



Smartphone-Based Tobacco Cessation Interventions with American Indians in Oklahoma

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Land Acknowledgement

OSU sits on lands promised to the Muscogee (Creek) Nation in exchange for their ancestral homelands during the 1830s removal period. Originating in the Great Lakes area and migrating south and west, the Iowa were placed by an 1883 Executive Order in the area just south of present-day Stillwater, which was established illegally by "boomers" in 1884. Just prior to the April 22, 1889 land run, the first of seven official land runs, President Harrison proclaimed the lands "unassigned" and open for settlement.



Learning Objectives

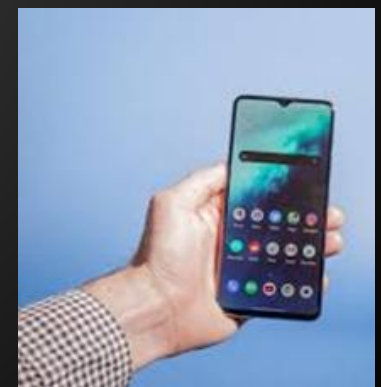
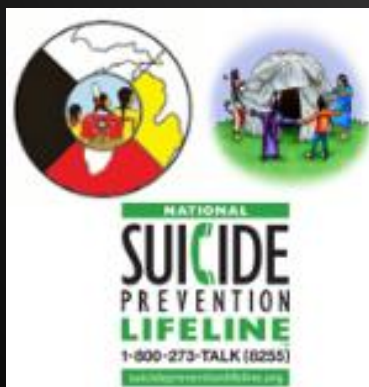
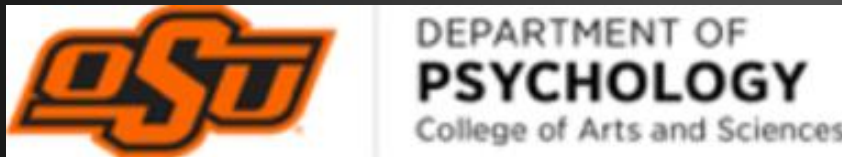
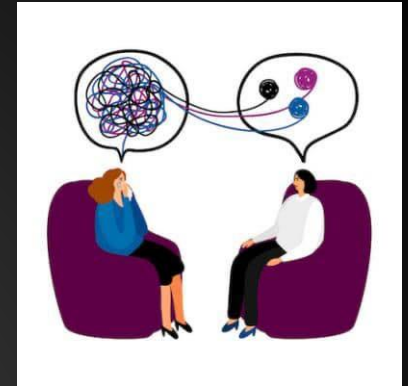
1. Identify different commercial tobacco cessation strategies for American Indians who want to quit smoking, including cessation strategies delivered via smartphone applications (apps).
2. Recognize unique cultural differences (e.g., use of traditional tobacco) among some American Indians, which may inform future modification of smoking cessation apps.
3. Apply strengths-based approaches (e.g., social support, messages from family/tribal members) to reduce tobacco-related health inequities among American Indian populations.

Outline

- My background
- Background
 - AI smoking rates
 - AI populations in Oklahoma
 - Need for novel smoking cessation approaches
- Current study
 - Parent project
 - Diversity supplement
 - Preliminary findings
 - COVID-19 impacts
 - Future directions
- Resources & references
- Q&A



My Context





Background

- Despite decreases in smoking rates over the past 50 years, there are approximately 36.5 million smokers in the U.S.
- Nearly one in three American Indian/Alaska Natives (AI/ANs) are smokers.
- AI/ANs experience smoking-related cancers (e.g., lung cancer) and smoking-related mortality at disproportionately high rates.
- While many AI/AN smokers want to quit, quit rates are lower in these populations compared to other ethnic/racial groups.

