



## Background

- mHealth interventions that promote smoking cessation depend on high weekly survey completion.<sup>1,2</sup>
- Although prior research indicates survey completion declines over long study periods (>1 month),<sup>3,4</sup> less is known about specific barriers to survey completion.

## Objectives

- Using transcribed interviews, explore smokers' experiences with a well-liked smartphone app designed to prompt and support smoking cessation attempts.
- Identify and address barriers to survey completion in order to optimize surveys for smokers unmotivated to quit.

## Methods

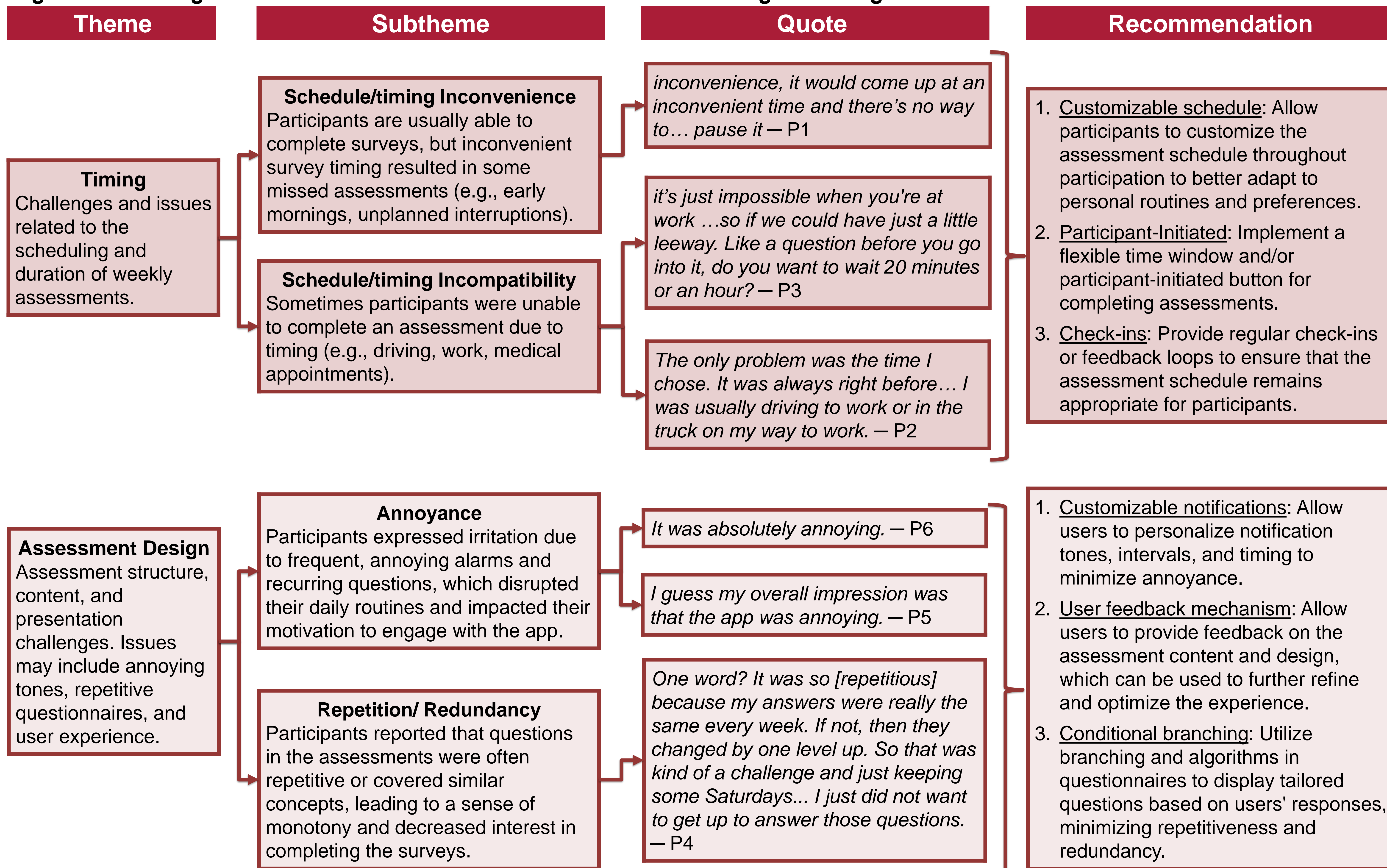
- A 3-group randomized controlled trial enrolled smokers unready to quit within the next 30 days (**N=152**).
- For 182 days, participants received 1 weekly survey and 2 messages delivered/day that were either:
  - Tailored to promote smoking cessation (Phoenix).
  - Random facts unrelated to smoking (Factoid).
- Audio interviews (**N=99**) were conducted at the 26-week follow-up, then transcribed and coded using Nvivo.
- Thematic analysis of barriers to Phoenix and Phoenix+NRT app use (**N=66**). Responses were analyzed together as an initial reading of transcripts showed few differences in response to questions.

