The *i*-Obesity Course: Delivering an evidence-based intervention in **YOUR** community

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The speaker reports NO actual or potential conflict of interest in relation to this research or presentation associated with:

- Grant Funding
- Paid Speaker’s Bureau
- Private Financial Support from Companies
- Paid Consultant Services
- Other Financial Gains

I am currently the Primary Investigator for an ongoing funded grant through the University of Arizona and the Rural Health Professions Program: Office of the Arizona AHEC, Tucson, AZ, USA.
At the conclusion of this presentation, participants will be able to:

1. Define the CDC reported prevalence of adult obesity in the U.S. General Population versus the U.S. Rural Population.

2. Describe the Rural Healthy People 2020 health priorities, and common barriers to access quality healthcare services in rural communities in the U.S.

3. Discuss the implementation and outcomes of a university-based technology delivered, intensive behavioral intervention program (The i-Obesity Course) in rural and medically underserved communities, delivered in partnership with local primary care providers across northern Arizona.
The purpose of this intensive behavioral intervention program, is to explore the effectiveness of an internet-delivered, evidence-based obesity management program for overweight and obese adults, who live in rural and medically underserved communities.
In 2014, 34.9% of U.S. adults were overweight or obese, (CDC, 2015)

- Obesity, now classified as a chronic disease, is implicated in greater than 3.4 million premature deaths annually worldwide (WHO, 2014)

- Obesity, a multi-faceted disease, negatively impacts health-related quality of life, and places an enormous cost burden on the U.S. healthcare system: > 6.2 billion annually in associated costs (CMS, 2012)
A review of the Rural Healthy People 2020 Report, identifies diabetes, depression, poor nutrition, lack of physical activity, age, and lack of community health education as priorities in rural communities.

All of these priorities have a relationship to increased obesity prevalence, and the HIGHEST priority of access to health services.
PARTICIPANTS

- This randomized-controlled (RCT), single arm study, has enrolled (170) participants, and had (153) participants complete the program as of 5/29/2017 (90% completion rate)
- Seventy-five (75) were randomly assigned to the intervention group (44%)
- Ninety-five (95) were randomly assigned to the control group (56%)
- Seventeen (17) participants did not complete the program (10%)
- All participants were referred to the study by their PCP, and had a BMI of > 25/kg/m², and volunteered to participate in a supervised weight-loss collaborative program
- Inclusion in this study required internet access, which is a limitation in rural and medically-underserved communities
Demographic Questionnaire; Impact of Weight on Quality-of-Life (IWQOL-Lite); and Hospital Anxiety and Depression Scale (HADS).

Five online learning modules which focus on Cognitive-Behavioral Interventions (CBI), related to weight loss and weight maintenance.

Intervention group receives weekly university-based PCP interventions that augment online content from CBI trained providers.

Control group receives access to online weight loss and weight management content using EBP guidelines for PCP’s.

Both groups remain under the care and supervision of their local PCP who takes all biophysical measurements and reports patient outcomes at monthly visits.
STATISTICAL ANALYSIS

- T-tests
- Cross-tabulation
- $\chi^2$
- ANOVA
- Linear regression coefficients
- Logistic regression models
RESULTS

- Intervention Group Sample size = 71
- 72% Female, average age of 67
- Mean BMI 38.2 kg/m²
- Higher BMI values were significantly *negatively* associated with health-related quality of life measures (IWQOL)
- The prevalence of anxiety (42.4%) and depression (34.9%) at baseline, as measured by the HADS, was significantly high when compared to the US general population (18.1% and 6.9%, respectively) NIH, 2012
Negative Relationship between BMI and IWQOL-Lite Measures

For each BMI Increase of One the IWQOL-Lite Score Decreased by:

- Physical Function: 1.6
- Self-esteem: 1.5
- Public distress: 2.6
- Work: 1.4
## TWO Cohorts: Average 3-Month Outcomes

<table>
<thead>
<tr>
<th>Measure</th>
<th>Intervention Group</th>
<th>Control Group</th>
</tr>
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<tbody>
<tr>
<td>Average Decrease in BMI</td>
<td>2.7% (3.6 kg)</td>
<td>1.9% (2.4 kg)</td>
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<tr>
<td>HADS Measure Improvements</td>
<td>$p &lt; .05$ decreased depression and anxiety</td>
<td>$p &lt; .05$ decrease in depression</td>
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<tr>
<td>Satisfaction w/ CBI program</td>
<td>91%</td>
<td>68%</td>
</tr>
<tr>
<td>Willingness to persist</td>
<td>87%</td>
<td>72%</td>
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Implications for Practice

- With the prevalence of obesity in the U.S. society, the use of enhanced technological interventions may demonstrate greater effectiveness in rural and medically underserved populations.
- Rural PCP’s, partnering with university-based resources, may be able to enhance health outcomes for adults who are overweight or obese within the local community.
Implications for Practice

- Greatest reported satisfaction by participants was their ability to remain in their community supervised by their local PCP.

- Primary care providers, the largest group managing the obesity epidemic, report difficulty in achieving optimal clinical outcomes.

- Results from this pilot study demonstrate outcomes consistent with, or exceed those reported by face-to-face PCP visits.
This study identified weight loss outcomes in overweight and obese adults consistent with, or exceeding published reports of face-to-face PCP visits.

Statistically significant improvements ($p<.05$) were found among the measurements related to weight loss, psychosocial (HADS) and physical improvement, as well as overall health-related quality of life (IWQOL) in adults who were overweight or obese.