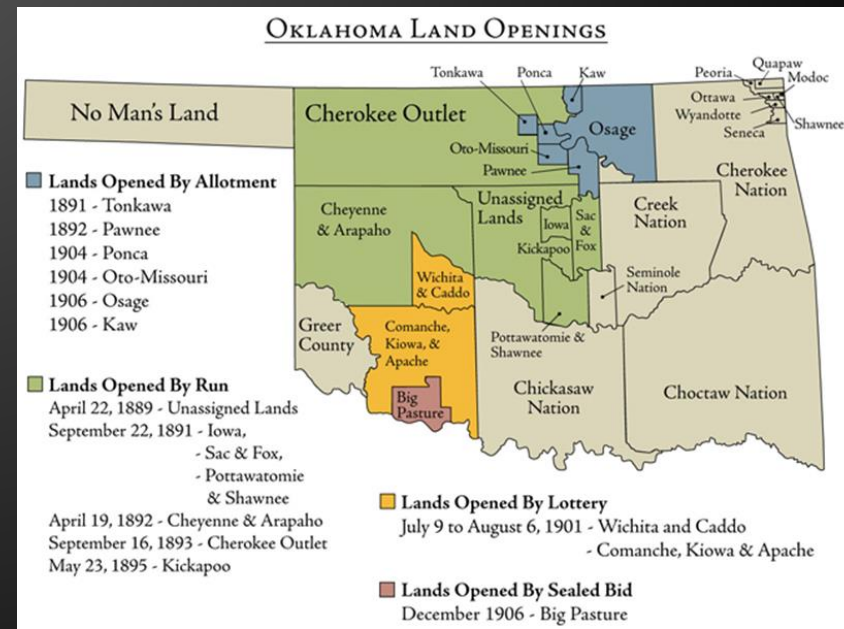


Background (CONT'D)

- Lower quit rates among AI/ANs may be related to earlier smoking initiation, which is associated with greater nicotine dependence and more difficulty quitting.
- The infiltration of commercial tobacco use (vs. traditional tobacco) into cultural events may also play a role.
- Additional barriers for quitting among AI/ANs include social contexts, stress, cessation medication concerns, provider mistrust, and lack of access to evidence-based, culturally relevant treatments.

Background (CONT'D)

- OK is home to 39 federally recognized tribes, has the 3rd largest population of AI/ANs (by state) in the U.S., and has the largest number of AI college graduates
- 3 Tribal colleges
- Tend to be more bi-cultural than other Native populations
- Prior to 2020, 1 true “reservation” along with Tribal nations
- *McGirt v. Oklahoma*





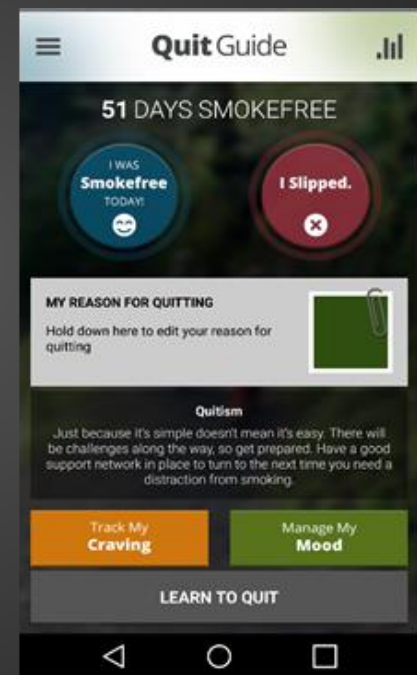
Background (CONT'D)

- Highly flexible, low burden technology-based treatments may overcome barriers (e.g., transportation, time) for quitting smoking.
- Such treatments may be especially useful in OK (21% smoke; 5th highest in the U.S.), where there are multiple groups with increased smoking prevalence
 - 17% of Oklahomans live in poverty
 - 29.2% of Als in OK smoke

