HOW & WHY USERS TRACK HEALTH SYMPTOMS

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Summary of Findings

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Evexia as an App?

We already know

Scheuller et al. (2021) found opportunities to increase **effectiveness** and **efficiency** of mood tracking apps through various feature improvements including:

- addressing user **desire** to avoid entering negative moods
- enabling work arounds to inconsistent tracking

Why this matters

- 1 in 4 people experience diagnosable mental health conditions in their lives (John's Hopkins Medicine, 2019)
- Apps are more affordable and readily available (East & Havard, 2015)

The Current Study

Address the opportunity to improve evidence based healthcare with tracking in partnership with research institutions through understanding if users desire match with evidence based data collection constraints

STUDY METHODOLOGY

| Screener | Consent | Measures | Diary Study | Mod Guide | IDIs |

50 Submissions Received

Screened for previous **mood disorder** diagnosis **OR** previous experience with tracking an aspect of **health or wellbeing** at least once

38 Submissions Received

Obtained written consent to **data collection**, **storage**, and **contact** for follow up interview

60 Submissions Received

Created measurements utilized on Evexia platform in Qualtrics to **ensure anonymity** across **4 days** of collection

63 Submissions Received

Participants were asked to **reflect** on submissions each time they completed 1-4 of the measurements

28 Individual participants

Research team crafted question bank and **interview guide** based on initial **data analysis**

15 In-Depth Interviews

35-60 minute **interviews** conducted to gain deeper **understanding** of experience

Sample Diary Study Questions

1. Why did you submit your response at this time today?
2. What was the hardest part about submitting today's response?
3. How did you feel after submitting your surveys?
4. Have you tracked or do you plan on tracking other health data today? If so, please describe.

Sample Semi-Structured IDI Questions

1. Can you explain what challenges prevented you from submitting your surveys on days you skipped?
2. What information would expect, or want to see, if any, post survey?
3. How did reminders impact if or when you submitted?
4. Did completing these measurements change your emotions, if so, how?

3

DEMOGRAPHICS

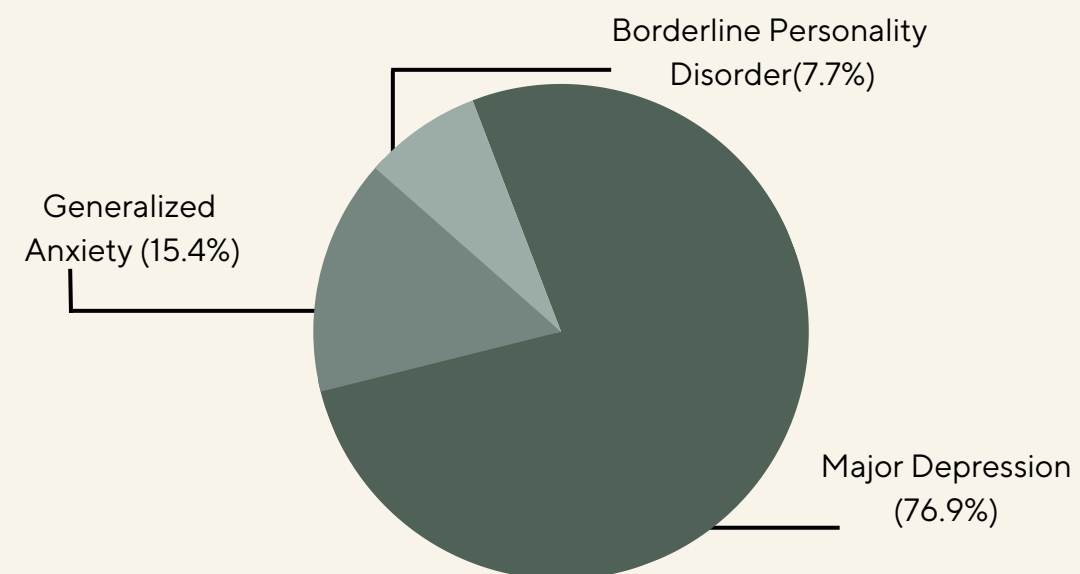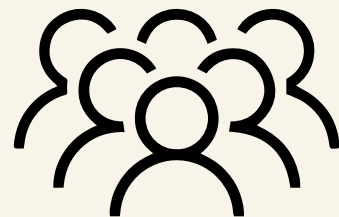*of 28 participants*

100%
of respondents own
a smartphone

32%
of respondents reported
having a mental health
condition

92%
of respondents have
tracked aspect of health or
well being at least once

Ages ranged between 23 and
72 with average respondents
age being **33 years old**

Borderline Personality
Disorder(7.7%)

Generalized
Anxiety (15.4%)

Major Depression
(76.9%)

Desire for **customizable** questions, fields, and cadence

What information do users want to track when it comes to their mental health and well being?

Sleep, Mood, and Substance Use

Participants desire to track was lower if they felt their mental health was stable, or if they had sufficient coping mechanisms

Holistic view of physical and mental health

Participants want to be met where they already are and avoid burdensome tasks

"*I was expecting text reminders, which I typically hate, but in this case I think they make more sense. It would seem more personal and would stand out from work emails*" - P12

"*I want to keep tracking like this. I liked that answering the questions forced me to reflect on how I am. I'd want to send the diary entry where I explained my answers over time to a provider*" - P8

Desire for improved wellness, **self-reflection ability**, and provider approach

What are the users end goals in tracking their mental health symptoms?

