

Mobile and Digital Health: Opportunities for Impacting Diabetes Among Native Communities

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Colorado School of
PUBLIC HEALTH

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CREATING AND CURATING
DIGITAL HEALTH SOLUTIONS

Objectives

- Consider the evidence for:
 - mobile and digital solutions for diabetes prevention and self-management
 - using mobile solutions for health promotion more broadly among diverse Native communities
- Where are the gaps and opportunities?
- What are key considerations in addressing gaps and pursuing opportunities?



References

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What does the evidence show?

Factor	Web	SMS/Text	Social Media	Apps
Antecedent to behavior change	✓	✓	✓	
Behavior Change	✓	✓	✓	✓
Biomedical outcome	✓	✓	✓	✓
Research Synthesis/Meta-Analysis	✓	✓	✓	✓
Impacts disparities		✓		

What does the evidence show?

Factor	Sensors	Virtual Reality	Artificial Intelligence	Machine Learning
Antecedent to behavior change	✓	✓		✓
Behavior Change	✓	✓		
Biomedical outcome				
Research Synthesis/Meta-Analysis				
Impacts disparities				

What are barriers to mHealth among Native Populations?

- Gaps in informed consent
- Challenges to data management (data confidentiality, participant privacy, data sharing)
- Social implications
- Failure to appropriately adapt for diverse groups
- Failure to consider appropriate technology

Notable examples of mobile and digital solutions with Native populations

- TXTTaofiTapaa
 - Samoa and smoking cessation
 - Iterative evaluative process
 - Messages theory based
 - Linguistic and cultural nuances

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Preprints (earlier versions) of this paper are available at <http://preprints.jmir.org/preprint/9033>, first published Sep 25, 2017.

This paper is in the following e-collection/theme issue:
✧ Text-messaging (SMS)-Based Interventions ✧ Focus Groups and Qualitative Research with Users
✧ Design and Formative Evaluation of Mobile Apps ✧ Smoking Cessation ✧ Formative Evaluation of Digital Health Interventions

Article Cited By (0) Tweetations (6) Metrics

Original Paper

Assessing the Cross-Cultural Adaptation and Translation of a Text-Based Mobile Smoking Cessation Program in Samoa (TXTTaofiTapaa): Pilot Study

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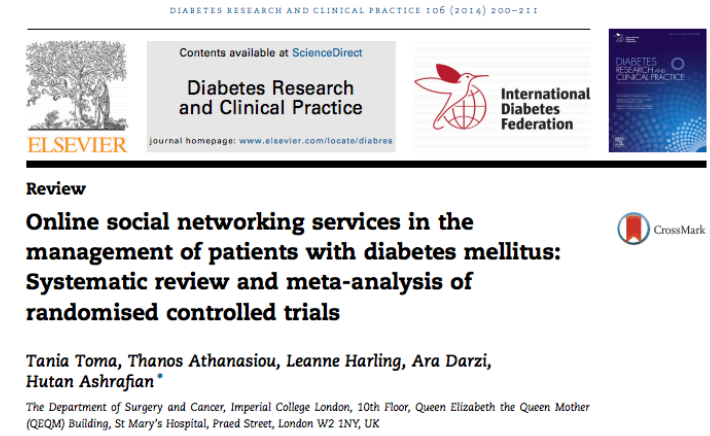
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Notable examples of mobile and digital solutions with Native populations

- Texting 4 Sexual Health
 - NW Portland Area Indian Health Board and OHSU with We R Native
 - 24 test messages on sexual health
 - Showed increases in condom use
- CRC Screening
 - Southcentral Foundation in Anchorage Alaska—Tribally owned primary care
 - 3 text messages up to 1 month apart
 - Showed increases in CRC Screening

Notable examples of mobile and digital solutions with Native populations

- Meta-analysis of Social Networking Sites
- Included online only versus hybrid
- The hybrid programs produced the greatest effects
 - Consistent declines in HbA1c for Type II Diabetes
 - Exposing patients to online support groups



Opportunities for impact on Diabetes among Native populations with mobile solutions


- What do we know about what works for Diabetes Self-Management in particular using mobile solutions?
 - Reminders for blood glucose measurement
 - Medication reminders
 - Physical Activity
 - Weight management
- Where are the gaps? Adaptations and tailoring for Native communities...
 - SMS?
 - Social Media?
 - Apps?
 - Sensors?

