Homeless Youth: New Models of Intervention and Engagement

Niranjan S. Karnik, MD, PhD
Associate Dean for Community Behavioral Health &
The Cynthia Oudejans Harris, MD, Professor of Psychiatry

Rush University – Department of Psychiatry & Behavioral Sciences
Conflicts & Grant Support

• State of Illinois, Department of Human Services (MPI: Zalta & Karnik)
• Hedge Funds Care (MPI: Zalta & Karnik)
• NIH R01-DA041071 (MPI: Garofalo & Karnik)
• NIH UG1-DA049467 (MPI: Karnik & Pollack)
• SAMHSA H79-AM082299 (MPI: Wainer & Karnik)
• SAMHSA U79-TI025387 (MPI: Karnik & Delaney)
• Grants from Wounded Warrior Project, Tawani Foundation, Michael Reese Trust, McCormick Foundation, Bob Woodruff Foundation, Crown Family Philanthropies, Blowitz Ridgeway Foundation
• NIH UL1-TR002398 (MPI: Solway, Ross & Jacobs)
• NIH KL2-TR002387 (PI: Beyer)
Today's presentation

• Needs & background on homeless youth

• Homeless youth research projects (UCSF, U of C & Rush)

• Stepping Stone Project

• Stepping Stone Project 2.0
Homeless youth

- Chronic lifetime trauma exposure: physical, sexual and emotional
- Substance use disorders
- HIV secondary to abuse and/or prostitution
- Secondary effects of early drug exposure (*in utero*)
- Effects of violence: domestic, interpersonal and community
- Mental health difficulties with limited access to care


Reviewing the Homeless Youth Literature

Child Psychiatry Hum Dev
DOI 10.1007/s10578-011-0270-1

REVIEW PAPER

The Mental and Physical Health of Homeless Youth: A Literature Review

Jennifer P. Edidin · Zoe Ganim · Scott J. Hunter · Niranjan S. Karnik
Preliminary Studies

Psychiatric Disorders, High-Risk Behaviors, and Chronicity of Episodes Among Predominantly African American Homeless Chicago Youth

Anne L. Castro, BA
Erika L. Gustafson, BA
Ashley E. Ford, BS
Jennifer P. Edidin, PhD
Dale L. Smith, PhD
Scott J. Hunter, PhD
Niranjan S. Karnik, MD, PhD

Behavioral Sciences
ISSN 2076-328X
www.mdpi.com/journal/behavsci/

Psychiatric Disorders and Substance Use in Homeless Youth: A Preliminary Comparison of San Francisco and Chicago

Ernika G. Quimby 1, Jennifer P. Edidin 2, Zoe Ganim 3, Erika Gustafson 2, Scott J. Hunter 2 and Niranjan S. Karnik 2,*

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3 Department of Education and Early Childhood Development, Government of Australia, Victoria 3001, Australia; E-Mail: zoeganim@gmail.com

Original study investigated the relationships between psychoses, high-risk behaviors, and the onset, duration, and prevalence of episodes in Chicago. Methods. Sixty-six homeless individuals were assessed for each participant. Results. Homeless episodes were positively correlated with higher number of psychiatric diagnoses. Participants with diagnoses of Current Compulsive Disorder, Substance Abuse, and Psychotic Homelessness were associated with higher homelessness than those without diagnoses. Conclusions. The three time-related parameters, suggesting that preliminary variables may benefit homelessness research and interventions, may benefit from individualized interventions.
Sites

- Community-based
- Housing, support

- The Night Ministry (West Town, Chicago)
- Teen Living Program (Bronzeville, Chicago)
Description of Sites

• **Teen Living Program**
  - Programs: Street outreach, Emergency shelter, Transitional living program, After care
  - Services: Education and employment, Life skills, Mental health and medical care
  - Population: 500 youth/year, 85% AA, 50% LGBT