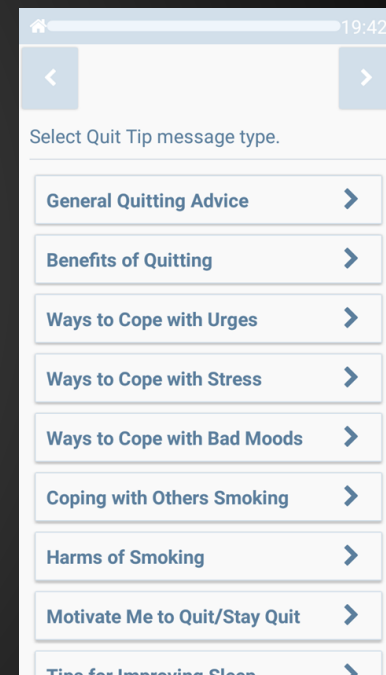
Smart-T3 Overview (R01CA221819; PI: Businelle)

- Ongoing smoking cessation randomized clinical trial (RCT)
- N = 450 low-income male & female smokers who want to quit smoking; randomized into 1 of 2 groups
- Uses mobile health technology & ecological momentary assessments
- Smart-T3 algorithm tailors treatment messages in real-time based on smoking lapse risk factors (e.g., stress, smoking urge, and cigarette availability)

