



## Full length article

## Feasibility of ecological momentary assessment to study mood and risk behavior among young people who inject drugs

Mary E. Mackesy-Amiti\*, Basmattee Boodram

University of Illinois at Chicago, School of Public Health, Division of Epidemiology and Biostatistics, 1603 W. Taylor St., Chicago, IL 60612, USA

## ARTICLE INFO

## Keywords:

Ecological momentary assessment  
 Injection drug use  
 Emotion dysregulation  
 Risk behavior  
 HIV  
 Hepatitis C  
 Homeless

## ABSTRACT

**Aims:** To test the acceptability and feasibility of ecological momentary assessment (EMA) of mood and injection risk behavior among young people who inject drugs (PWID), using mobile phones.

**Methods:** Participants were 185 PWID age 18–35 recruited from two sites of a large syringe service program in Chicago. After completing a baseline interview, participants used a mobile phone app to respond to momentary surveys on mood, substance use, and injection risk behavior for 15 days. Participants were assigned to receive surveys 4, 5, or 6 times per day.

**Results:** Participants were 68% male, 61% non-Hispanic white, 24% Hispanic, and 5% non-Hispanic Black. Out of 185 participants, 8% ( $n = 15$ ) failed to complete any EMA assessments. Among 170 EMA responders, the mean number of days reporting was 10 (SD 4.7), the mean proportion of assessments completed was 0.43 (SD 0.27), and 76% ( $n = 130$ ) completed the follow-up interview. In analyses adjusted for age and race/ethnicity, women were more responsive than men to the EMA surveys in days reporting (IRR = 1.33, 95% CI 1.13–1.56), and total number of surveys completed (IRR = 1.51, 95% CI 1.18–1.93). Homeless participants responded on fewer days (IRR = 0.76, 95% CI 0.64–0.90) and completed fewer surveys (IRR = 0.70, 95% CI 0.54–0.91), and were less likely to return for follow-up ( $p = 0.016$ ). EMA responsiveness was not significantly affected by the number of assigned daily assessments.

**Conclusions:** This study demonstrated high acceptability and feasibility of EMA among young PWID, with up to 6 survey prompts per day. However, homelessness significantly hampered successful participation.

## 1. Introduction

Sharing syringes and other injection equipment among people who inject drugs (PWID) is a significant risk factor for transmission and acquisition of blood-borne diseases including HIV and hepatitis C (HCV) (Boodram et al., 2010; Centers for Disease Control and Prevention, 2012; Hagan et al., 2001; Pouget et al., 2012; Thorpe et al., 2002). The prevalence of syringe sharing decreased in the 1990's as HIV awareness and access to legal sources of sterile syringes increased (Huo et al., 2005; Huo and Ouellet, 2007), but has remained stable in recent years (Neaigus et al., 2017) with high rates among younger PWID (Bailey et al., 2007; Cedarbaum and Banta-Green, 2016; Mackesy-Amiti et al., 2014; Muñoz et al., 2015; Spiller et al., 2015). Models commonly used to explain individual variation in risky behavior include factors such as knowledge, beliefs, attitudes, and behavioral skills as predictors (Bandura, 1994; Fishbein and Middlestadt, 1989; Fisher et al., 2003) or group-level factors such as social norms (Bailey et al., 2007; Davey-Rothwell et al., 2010; Latkin et al., 2013) or social networks (Boodram

et al., 2015; De et al., 2007; Latkin et al., 2010). However, the role of emotion has been largely neglected.

A few studies have examined the relationship between injection risk behavior and negative affect (Mackesy-Amiti et al., 2014; Pilowsky et al., 2011; Stein et al., 2003), and the findings indicate that depression is associated with a greater likelihood of risky injection behavior. Deficits in the ability to regulate emotions may also play a role. Recent studies in Australia (Darke et al., 2004) and the United States (Mackesy-Amiti et al., 2014) have found an association between borderline personality disorder (BPD) and risky injection practices. These findings suggest that emotion dysregulation, a defining feature of BPD (Crowell et al., 2009; Linehan, 1993), may be an important determinant of risky injection behavior. Emotion dysregulation has also been implicated in other types of risky behavior (e.g., sexual risk) (Brown et al., 2012; Miller et al., 2012; Morioka et al., 2018; Steinberg, 2008). Nevertheless, these studies have not examined intrapersonal patterns of behavior and affect, which are imperative to better inform interventions, particularly among young PWID.

\* Corresponding author at: University of Illinois at Chicago, School of Public Health, MC 923, 1603 W. Taylor St., Chicago, IL 60612, USA.  
 E-mail addresses: [mmamiti@uic.edu](mailto:mmamiti@uic.edu) (M.E. Mackesy-Amiti), [bboodram@uic.edu](mailto:bboodram@uic.edu) (B. Boodram).

Cross-sectional studies are inadequate to address how emotion affects risky behavior (Kalichman and Weinhardt, 2001; Mustanski, 2007). Ecological momentary assessment (EMA) is an optimal method for studying dynamic processes using real-time data collection, and for minimizing retrospective recall bias (Ebner-Priemer and Trull, 2009a,b; Kuntsche and Labhart, 2013; Shiffman et al., 2008). It is particularly appropriate for the study of behaviors that rely on intuitive or automatic processes, as opposed to deliberate decision-making (Kahneman, 2003; Strack and Deutsch, 2004). Biases in retrospective reporting of past events and experiences have been demonstrated in a number of empirical studies, and may be exacerbated by mental health problems (Ebner-Priemer et al., 2006). In addition, EMA allows the study of within-person variability that is not possible with cross-sectional observational studies. However, it is important to understand the potential limitations and biases in using this approach. While studies of drug users in treatment have found good levels of compliance (Freedman et al., 2006; Johnson et al., 2009; Serre et al., 2012), little is known about the limitations of this methodology with active drug users (Kirk et al., 2013), or biases that may be related to psychological traits (Courvoisier et al., 2012).