• **Night Ministry**
  - Programs: Youth outreach, Interim housing, Pregnant and parenting youth housing, Transitional living, Continuing care
  - Population: >2400 youth/year, 50% AA, 18% Mexican, 14% White, and 14% Puerto Rican
  - Services: Rush-run mental health clinic provides psychological and psychiatric care at West Town Shelter
### Epidemiology Study (UCSF and U of C)

#### Population Demographics (N=116)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Average Age (yrs.)</strong></td>
<td>19.3  (SD 1.0)</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>54%</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>46%</td>
</tr>
<tr>
<td><strong>African American</strong></td>
<td>74%</td>
</tr>
<tr>
<td><strong>Caucasian</strong></td>
<td>5%</td>
</tr>
<tr>
<td><strong>Latino</strong></td>
<td>5%</td>
</tr>
<tr>
<td><strong>Multiracial/Other</strong></td>
<td>16%</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at first homeless episode</strong></td>
<td>Mean 16.5 (SD 3.5 yrs.)</td>
</tr>
<tr>
<td><strong>Length of longest episode</strong></td>
<td>Mean 14.4 (SD 21.1 mos.)</td>
</tr>
<tr>
<td><strong>Total lifetime episodes</strong></td>
<td></td>
</tr>
<tr>
<td>1 - 3</td>
<td>68%</td>
</tr>
<tr>
<td>4 - 6</td>
<td>16%</td>
</tr>
<tr>
<td>7 - 9</td>
<td>3%</td>
</tr>
<tr>
<td>&gt; 9</td>
<td>12%</td>
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Epidemiology Study
Psychiatric Diagnosis Results

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>N=116</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depressive Episode</td>
<td>63</td>
<td>54</td>
</tr>
<tr>
<td>Suicidality, Current</td>
<td>66</td>
<td>57</td>
</tr>
<tr>
<td>Manic Episode</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Hypomanic Episode</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Panic Disorder Current</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Agoraphobia w/o history of Panic Disorder Current</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Social Phobia Current (Social Anxiety Disorder)</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>Obsessive Compulsive Disorder</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Posttraumatic Stress Disorder</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>N=116</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychotic Disorder</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Mood Disorder, with psychotic features</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Anorexia Nervosa</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bulimia Nervosa</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Anti-Social Personality Disorder</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>Substance Dependence Current</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Substance Abuse Current</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Alcohol Dependence Current</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Alcohol Abuse Current</td>
<td>12</td>
<td>10</td>
</tr>
</tbody>
</table>
Cell Phone Use Among Homeless Youth (LA 2009)

Journal of Urban Health: Bulletin of the New York Academy of Medicine, Vol. 88, No. 6
doi:10.1007/s11524-011-9624-z
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Cell Phone Use among Homeless Youth: Potential for New Health Interventions and Research

Eric Rice, Alex Lee, and Sean Taitt
**Cell Phone Use Among Homeless Youth (LA 2009)**

<table>
<thead>
<tr>
<th>Right now, pick the sentence that best describes your cell phone access?</th>
<th>Number</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have my own cell phone and use it every day</td>
<td>67</td>
<td>39.64</td>
</tr>
<tr>
<td>I have my own cell phone, but no minutes</td>
<td>26</td>
<td>15.38</td>
</tr>
<tr>
<td>I share a cell phone with a friend</td>
<td>12</td>
<td>7.10</td>
</tr>
<tr>
<td>I don’t have my own cell phone, but I can borrow one from a friend or associate</td>
<td>26</td>
<td>15.38</td>
</tr>
<tr>
<td>I don’t have a cell phone and I cannot borrow one</td>
<td>38</td>
<td>22.49</td>
</tr>
<tr>
<td>Missing responses = 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How often do you use a cell phone?</th>
<th>Number</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Several times a day</td>
<td>87</td>
<td>51.48</td>
</tr>
<tr>
<td>Once a day</td>
<td>17</td>
<td>10.06</td>
</tr>
<tr>
<td>Once every couple of days</td>
<td>7</td>
<td>4.14</td>
</tr>
<tr>
<td>About once a week</td>
<td>4</td>
<td>2.37</td>
</tr>
<tr>
<td>Less than once a week</td>
<td>16</td>
<td>9.47</td>
</tr>
<tr>
<td>Never, I don’t have any access to a cell phone</td>
<td>38</td>
<td>22.49</td>
</tr>
<tr>
<td>Missing responses = 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What kind of cell phone plan do you have?</th>
<th>Number</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I buy minutes</td>
<td>39</td>
<td>23.35</td>
</tr>
<tr>
<td>I have a contract, so I pay a bill each month</td>
<td>64</td>
<td>38.32</td>
</tr>
<tr>
<td>I don’t have a cell phone</td>
<td>64</td>
<td>38.32</td>
</tr>
<tr>
<td>Missing responses = 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Homeless But Connected: The Role of Heterogeneous Social Network Ties and Social Networking Technology in the Mental Health Outcomes of Street-Living Adolescents