NCI QuitGuide



Smart-T3



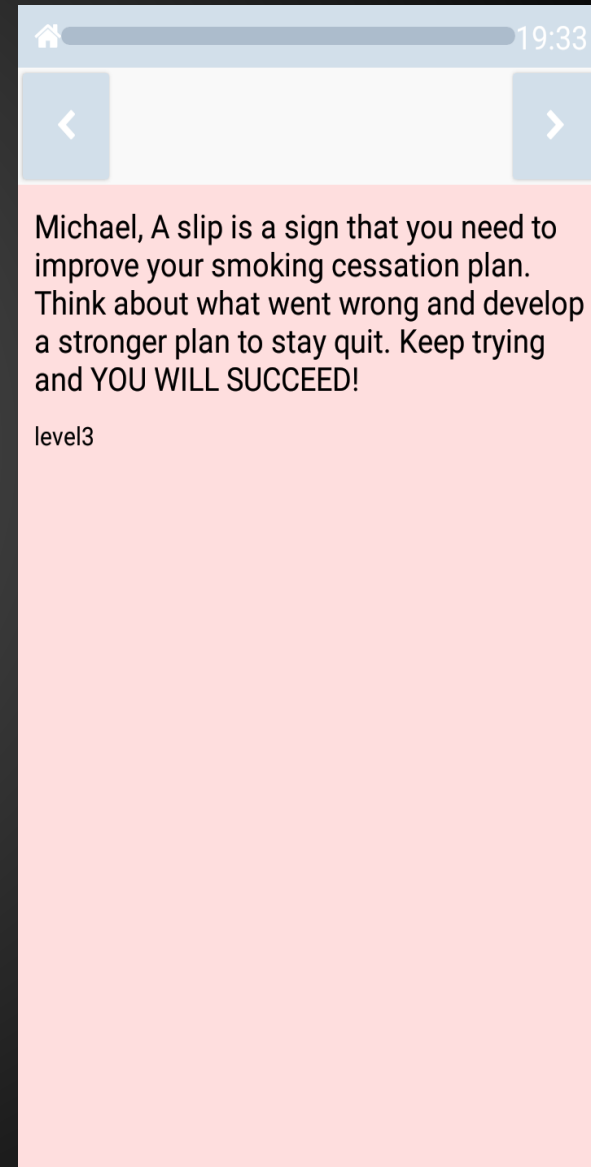
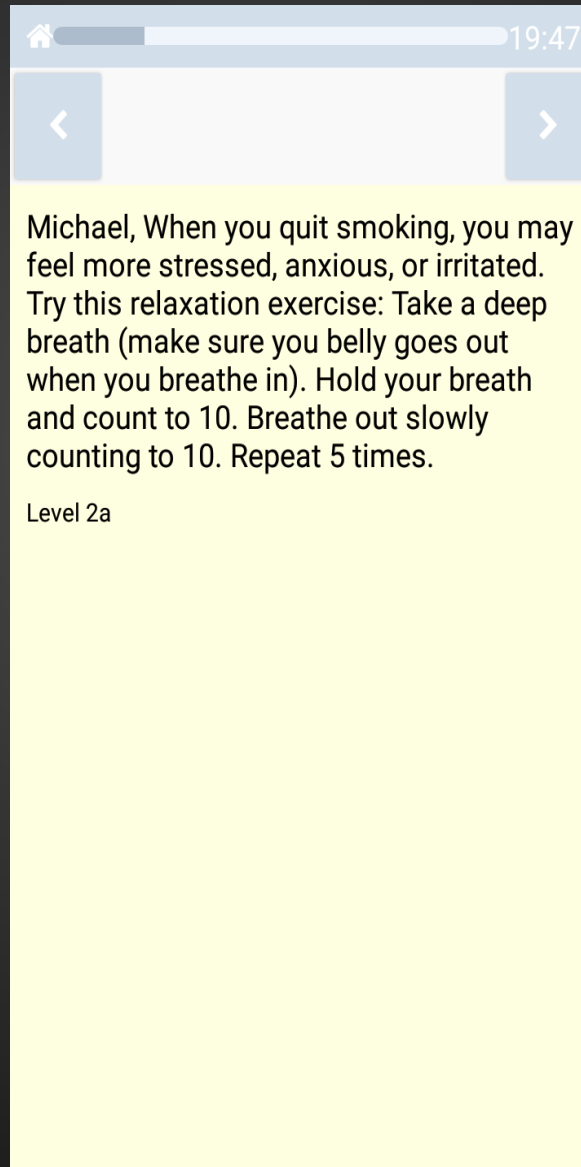
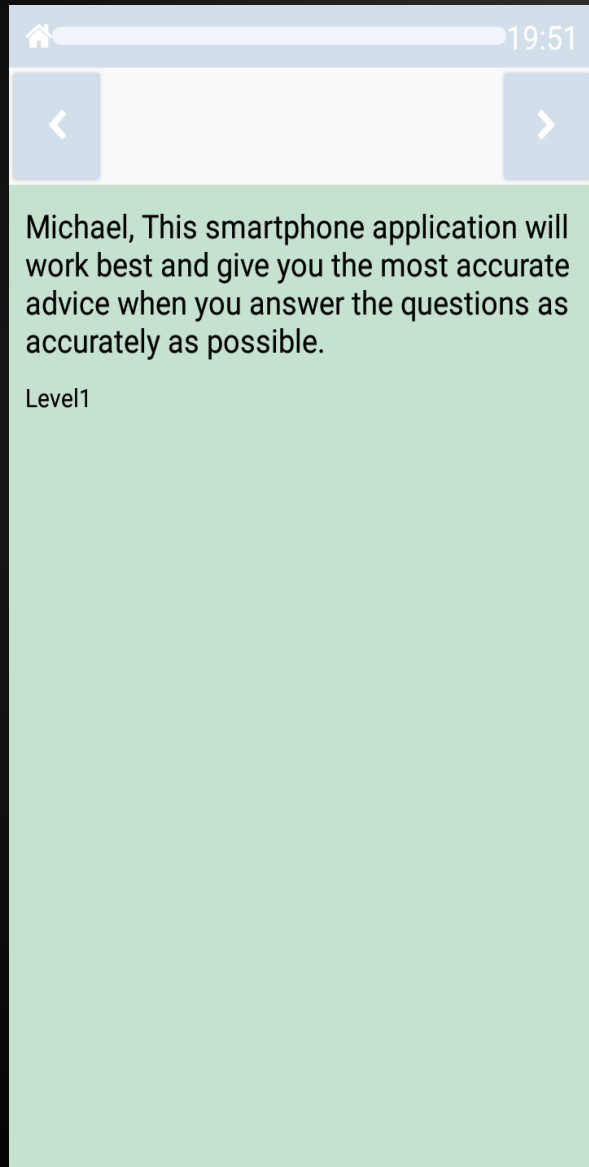
Smart-T3 Overview (R01CA221819; PI: Businelle) cont'd



- **Topic:** Smart-T3 vs NCI QuitGuide; 6 month intervention; Bedfont iCO monitors to assess smoking status 3x per week
- 27-week follow-up call
- **Planned N** = 450 (current n = 151)
 - » Medication refill request
- **Status:** COVID-19 stopped new enrollments for 2 months.



