

Supportive Data-Driven Financial Technologies for Individuals with Serious Mental Illnesses

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MOTIVATION

Money and mental health are cyclical:

- Money struggles lead to financial stress
- Mental health struggles impact finances

Problematic spending is also cyclical:

Impulsive spending → guilt and shame → anxious avoidance of finances → followed by more spending to cope with negative feelings

Specifically, *bipolar disorder (BD)* is strongly associated with financial instability. **70% individuals with BD have reported impulsive spending during hypomania.**

Individuals with serious mental illnesses often need additional care partner involvement and increased support at different illness stages. However, current financial technologies do not focus on these unique needs.

To address this gap, we conducted a survey to understand key financial patterns and needs across different mood episodes of BD.

Survey data collection:

- 480 respondents with a BD diagnosis
- from the US, UK, and Ireland

In our dataset, **22%** of respondents filed for bankruptcy and **37%** considered bankruptcy

EFFECTS OF TECHNOLOGY

Features of current technologies, apps, and the internet in general, help fuel impulsive spending behaviors, often by design (e.g., one-click pay).

82% of respondents said that **technology currently makes it easier to overspend**

82% wanted tech to make spending harder

“In my perception, it makes money feel less ‘real’ than physical cash, therefore giving money less value.”

MONEY MANAGEMENT STRATEGIES

53% respondents mentioned having strategies to actively manage their finances and avoid impulsive spending. However, they still struggle to meet their financial goals.

Most common strategies:

- Avoid known triggers
- Monitor spending carefully
- Budget/plan for overspending
- Self-imposed friction
- Engage in more “mindful” behaviors

These existing practices can be further supported by personalized, data-driven interventions.

SYMPTOMATIC SPENDING

Manic Mood Episodes

- Significantly increased spending
- Categories of reported purchases:
 - Vices, splurge items, hobby-related, travel, gifts/charity, random incidentals
- Shows a wider range of spending motivations
- Timing: throughout the day and late night

Depressive Mood Episodes

- Majority report decreased spending
 - Show increased feelings of debt anxiety
- If spending does occur:
 - *Comfort spending*---to improve mood
 - *Convenience spending*---to ration energy
- Timing: evening and late-night spending

Most are aware that their spending changes, but *not always in the moment of spending*. *In-situ* feedback and *preemptive* interventions can help users manage symptomatic spending.

INTERVENTION AND PROTOTYPE DESIGN

Based on our prior work, we have explored how we might leverage granular open banking data to infer patterns and support better financial wellbeing for those with serious mental illnesses.

The use of future financial data-driven interventions could help users understand and manage their spending triggers, reduce impulsive spending, reinforce positive financial behaviors, and facilitate collaborative financial management.

Priorities for future financial interventions:

- Leverage clinical practices
 - E.g., cognitive behavioral therapy, dialectical behavioral therapy, and mindfulness activities
- Provide timely data-driven feedback and notifications
- Adapt to users’ evolving needs

Key intervention strategies:

- Making actionable suggestions to prevent harmful behaviors
- Providing alternative activities to replace spending
- Helping users understand and manage unique spending triggers
- Rewarding users for keeping up with “good spending” (e.g., paying bills on time)
- Using gamification to develop financial skills and maintain productive habits
- Monitoring user progress toward personal goals