Eric Rice · Seth Kurzban · Diana Ray

Received: 29 July 2010 / Accepted: 14 October 2011 / Published online: 11 November 2011
© Springer Science+Business Media, LLC 2011
Homeless Youth Social Network

Face-to-face street-based peer relationship increased the risk of anxiety & depression

Home-based social networked peers were protective for depression

Attention needs to be paid to the 10% of homeless youth who lack friends

| Table 2 Network properties of homeless adolescents (n = 136), Hollywood, CA 2008 |
|---------------------------------|-----------------|-----------------|
| All relationships               | Mean | SD |
| Total network size              | 13.46| 8.09 |
| Total “friends”                 | 7.15 | 6.14 |
| Face-to-face relationships      |      |     |
| Street-based peers              | 6.34 | 6.14 |
| Street-based “friends”          | 4.10 | 4.44 |
| Home-based peers                | 2.78 | 3.37 |
| Home-based “friends”            | 1.41 | 2.35 |
| Social networking relationships |      |     |
| Street-based peers              | 0.57 | 1.15 |
| Street-based “friends”          | 0.38 | 0.89 |
| Home-based peers                | 1.54 | 2.21 |
| Home-based “friends”            | 0.59 | 1.22 |
| No “friends”                    | 13   | 9.6 |
Exploring the Potential of Technology-Based Mental Health Services for Homeless Youth: A Qualitative Study

Elizabeth C. Adkins  
Northwestern University

Alyson K. Zalta, Randy A. Boley, Angela Glover, and Niranjan S. Karnik  
Rush University Medical Center

Stephen M. Schueller  
Northwestern University

Homelessness has serious consequences for youth that heighten the need for mental health services; however, these individuals face significant barriers to access. New models of intervention delivery are required to improve the dissemination of mental health interventions that tailor these services to the unique challenges faced by homeless youth. The purpose of this study was to better understand homeless youths’ use of technology, mental health experiences and needs, and willingness to engage with technology-supported mental health interventions to help guide the development of future youth-facing technology-supported interventions. Five focus groups were conducted with 24 homeless youth (62.5% female) in an urban shelter. Youth were 18- to 20-years-old with current periods of homelessness ranging from 6 days to 4 years. Transcripts of these focus groups were coded to identify themes. Homeless youth reported using mobile phones frequently for communication, music, and social media. They indicated a lack of trust and a history of poor relationships with mental health providers despite recognizing the need for general support as well as help for specific mental health problems. Although initial feelings toward technology that share information with a provider were mixed, they reported an acceptance of tracking and sharing information under certain circumstances. Based on these results, we provide recommendations for the development of mental health interventions for this population focusing on technology-based treatment options.
Original Paper

A Mobile Phone–Based Intervention to Improve Mental Health Among Homeless Young Adults: Pilot Feasibility Trial