Personalized Quit Tip Examples



Diversity Supplement

(R01CA221819-01A1S1; PI: Cole)



- December 2019 – January 2022
- AI sample (proposed n = 30) who participate in the intervention phase
- Explanatory sequential mixed methods study design
- **Aim 1:** Examine the efficacy, likability, and feasibility of the Smart-T3 and NCI QuitGuide apps in AI smokers who want to quit.
- **Aim 2:** Conduct qualitative interviews with AI participants from the Smart-T3 and NCI QuitGuide groups to solicit ideas on culturally specific components to modify the apps.
 - Features congruent/incongruent with cultural values
 - Traditional/ceremonial tobacco
 - Ideas to incorporate AI culture into the apps





Method

- A sequential explanatory mixed methods study was conducted with AI participants (n=5).
- They completed a cultural interview to assess their experiences with the NCI QuitGuide (n=2) and Smart-T3 (n=3) apps following the 26-week intervention.
- Two items from the final survey, which assessed likelihood of recommending the app to others and self-perception of survey completion, were analyzed.



Preliminary Findings

- Participants were male (80%) and 46 years old (SD=14.2).
- Participants were somewhat likely, on average, to recommend the app to a friend who smokes for quitting.
- Participants reported their completion rate either stayed the same (n=2) or decreased (n=3) during the 26-week study period.
- Initial findings indicate that participants' ideas for culturally modifying the apps included:
 - **Incorporate video messages from tribal/family members** (n=5)
 - **Additional reminders/tips** (n=3)
 - **Social support/on-demand counseling for cessation** (n=3).
- **Technology issues** (n=2) were an identified barrier to using the apps.



Emerging Themes & Illustrative Quotes

- Future App Modification
 - **Video Messages from Tribal/family members**
 - *“People want to watch seeing other people talk about... why they quit smoking and what it really does if you don’t quit smoking. Messages of pros and cons [of quitting] and how it [smoking] takes the lives of families.”*
 - *“Maybe if the app had a feature, you know, in the beginning I could set it up and have my loved ones record a message. And then, every now and then, maybe I slip up, and it comes back and plays a message from my daughter... ‘I love you, Dad. You can do this!’”*



Emerging Themes & Illustrative Quotes

- Future App Modification
 - **Additional Reminders/Tips**
 - *“Those random [questions] the app ask[ed] about whether you were staying on top of everything and being honest... I feel like that prompt happening after the quit date would be a good benefit.”*
 - *“...Being able to see my progress on... tracking the numbers... that would have been another tool for me to use for progress, or even the lack thereof, would be a definite advantage, I believe.”*



Emerging Themes & Illustrative Quotes

- Future App Modification
 - **Social Support/On-Demand Cessation Counseling**
 - *“A chat session or texting back and forth with an instructor would have been more helpful. When I tried calling staff, all I ever got was [to] leave a message, and then I had to wait, like a day or two, to get a response.”*
 - *“Being able to submit feedback on how you were coping that day, for me, that would have been very helpful. Just answering the questions, made you more aware of what your patterns were and your coping skills. But I would have liked to have the opportunity to state what my mind was going through at the time.”*



Emerging Themes & Illustrative Quotes

- Barriers to App Use
 - **Technology Issues**
 - *"It was on a[n] Android device; I use an iPhone, so it was on a separate device. There [were] quite a few times that... if I hit the wrong button that I wasn't used to on Android..., it would... automatically stop my survey. It [the app] would re-open... and cut-off the survey I was doing."*
 - *"The option to have it on their own device..."*