Opportunities for impact on Diabetes among Native populations with mobile solutions

- Regardless of modality we need careful consideration of:
 - How to reach people consistently and over time
 - How to engage them once we do connect
 - How/whether to engage others within social/family and community networks
- We have underutilized hybrid programs
 - How might we link a mobile solution to existing or new in person programs?

Opportunities for impact on Diabetes among Native populations with mobile solutions

U.S. Department of Health and Human Services

 **Indian Health Service**
The Federal Health Program for American Indians and Alaska Natives

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Special Diabetes Program for Indians



Special Diabetes Program for Indians

- About
- SDPI Community-Directed Grant Program
- SDPI Outcomes System (SOS)
- Audit/SOS Login
- DP/HH Grant Resources
- SDPI Toolkits
- Report to Congress
- Fact Sheets
- Grantee Resources
- Program Spotlights
- Contact Us
- Education Materials and Resources (Online Catalog)
- Division of Diabetes Treatment and Prevention


In response to the diabetes epidemic among American Indians and Alaska Natives, Congress established the SDPI grant programs in 1997. This \$150 million annual grant program, coordinated by [IHS Division of Diabetes](#) with guidance from the [Tribal Leaders Diabetes Committee](#), provides funds for diabetes treatment and prevention to IHS, Tribal, and Urban Indian health programs across the United States.

SDPI Updates

[New Video! Changing the Course of Diabetes in Indian Country](#)  

Check out and share this new video, produced in collaboration with ADA TV. It highlights SDPI and the remarkable improvements that are changing the course of diabetes in Indian Country. Dedicated to all SDPI grantees and featuring the Chickasaw Nation Diabetes Program, the video premiered at the 78th American Diabetes Association Scientific Sessions in Orlando, FL, June 22–26, 2018. (Running time: 5:40)

Thursday, October 18, 2018

Upcoming Events 

[Upcoming Live CME/CE Education](#)
November 14th @ 3 pm EST
Caring for People with Diabetes:
Why Should You Be Concerned
About Hepatitis C?
Daniel Marino, MD
Chief Medical Officer
Tucson Area IHS

[SDPI General Q&A](#)
October 17th @ 3pm EDT

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Special Diabetes Program for Indians

- About
- SDPI Community-Directed Grant Program
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Diabetes Prevention Program Toolkit

Module 1: Getting Started



Dr. Sharon Stanphill, Health Director
Cow Creek Band of Umpqua Tribe of Indians

[Inspirational Video, the Diabetes Prevention Program](#)

(Running time: 5:25)

Welcome!



- Module 1: Getting Started
- [Module 2: Identifying, Recruiting, and Retaining Participants](#)
- [Module 3: DPP Implementation](#)
- [Module 4: Build a Sustainable Program](#)
- [Appendices](#)
- [Acknowledgments](#)

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Opportunities for impact on Diabetes among Native populations with mobile solutions

- How might we build on “what works” in more traditional interventions?
- What are the hallmarks of effective interventions among Native populations?
 - Community-based, community-centric
 - Culturally tailored
 - Narrative
 - Role Models (Peer and Community)

Opportunities for impact on Diabetes among Native populations with mobile solutions

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Intervention Research to Improve
Native American Health

SEARCH

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Funding Opportunities

Funding Opportunities

The Opportunity Announcements listed below represent a selection of extramural funding associated with Intervention Research to Improve Native American Health.