We conducted an exploratory study of mood and injection risk behavior among young PWID using EMA with mobile phones to collect real-time data on injection risk within the context of everyday activities. The primary aim of the study was to test the acceptability and feasibility of EMA to study mood and behavior among young PWID. This included testing for potential biases related to key measures. In addition, we tested the effects of different numbers of daily assessments on participant response patterns. In this paper we report our findings on participation and completion rates, daily response rates, and disruptions caused by events such as arrest or hospitalization. We also examine associations between baseline measures and non-completion, including measures of depression, emotion dysregulation, impulsivity, and receptive syringe sharing.

## 2. Methods

### 2.1. Participant recruitment

The research was conducted at two field sites operated by Community Outreach Intervention Projects (COIP) in Chicago, Illinois, U.S. from February 2016 to June 2017. These locations provide harm reduction services including a syringe services program (SSP), HIV and HCV testing, counseling and case management services, and prevention-focused street outreach. People between the ages of 18 and 35 who injected illicit drugs in the past 30 days were eligible for the study. COIP's SSP clients were invited to participate and were encouraged to refer other PWID to the study. Current injection was verified by trained counselors who inspected for injection stigmata and, when stigmata were absent or questionable, evaluated knowledge of the injection process. Age was verified with a driver's license or a state identification card. Individuals who met the eligibility criteria were offered \$10 to complete a screening questionnaire assessing symptoms of borderline personality disorder (*MacLean Screening Instrument for BPD*) (Zanarini et al., 2003). All participants who completed the screening were invited to participate in the study, regardless of their scores.

### 2.2. Procedures

After the interviewer administered the written informed consent procedure, participants completed a baseline audio computer-assisted self-interview (ACASI) and were compensated \$25. Participants were then trained on the use of the mobile phone app to access the survey and answer the questions. An Android mobile phone (4.4 KitKat OS, retail value ~\$50) was provided, or participants could choose to use their own device. Phones were encrypted, password protected, and the EMA app and study messages were protected with an app lock. A

mobile contact number was provided for participants to ask questions or report technical problems. Study personnel responded promptly to assistance requests during usual operating hours and as soon as possible outside of usual hours to troubleshoot and resolve issues. Participants received mobile surveys for 15 days (including partial first day). At the end of the 15-day observation period, participants were notified to return to the field site for a brief follow-up survey, and to collect their compensation. The study coordinator attempted to locate participants who failed to appear for the final interview to document the reason for non-return. Study procedures were approved by the University of Illinois at Chicago Institutional Review Board.

#### 2.2.1. Ecological momentary assessment

We used the *ilumivu mEMA* platform (*ilumivu, Inc., Cambridge, MA, USA; www.ilumivu.com*), that includes a web site for creating and managing surveys and data, and a mobile phone app to deliver the assessments. The EMA app delivered surveys to the phone for 15 days. We varied the number of daily assessments across participants to examine the impact on participation and completion. We also modified the payment per response to allow all participants to potentially earn up the same amount (up to \$9.00/day) regardless of the assigned number of assessments. Because participants were often known to one another, we assigned participants to condition sequentially rather than randomly. The first participants received 6 daily assessments (condition 1, paid at \$1.50 per response); later participants received 5 daily assessments (condition 2, paid at \$1.80 per response), and then 4 (condition 3, paid at \$2.25 per response). Participants earned a bonus of \$10 for completing at least 80% of the assessments, and an additional \$10 if they completed 90% of the assessments. Participants who used their own mobile phone received \$25 to offset data usage. Participants who used a project phone received a minimum payout of \$25 for returning the phone.

The mEMA app allows responses to be entered on the cell phone even when there is no active internet connection, although an internet connection is needed to upload data. Participants received a notification when each assessment was available, and reminders after 5 min and 10 min if the survey was not accessed. After 20 min the survey became unavailable until the next scheduled assessment. Assessments occurred at random time-points within a set 12-h window, which was decided by the participant at the beginning of the study to accommodate individual schedules (nearly all within 08:00–23:00).

Participants received daily text message updates on their progress showing the number of assessments completed, and the number needed to reach the bonus level. If a participant missed all assessments on any day, he/she received a reminder to contact study personnel for assistance. If a participant failed to complete any assessments for a second consecutive day, the site study coordinator attempted to contact the participant to offer assistance. If a participant failed to complete any assessments for a third day, her/she was notified to return to the field site.

### 2.3. Measures

#### 2.3.1. Baseline assessment

The following measures were included in the baseline ACASI.

**2.3.1.1. Borderline personality disorder.** The *MacLean Screening Instrument for Borderline Personality Disorder* (Zanarini et al., 2003) consists of ten yes/no items. The score is computed as the total number of items positively endorsed. To adapt the instrument for computer-assisted self-administration, we revised item #3, "Have you had at least two other problems with impulsivity..." by presenting a checklist with the question "Have you had any of the following problems with impulsive behavior? [eating binges, gambling or spending sprees, drug or drinking binges, reckless sexual activity, reckless driving, verbal outbursts]" and scoring the item as positive if two or more

Download English Version:

<https://daneshyari.com/en/article/7503015>

Download Persian Version:

<https://daneshyari.com/article/7503015>

[Daneshyari.com](https://daneshyari.com)