

A.A. STERNS, H.L. STERNS. **Experience sampling using technology as a study method for aging and work.** *Gerontechnology* 2016;15(suppl):141s; doi:10.4017/gt.2016.15.s.805.00 **Purpose**

We now have over a decade of utilizing mobile data collection methodologies to study the behavior of older adults. Early studies by Shiffman¹ and Jamner² using this approach, referred to a ecological momentary assessment (EMA), provided teenagers and young adults with personal digital assistants (e.g. Palm Pilots) that supported customized survey applications. These applications focused on looking at smoking and drinking behavior in teenagers and college students. This method of short, frequent, behavior focused surveying is more generally referred to today as experience sampling. **Method** Our early work demonstrated that these techniques could be used successfully to collect data from older adults³. Our first efforts focused on following fixed daily tasks like medication taking and randomized daily sampling of activities of community dwelling older adults. This work was followed by pioneering smartphone-based interventions to improve the recovery of individuals following stroke⁴ and living with heart failure⁵. These interventions are referred to as Ecological Momentary Interventions (EMI). Beginning in 2014, we developed the ESmCapture platform specifically designed to make experience sampling effortless. The name ESmCapture is short for experience sampling mobile data capture. The platform allows a researcher to sign up for an account, create a survey with various question types (y/n, multiple choice, choose all that apply, slider ratings, open end), construct conditional branches (if/then, if/then/else), and schedule the surveys on either a fixed or randomized schedule. The platform also allows for pools of randomly selected questions for questions you don't want to ask every time. In 2015 we began using the ESmCapture platform to study work behavior. Our first study looked at sales associate behavior after hours. Rather than following just a few sales associates, we utilized company issued smart devices from more than half the sales associates to track their activities. Following any afterhours activities participants (age 22 to 58) were asked to indicate if they were completing either a sales or customer service activity, the specific activity type (e.g. check mail, complete a quote, etc.) and the amount of time spent on the activity. We followed behavior for one week and repeated the study 3-months later. **Results & Discussion** We believe this method is ideal for studying work behaviors of older workers and volunteer workers. About 50% of adults 55 and older have smart devices. Devices can be used to sample work attitudes, as well as follow behavior throughout the day and evening. Now it is possible to clearly show what survey data has only hinted at in the past. We can see that older adults are far more engaged in work, have stronger sense of responsibility, and have more commitment to the work they engage in.

References

1. Shiffman S, Stone AA, Hufford MR. Ecological momentary assessment. *Annual Review of Clinical Psychology* 2008;4(4):1-32; doi:10.1146/annurev.clinpsy.3.022806.091415
2. Jamner LD, Shapiro D, Goldstein IB, Hug R. Ambulatory Blood Pressure and Heart Rate in Paramedics: Effects of Cynical Hostility and Defensiveness. *Psychosomatic Medicine* 1991;53(4):393-406
3. Sterns A. Curriculum design and program to train older adults to use personal digital assistants. *Gerontologist* 2005;45(6):828-834; doi:10.1093/geront/45.6.828
4. Sterns AA, Lax G, Sterns H, Allen K, Hazelet S. Improving chronic care management: An iPhone application for post-stroke recovery. Paper delivered at the International Society of Gerontechnology conference in Vancouver, BC, Canada; 2010
5. Goldstein CM, Gathright E, Sterns A, Gunstad J, Redle JD, Dolansky M, Josephson R, Hughes JW. Randomized controlled trial of two telemedicine medication reminder systems for older adults with heart failure. *Journal of Telemedicine and Telecare* 2014;20(6):293-299; doi:10.1177/1357633X14541039

Keywords: work, leisure, volunteering, mobile data collection, experience sampling, eHealth

Address: iRxReminder, 1768 East 25th Street, Suite #308, Cleveland, OH 44114, USA;

E: asterns@irxreminder.com