Stephen M Schueller\textsuperscript{1,2}, PhD; Angela C Glover\textsuperscript{3}, BA; Anne K Rufs\textsuperscript{3}, PhD; Claire L Dowdle\textsuperscript{4}, PhD; Gregory D Gross\textsuperscript{5}, AM, MDiv; Niranjan S Karnik\textsuperscript{3}, MD, PhD; Alyson K Zalta\textsuperscript{1,3}, PhD

\textsuperscript{1}Department of Psychological Science, University of California Irvine, Irvine, CA, United States
\textsuperscript{2}Center for Behavioral Intervention Technologies, Department of Preventive Medicine, Northwestern University, Chicago, IL, United States
\textsuperscript{3}Department of Psychiatry and Behavioral Sciences, Rush University Medical Center, Chicago, IL, United States
\textsuperscript{4}Stepwell Mental Health and Wellness, Boulder, CO, United States
\textsuperscript{5}The Night Ministry, Chicago, IL, United States
The Stepping Stone Project
Project Elements

**Project Description:** All participants received a smartphone preloaded with three mental health apps developed at the Center for Behavioral Intervention Technologies (Pocket Helper, Purple Chill, Slumber Time), a service and data plan for 6 months, and 1 month of support from a therapist in the form of three 30-minute phone sessions, as well as opportunities to contact the therapist outside of these sessions by phone and text.

The therapist has access to a web portal that displays information collected via Pocket Helper affording the opportunity to tailor outreaches to participants’ current needs and issues.
Participant baseline phone usage

• Many participants already had cell phones (71%)
  – Of those who reported having cell phones, 100% reported having a smartphone
  – 48.6% carry the phone all hours of the day
  – 65.7% sent texts a few times a day to every few mins
  – 62.9% receive texts a few times a day to every few mins
  – 54.3% used an app every few minutes
Pocket Helper

JANUARY 8, 2016

Big, deep calming breaths can clear anxiety and improve focus. When you’re feeling stressed remember BREATHE... 1... 2... 3.

How stressful was your day yesterday?

1 2 3 4 5 6 7

Extremely Calm Normal Extremely Stressful

Getting stuff done
Jan 13, 2016: 6:30 PM to 7:30 AM
90 min. interrupted or delayed

11.50 H Sleep Quality: fair Stress: calm

Work
Jan 7, 2016: 10:00 PM to 6:20 AM
0 min. interrupted or delayed

8.33 H Sleep Quality: good Stress: very calm

It’s time to fill out your daily survey.
February 3, 2016: 12:19 PM
Stepping Stone Participants

- 35 participants enrolled
  - Ages 18-21 ($M = 19, SD = .85$)
  - 23 women, 11 men, 1 MTF transgender
  - 7 (20%) Hispanic or Latino
  - 23 (65.7%) African-American, 3 (8.6%) white, 6 (17.1%) mixed race, 1 (2.8%) other, 1 (2.8%) not reported, 1 (2.8%) don’t know

- On average participants had been:
  - Homeless 3 times ($SD = 2.57$)
  - 60.0% currently homeless between 1 month and 1 year
    - $M = 7.3$ months, $SD = 11.3$, Median = 4 months
  - 57.1% longest length homeless between 1 month and 1 year
    - $M = 13.6$ months, $SD = 28.1$, Median = 7 months
Figure 3. Participant flow through recruitment and intervention.

- **Referred**
  - n=45

- **Screened**
  - n=45

- **Ineligible**
  - n=10
  - < 18 years n=1
  - Involved in legal system n=3
  - Alcohol dependence n=1
  - Substance dependence n=4
  - Uninterested in study n=1

- **Eligible**
  - n=35

- Baseline survey
  - Valid: n=28
  - Invalid: n=7

- **1 phone session**
  - n=3

- **2 phone sessions**
  - n=5

- **3 phone sessions**
  - n=20

- **Post survey**
  - Valid: n=23
  - Invalid: n=7
  - Incomplete: n=3
  - Missing: n=2
### Stepping Stone Project - MU006

