Personal Informatics in Interpersonal Contexts:
Towards the Design of Technology that Supports the Social Ecologies of Long-Term Mental Health Management

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Serious mental illness (SMI) affects 1 in 4 people in the world at some point in their lives

(World Health Organization, 2018)
Bipolar Disorder (BD)

Fluctuations in
• mood
• energy
• activity
People facing SMI are adapting off-the-shelf personal informatics tools as part of condition management.

**Tracking** everyday activities improves outcomes and minimizes symptoms.
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Personal informatics grew from an individual-centric orientation
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self- { tracking reflection knowledge experimentation improvement

Personal Informatics, Quantified Self
We need to more explicitly and holistically consider the sociotechnical dimensions of personal health management.

Data practices are:
• Socially motivated
• Collaboratively conducted
• Embedded in interpersonal contexts
We focus on the “long-tail” of self-management

- Ad-hoc, vernacular practices
- Potentially outside of clinical oversight
  - Long-term
  - Flux-prone
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Complimentary studies across 2 sites

- Seattle area
  - N=14
  - Individuals with BD
  - 1-on-1 in-person interviews

- Boulder area
  - N=8
  - Individuals with BD & stakeholders
  - Focus groups
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Contributions

• Characterize relations and roles
• Formalize this social ecology
• Prosthelytize about design
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Bronfenbrenner’s Ecological Systems Theory (EST)

**TEMPORAL LAYER**
- Rhythms, life transitions, socio-historical events

**EXOLAYER**
- Sociocultural context
  - Societal norms
  - Government policies
  - Economic trends

**MICROLAYER**
- Closely involved ties
  - Caregivers
  - Support groups
  - Friends
  - Family

**INFORMATICS LAYER**
- Relational & mediating roles of personal data

**INTERACTION PROPERTIES**
- Valence
- Intensity
- Direction
- Dynamism

**INDIVIDUAL** (sex, age, health, etc.)

**MICROSYSTEM**
- Neighbors
- Local politics
- Mass media
- Industry

**MESOSYSTEM**
- Social services
- Churches
- Health services

**EXOSYSTEM**
- Health insurers
- Workplaces
- Schools
- Community organizations

**MACROSYSTEM**
- Ideologies
- Economic trends
- Individual managing SMI
- Demographics
- Condition characteristics
Helpful
- Tracking support
- Emotional support
- Monitoring
- Intervening

Harmful
- Dissatisfactory care
- Denial, shame, rejection
- Toxic, triggering influences
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Aiding & obstructing

- Financial, instrumental, and emotional needs
- Fear of being “found out” as having SMI
- Health insurance a consistent concern
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- Tendency to conceal
- Shedding societal attitudes & accepting oneself
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- Transitional experiences
- SMI linked to more frequent, extreme, irrevocable changes
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- Deeply supportive
- Moderately supportive
- Neutral/absent
- Irritating
- Abusive

Intensity: weak/strength of a relation’s influence
- Tight during moments of crisis, relaxed during stable periods

Direction: who is impacting or being impacted
- Uni-, bi-, or multi-directional influence on and of SMI at micro to macro levels

Dynamism: (in)stability of a relationship
- From lifelong friends or entrenched cultural norms to employment turnover
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Designing new generations of tools that support the social ecologies of use
• Accommodate accruing, breaking, and changing social ties

• Normative data representations can fuel scrutiny and inadequacy

• Self-tracking is about crisis mitigation and crisis management
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Advancing an emerging class of collective informatics systems that support the social ecologies of long-term mental health management.
Thank you! Questions?