Emerging Themes & Illustrative Quotes

- **Traditional Tobacco Use**

- *"I... burn sage for smudging and sweet grass, and I put out tobacco when I pray for help."*
- *"...if you're going on a trip, you always set out tobacco on the north side of the tree and say a prayer that you'll return safely. When you go to a powwow and you go through grand entry, they give you tobacco before you enter the arena."*
- *"...not to be cliché, but the idea to be around a campfire, having a talk, being... you know, truthful with other people to ease the moment kind of thing. In my mind, that would feel very ceremonial."*



COVID-19 Impacts

- COVID-19 has impacted recruitment and retention rates of the parent study and of AIs in the current study.
 - COVID-19 stopped new enrollments for 2 months.
 - Parent study proposed N = 450 (current N = 151)
 - Current study proposed N = 30 (current N = 5)
- COVID-19 has disproportionately impacted AI/AN communities in rates of contraction, hospitalization, and death.



COVID-19 Response

- Dr. Businelle and HPRC research team have modified the parent study protocol to allow fully remote enrollment
 - Mail participants all study materials, including phone & portable iCO device (Bluetooth)
- Working on efforts to continue helping AI smokers who want to quit smoking
- Grant application currently under review (PIs: Businelle & Zvolensky; Co-I: Cole) to study mental health impacts of COVID-19 using a smartphone app (EASE app) in a diverse sample, including proposed N=200 AI adults

Ongoing Study Recruitment



- You may qualify for this study if you:
 - Are 18 years or older
 - Are a current daily smoker
 - Are willing to quit smoking
 - Speak and read in English
 - Live in Oklahoma
- Those who qualify for the study can enroll online or attend a 1-person visit at the OU Health Sciences Center.
- All participants will receive **free smoking cessation medications** (nicotine patch and gum/lozenges) and a smoking cessation app.
- Participants will use their personal smartphone or **will be loaned a smartphone** to complete daily surveys.
- Participants will be provided with **Mastercard giftcards** as compensation.



- To be screened for eligibility, please call: **(405) 271-1803** or follow the link below to complete the survey online
- <https://oksmokerstudy.com>



Future Directions

- Apply for a larger grant mechanism (5-years)
 - Use findings from current project as pilot data
 - Develop a prototype of the culturally tailored app for AI smokers who want to quit
 - Incorporate group-based smoking cessation behavioral counseling via telehealth
 - Multi-site to increase reach and generalizability
- Test the app prototype

Pandemic Silver Linings

Oklahoma's Native American nations step up to protect their own



Citizen Potawatomi Health Services workers give COVID-19 vaccinations on Jan 22. [Citizen Potawatomi Nation]

New relief bill includes \$20B for tribes



"Tribal advocates, tribal leaders have done a tremendous job of conveying the priorities that ongoing need for relief in Indian Country given the disproportionate impacts in our communities."



Smoking Cessation Resources

- CDC's Tips From Former Smokers national tobacco education campaign
 - <https://www.cdc.gov/tobacco/campaign/tips/groups/american-indian-alaska-native.html>
- CDC-recommended tobacco prevention and control programs and policies
 - https://www.cdc.gov/tobacco/stateandcommunity/best_practices/index.htm
- American Indian Tobacco Survey Implementation Manual
 - https://www.cdc.gov/tobacco/data_statistics/surveys/american_indian/pdfs/ai_ats.pdf
- How We Can Protect Children From Second Hand Smoke
 - https://www.cdc.gov/tobacco/basic_information/secondhand_smoke/protect_children/native-american-population/
- Native American Action Plan: Addressing Tobacco Abuse Among Pregnant & Postpartum Women
 - <http://www.tobacco-cessation.org/PDFs/NativeAmericanActionPlan.pdf>

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Migwétch (thank you)!



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Questions?