- Improvement in overall health and wellness

- Improvement in self-awareness

- Ability to understand and tell their story

- Ability to compile personal data

- Ability to see correlations between personal data

- Have a compilation of history to take to a provider

- Minimize the barriers to approaching a therapist

"Some of the questions would impact my mood because they would make me--I mean, they would inspire some sort of self analysis." -P5

"The anxiety questionnaire was great for self reflection, because specifically, anxiety by its nature does not foster reflection." -P9

Desire for **user friendly** wearable technology integration & different **survey titles**

What are the general challenges users face when trying to track their mental health symptoms?

Personal **feelings** and **triggers** to **verbiage** of the surveys

Lack of internet and insufficient **technology** at times

Time of day: **work** and responsibilities getting in the way

Increase in symptoms (depression, anxiety, etc.) can cause **low energy** and lack of **motivation**

"Honestly, work prevented me from remembering to submit the surveys on some days because of how busy I was" -P32

"When it comes down to tasks I find redundant, I often lose motivation to continue doing them. This task was kind of like therapy homework to me." -P10

Distraction, **time constraints**, and **physical location** influenced the ease at which participants could track daily

What external or internal influences are challenges to tracking and how can the design be better suited to varying circumstances?

Internal: Some participants were easily **distracted** which made them **forget** to take the surveys on certain days

External: Being on **vacation** or having full days out of the house made it **difficult** for some participants to find time

"*Sometimes I forgot to track simply because this wasn't a normal part of my routine and so I got distracted by my other daily things.*" -P28

" *I was actually like going to an airport or getting ready to go to an airport or I was physically traveling so that made it extremely difficult.*" -P3

Desire for survey to **adapt** to user's current and overall psychological experience

How does current psychological status moderate the way a user interacts with the interface?

Expressed **desire** fewer response options while **experiencing** low mood or depression symptoms

Desire for alternative voice entry option to increase **accessibility** for users whose current mood acts as a barrier to typing

Concurrent experience of symptoms correlated with **desire** for more **immediate feedback** regarding tips to stabilize mood

"I'd like actionable feedback that might help me not just reflect on anxiety, but possibly even give me tips." -P9

"The one thing I find the most unappealing is the fact that I have to type when I'm in a mental space where I can barely move, so being able to talk would be nice." -P20

Current **mood mediates accuracy** of user's input and **motivation** to engage with survey content

How does current psychological status moderate a user's motivation to track their health symptoms?

Current diagnosis of a mood disorder **increased motivation** to complete surveys that are **applicable** to diagnoses
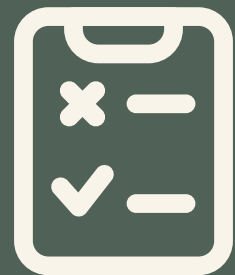
Strong language utilized in survey influences survey completion as user tends to **avoid** negative psychological triggers

User's demonstrated an **increased desire** to complete surveys if currently experiencing **relevant** symptoms, regardless of diagnosis.

(e.i. higher incentive to complete anxiety questionnaire while in an anxious state)

"Since I know I have anxiety--just because I have had it for years, and I see a therapist--I'd probably always want to track symptoms that relate to that." -P14
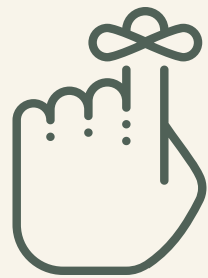
"Like, using the world "failure" is really strong and might make me step away from the survey. And I probably wouldn't come back to it." -P5

SUMMARY OF RECOMMENDATIONS
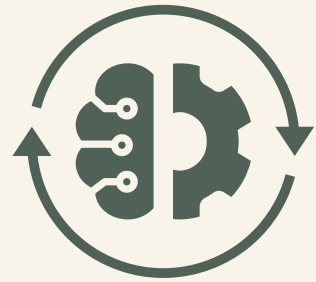
Development of AI that is adaptable to a person's unique psychological experience over time and that provides relevant actionable recommendations

Design customizable survey reminders as a means of reducing attrition so that user is provided with the most complete data and least burden

Inclusion of measures that account for mind-body connection in order to provide user with an understanding of how mental & physical health correlate
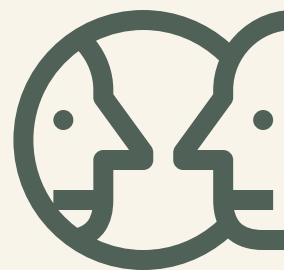
FUTURE RESEARCH

Research psychological mechanisms which decrease motivation to track mental health consistently and explore internal vs external influences

Investigate how to best integrate wearable technology for tracking biomarkers of physical wellbeing

Develop a better understanding of how surveys can encourage positive self-inquiry and self-reflection

Thank you

References

- East ML, Havard BC. Mental Health Mobile Apps: From Infusion to Diffusion in the Mental Health Social System. *JMIR Ment Health* 2015; DOI: 10.2196/mental.3954

- Schueller, S. M., Neary, M., Lai, J., & Epstein, D. A. (2021). Understanding people's use of and perspectives on mood-tracking apps: interview study. *JMIR mental health*, 8(8), e29368.

- Mental health disorder statistics. Johns Hopkins Medicine. (2019, November 19). Retrieved July 15, 2022, from https://www.hopkinsmedicine.org