- ▶ Intervention Research to Improve Native American Health (R01 Clinical Trial Optional) (PAR-17-496)
- ▶ Research to Improve Native American Health (R21 Clinical Trials Optional) (PAR-17-464)
- ▶ Research to Support the Reduction and Elimination of Mental Health Disparities (Admin Supp) (PA-17-165)
- ▶ Collaborative Minority Health and Health Disparities Research with Tribal Epidemiology Centers (R01 Clinical Trial Not Allowed) (PAR-17-484)
- ▶ Collaborative Minority Health and Health Disparities Research with Tribal Epidemiology Centers (R21 Clinical Trial Not Allowed) (PAR-17-483)

Opportunities for impact on Diabetes among Native populations with mobile solutions

— Curriculum Topics

The current DPP program is a year-long structured intervention in which participants learn how to make lifestyle changes to reduce their risk for type 2 diabetes.

Months 1 – 6

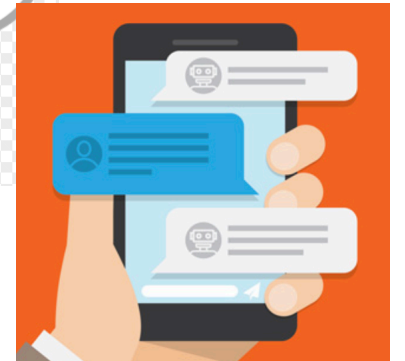
All 16 curriculum topics below should be covered in the first six months.

- | | |
|--|---|
| 1. Welcome to the DPP Program | 9. Problem Solving |
| 2. Self-Monitoring Weight and Food Intake | 10. Strategies for Healthy Eating Out |
| 3. Eating Less | 11. Reversing Negative Thoughts |
| 4. Healthy Eating | 12. Dealing with Slips in Lifestyle Change |
| 5. Introduction to Physical Activity (Move Those Muscles) | 13. Mixing Up Your Physical Activity: Aerobic Fitness |
| 6. Overcoming Barriers to Physical Activity (Being Active – A Way of Life) | 14. Social Cues |
| 7. Balancing Calorie Intake and Output | 15. Managing Stress |
| 8. Environmental Cues to Eating and Physical Activity | 16. Staying Motivated, Program Wrap Up |

Months 7 – 12

At least one session should be offered in each of the six remaining months. Programs may elect to offer more sessions to participants needing additional support. Lifestyle coaches can choose which of the following topics to present and can do so in any order they wish.

- | | |
|--|--|
| 1. Welcome to the Second Phase of the Program | 9. Stress and Time Management |
| 2. Healthy Eating: Taking It One Meal at a Time | 10. Healthy Cooking: Tips for Food Preparation and Recipe Modification |
| 3. Making Active Choices | 11. Physical Activity Barriers |
| 4. Balance Your Thoughts for Long-Term Maintenance | 12. Preventing Relapse |
| 5. Healthy Eating With Variety and Balance | 13. Heart Health |
| 6. Handling Holidays, Vacations, and Special Events | 14. Life With Type 2 Diabetes |
| 7. More Volume, Fewer Calories (Adding Water, Vegetables, and Fiber) | 15. Looking Back and Looking Forward |
| 8. Dietary Fats | |

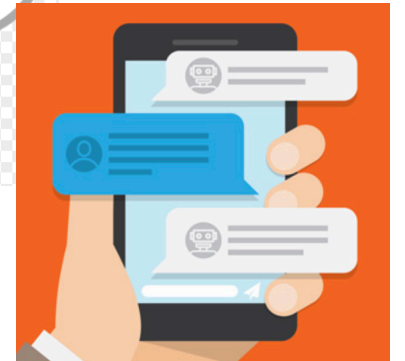


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- Look at your phone
 - What do you use the most?
 - With whom?
 - Why?
 - Under what circumstances?
- How might this translate for interventions?
- Do these ideas suggest stand alone?
- Hybrid?



Thank you! Sheana.bull@ucdenver.edu



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