**Table 1: Demographic Characteristics by Treatment Group**

Variable	Phoenix % (n) or M±SD	Phoenix+NRT % (n) or M±SD
<b>N</b>	36	30
<b>Survey completion</b>	80.8%±20.1%	80.0%±18.5%
<b>Female</b>	63.9% (23)	73.3% (22)
<b>Age (years)</b>	52.2±12.9	52.3±12.2
<b>Employed</b>	41.7% (15)	46.7% (14)
<b>Rural</b>	16.7% (6)	33.3% (10)
<b>Education (years)</b>	13.7±1.7	12.8±1.5
<b>More than one race</b>	5.6% (2)	10.0% (3)
<b>White</b>	72.2% (26)	66.7% (20)
<b>Black</b>	13.9% (5)	6.7% (2)
<b>Asian</b>	0.0% (0)	0.0% (0)
<b>Pacific Islander</b>	2.8% (1)	0.0% (0)
<b>American Indian</b>	2.8% (1)	16.7% (5)
<b>Other</b>	2.8% (1)	0.0% (0)

## Results

**Figure 1: Challenges and Recommendations for Assessment Scheduling and Design**



## Discussion

- While the Phoenix app was well-liked overall, several specific barriers were identified that could increase future intervention participation.
- Enabling participants to easily customize timing and notifications could enhance survey completion rates and app perception.
- Increasing convenience of survey timing may be feasible and beneficial for studies that employ only weekly surveys.
- A balance between timing and design flexibility and methodological rigor is crucial. Yet, increased flexibility could potentially enhance app engagement and higher survey completion rates.

## References

- Businelle MS, Ma P, Kendzor DE, Frank SG, Vidrine DJ, Wetter DW. An Ecological Momentary Intervention for Smoking Cessation: Evaluation of Feasibility and Effectiveness. *J Med Internet Res*. 2016;18(12):e6058. doi:10.2196/jmir.6058
- Businelle MS, Ma P, Kendzor DE, Frank SG, Wetter DW, Vidrine DJ. Using intensive longitudinal data collected via mobile phone to detect imminent lapse in smokers undergoing a scheduled quit attempt. *J Med Internet Res*. 2016;18(10):e6307.
- Ono M, Schneider S, Jungbaenel DU, Stone AA. What affects the completion of ecological momentary assessments in chronic pain research? An individual patient data meta-analysis. *J Med Internet Res*. 2019;21(2):e11398.
- Rintala A, Wampers M, Myin-Germeys I, Viechtbauer W. Response compliance and predictors thereof in studies using the experience sampling method. *Psychol Assess*. 2019;31(2):226-235. doi:10.1037/pas000066

This work was supported by the Oklahoma Tobacco Settlement Endowment Trust (TSET) grant 092-016-0002, and used the Mobile Health Technology Shared Resource which receives funding from the NCI Support Grant P30CA225520 awarded to the Stephenson Cancer Center.