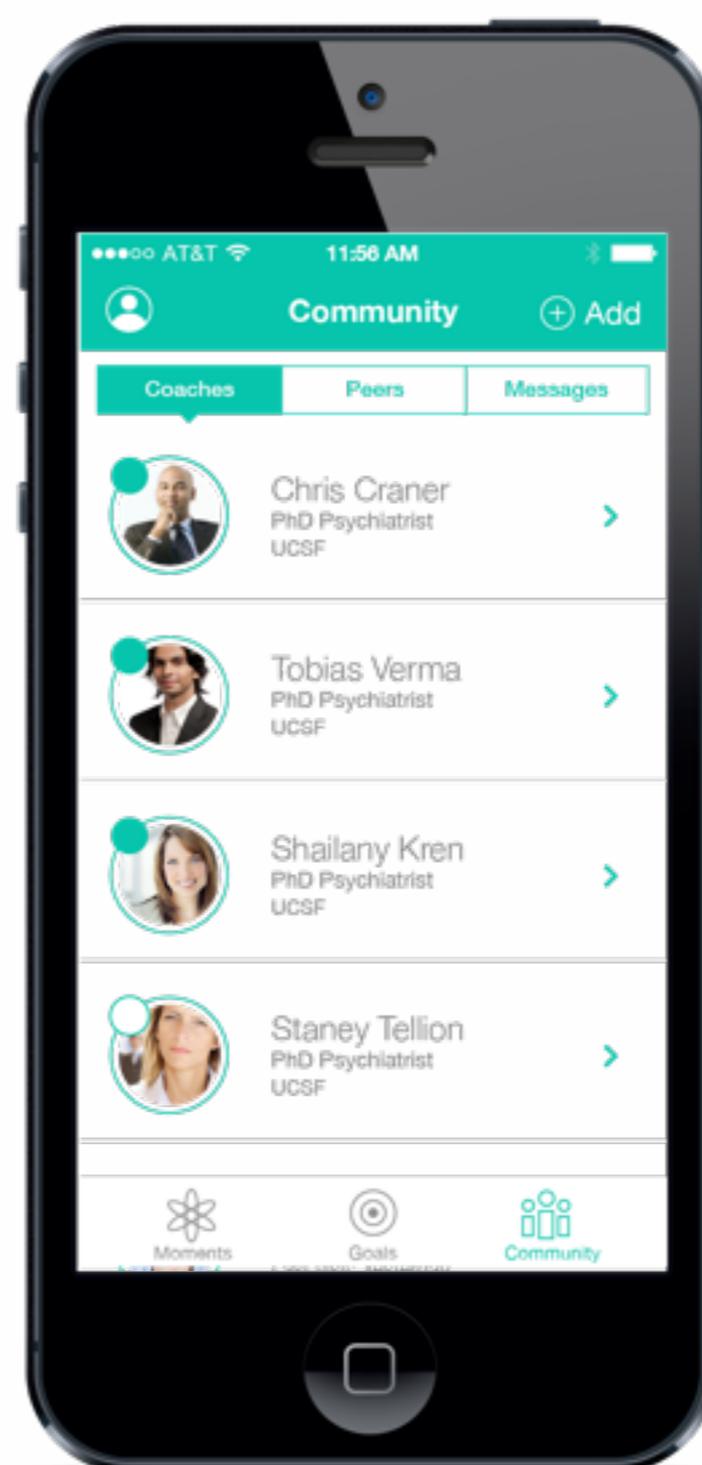
System analytics include # of challenges achieved and # of conversations started



Safe online community to encourage engagement



Personalized daily challenges to perceive a sense of achievement



Remote access to coaches to reduce hospitalization