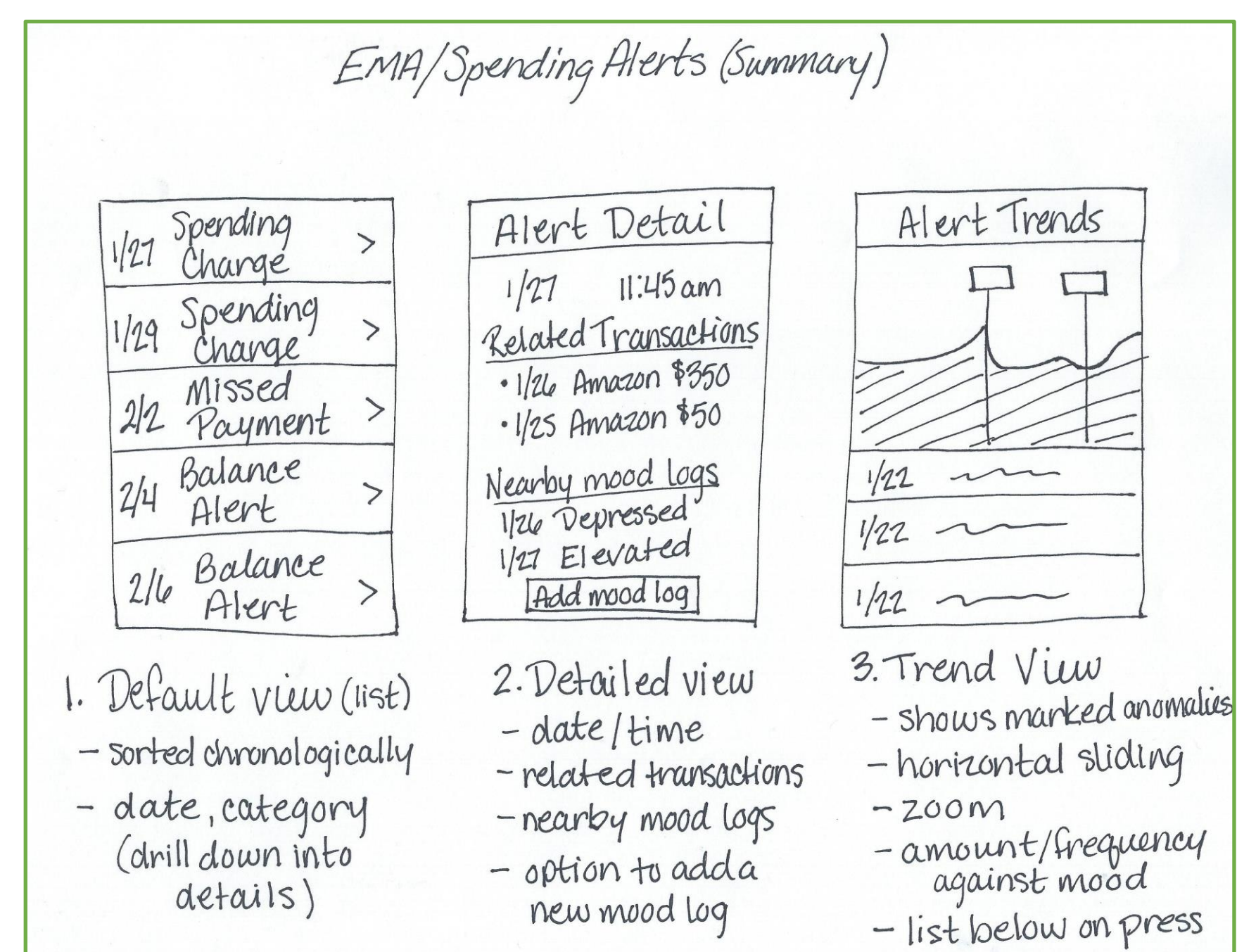
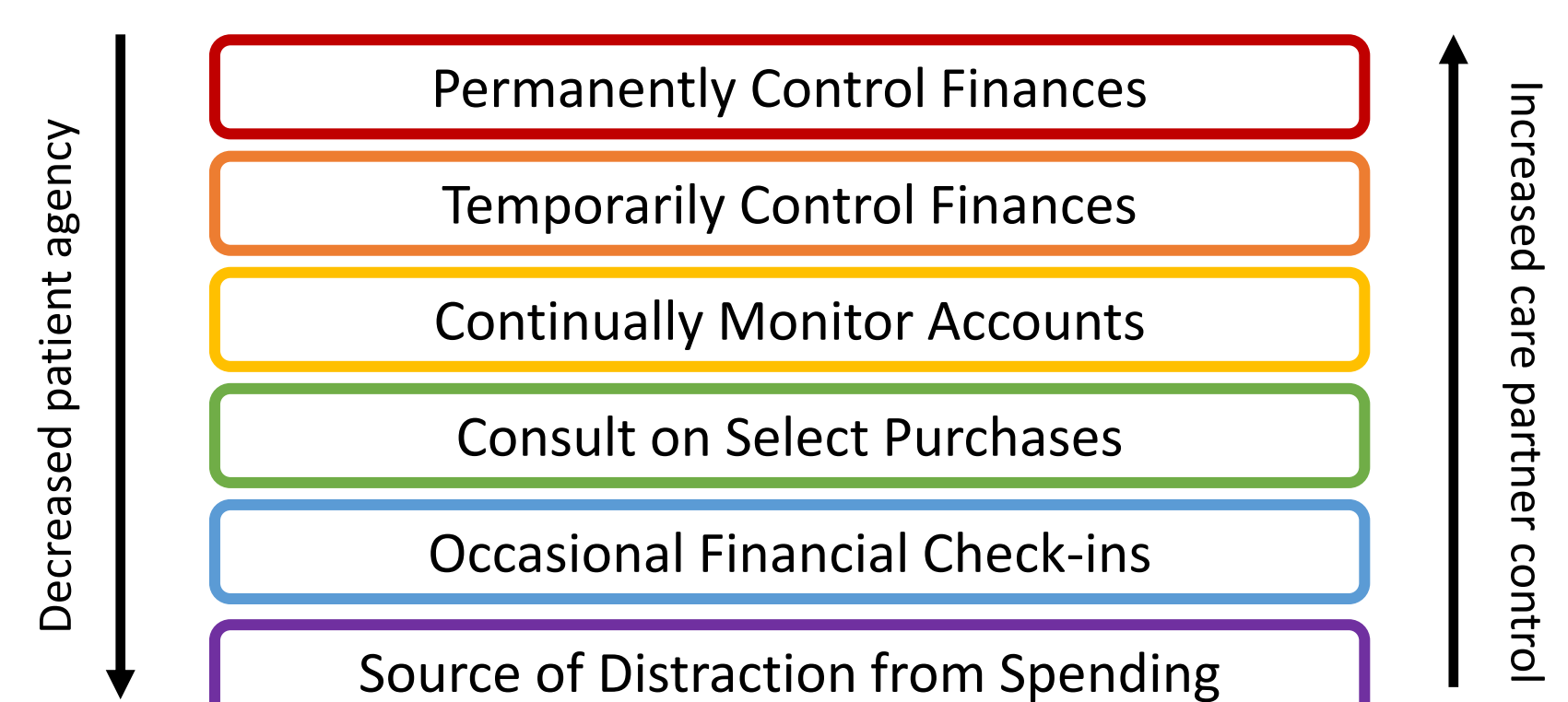


Figure 1. An early paper prototype of an intervention to help users identify the relationship between mood and spending behaviors, as well as notify users of anomalous events detected in their financial data.

CARE-PARTNER COLLABORATION

Nearly half of respondents had friends or family help manage their spending—with increasing levels of control



Future work should aim to understand patient and care partner dynamics and ideal agency and privacy trade-offs.