<table>
<thead>
<tr>
<th>Text Messaging</th>
<th>Survey Responses</th>
<th>Sleep &amp; Stress Graph</th>
<th>Cell History</th>
<th>App Usage</th>
<th>Tip Ratings</th>
<th>Stress</th>
<th>Biggest Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1st, 2016, 9 p.m.</td>
<td>9:00 p.m.</td>
<td>9:30 p.m.</td>
<td>9:00 a.m.</td>
<td>10:00 a.m.</td>
<td>10:50</td>
<td>0</td>
<td>3</td>
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<tr>
<td>April 2nd, 2016, 9 p.m.</td>
<td>9:00 p.m.</td>
<td>9:30 p.m.</td>
<td>9:00 a.m.</td>
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<td>10:50</td>
<td>0</td>
<td>3</td>
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<tr>
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<td>9:30 p.m.</td>
<td>9:00 a.m.</td>
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<td>0</td>
<td>3</td>
</tr>
<tr>
<td>April 4th, 2016, 9 p.m.</td>
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<td>9:30 p.m.</td>
<td>9:00 a.m.</td>
<td>10:00 a.m.</td>
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<td>3</td>
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<tr>
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<tr>
<td>April 6th, 2016, 9 p.m.</td>
<td>9:00 p.m.</td>
<td>9:30 p.m.</td>
<td>9:00 a.m.</td>
<td>10:00 a.m.</td>
<td>10:50</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>April 7th, 2016, 9 p.m.</td>
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<td>9:30 p.m.</td>
<td>9:00 a.m.</td>
<td>10:00 a.m.</td>
<td>10:50</td>
<td>0</td>
<td>3</td>
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<tr>
<td>April 8th, 2016, 9 p.m.</td>
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<td>9:30 p.m.</td>
<td>9:00 a.m.</td>
<td>10:00 a.m.</td>
<td>10:50</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note: The table shows the user's sleep and stress data over a period of time. The therapist can intervene based on the user's reported stress levels.*

**Therapist**

**Intervene**

**Text Message**
Use of Stepping Stone

• 57.1% of participants complete all three 30-minute phone sessions ($M = 2.09$, $SD = 1.22$, Median = 3)

• Participants sent an average of 15.06 text messages ($SD = 12.62$)
  – Therapist sent an average of 19.34 ($SD = 12.70$).

• Session content:
  – Stress management / emotion regulation: 44%
  – Interpersonal issues / skills: 33%
  – Goal setting / problem solving: 23%
Acceptability

- Participants have been enthusiastic about the project
- Participants liked **tips the best**, apps the least
Benefits from Stepping Stone

Table 1. Clinical characteristics of sample at baseline and endpoint (1 month).

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Baseline, mean (SD)</th>
<th>Endpoint, mean (SD)</th>
<th>Probable disorder at baseline, n (%)</th>
<th>Probable disorder at endpoint, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>11.2 (8.0)</td>
<td>10.1 (8.2)</td>
<td>10 (46)</td>
<td>10 (50)</td>
</tr>
<tr>
<td>Post-traumatic stress disorder</td>
<td>32.4 (23.8)</td>
<td>28.2 (23.1)</td>
<td>11 (50)</td>
<td>9 (42)</td>
</tr>
<tr>
<td>Emotion regulation</td>
<td>88.9 (30.6)</td>
<td>87.0 (34.6)</td>
<td>No clinical cutoff exists</td>
<td>No clinical cutoff exists</td>
</tr>
</tbody>
</table>

\(^{a}\)Clinical cutoff for probable depression ≥ 10.

\(^{b}\)Clinical cutoff for probable post-traumatic stress disorder ≥ 33.

- PTSD, \(t(20) = 0.39, p = .70, d = .09\)
- Depression, \(t(19) = .59, p = .56, d = .13\)
- Anxiety, \(t(19) = .16, p = .87, d = .04\)

- Null to small effect sizes across different symptom measures, but large variation
Lessons Learned from Stepping Stone Project

• Mental health care is needed and wanted in this population

• Even with providing phones, technology infrastructure is mixed
  – Wi-Fi Access, Charging, Phone Safety

• Availability of therapist needs to match schedule of youth, which is a challenge

• Many concerns focus on interpersonal issues and emotional regulation
Stepping Stone 2.0

PI: Dominika A. Winiarski (Rush)
Co-PI: Alyson Zalta (UCI)
Co-PI: Niranjan Karnik (Rush)
Co-I: Stephen Schueller (UCI)

Study Team:
Crissy Glover, Randy Boley, Jessica Vergara, Anne Rufa
Project Elements

**Current Project:** All participants in our project receive a smartphone with paid service and a data plan for 6 months. Phones are preloaded with 14 mental health apps developed at the Center for Behavioral Intervention Technologies, and one app with extensive information on resources and services developed by Young Invincibles.

These apps provide easy access to skill-building exercises focused on **stress-management and coping**. Various apps also connect youth to services allowing them to receive real-time emotional support in times of distress, and let them view up-to-date information for homeless youth regarding shelters, health and mental health services, emergency contacts and more.

Participants receive a daily tip and a daily survey asking them to rate their mood and reflect on their challenges. Good engagement with these surveys allows each participant to receive a $5 gift card every two weeks while in the study.

*Data collection ongoing: 100 youth currently enrolled, drawn from six Chicago-based shelters.*
Stepping Stone 2.0 Participants

- 100 participants enrolled, 99 analyzed – 1 lost due to data loss
  - Ages 16-24 (\(M = 20, SD = 1.8\), range 16-24)
  - 39 women, 53 men, 3 MTF transgender, 4 FTM transgender
  - 23 (23.2\%) Hispanic or Latino
  - 57 (57.6\%) African-American, 10 (10.1\%) white, 19 (19.2\%) mixed race, 5 (5.1\%) other, 4 (4\%) not reported or don’t know
  - 75 (75.8\%) straight/heterosexual, 9 (9.1\%) gay or lesbian, 8 (8.1\%) bisexual, 7 (7.1\%) other/refused/don’t know

- On average participants have been:
  - Homeless 3.4 times (\(SD=3.5\)) lifetime, 2.3 times (\(SD=2.7\)) in the past year
  - Average age of first homelessness episode was 17.0 years (\(SD=3.9\))
  - Mean length of current homeless episode was 8.2 months (\(SD=13.3\))
  - 90\% reported a history of physical, emotional or sexual abuse
  - 71\% of youth reported current counseling or therapy
Participant Baseline Phone Access

- A smaller percentage of participants than in our pilot study already had cell phones at the time of enrollment (39.7%)
- Of those who had phones, most had smartphones (89.7%)
Preliminary Acceptability

- Participants complete a follow-up survey 3 months into the study where they can provide feedback (n=48, 48% response rate)
- 6 month follow-up (n=19, 40% response rate)
- Most participants find the study helpful
- In the main study app, Pocket Helper, they like daily surveys and tips best, and the in-app support system least
CONSORT

Phones distributed
n = 100

Phones replaced
n = 23

- Phone had technological issues
  n = 3
    - Water damage
      n = 2
- Phone lost
  n = 8
- Phone stolen
  n = 5
- Phone damaged
  n = 7
  - Unusable due to accidental screen cracks, dropping, or being run over
    n = 3
  - Damaged purposefully due to reported anger issues
    n = 2

Phones with no issue
n = 77
Outcomes/Findings

3 Months

6 months
Common Themes

• Tips most highly accepted across both studies
• Emotion regulation, stress management, and interpersonal difficulties most common challenges
• Collectively, studies illustrate need to:
  – Increase accessibility of interventions
  – Develop more “palatable” intervention tools
  – Explore brief, single time-point interventions
Future Directions

• Expanding technological infrastructure in shelters
  – Wi-Fi, Charging Station, Phone Lockers

• Increasing access to targeted interventions

• Developing “adaptive e-interventions”
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