



Overcoming Barriers: Using Technology and Behavioral Interventions to Improve Obesity Care in Rural Communities

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Study Overview

- This obesity intervention program explored the effectiveness of an Internet-delivered, intensive behavioral program for adults living in rural or medically underserved communities in the American Southwest.
- Using the principles of adult learning theory and Intensive Behavioral Interventions results from this study has demonstrated effectiveness for adult rural community dwellers who are overweight or obese, or simply attempting to prevent further weight gain.

Presenter Disclosure Notice

- Dr. Douglas Sutton has no actual or potential conflict of interest in relation to the research that was conducted to prepare and present this presentation at the STTI 29th Int'l Nursing Research Congress.

Participant Learning Objectives

Recall the WHO reported prevalence of Global Overweight & Obesity in 2016.

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

Discuss the implementation and outcome measures of a university-based, technology delivered, intensive behavioral intervention program delivered in partnership with local primary care providers in rural and medically-underserved communities.

Purpose of the Study

- To explore the effectiveness of an Internet-delivered, intensive behavioral intervention for overweight and obese adults living in rural, or medically underserved communities.

Introductory Facts

- The WHO reports that more than 1.9 billion adults were overweight, and over 650 million were considered obese (2016)
- Obesity prevalence has a higher negative impact on low to middle income countries. The dichotomy is that these same countries face conditions related to both under- and over nutrition (WHO, 2017)
- The burden of obesity is worse for low-income, minority and rural-dwelling adults (Hill, You, & Zoellner, 2014).
- Previous studies have reported a higher prevalence of obesity among rural Americans (Trivedi, Liu, Probst, Merchant, Jhones, & Martin, 2015) which is magnified due to lack of access to quality health services and providers (Bolin & Bellamy, nd).

Why a Technological Approach was Considered

- Understanding that obesity is a multi-faceted constellation of causative factors, this interventional investigation utilized intensive behavioral therapy (IBT) along with current adult obesity practice guidelines (2013), to deliver the intervention using a distance learning technology-based platform.
- By addressing barriers to access in delivering an evidence-based intervention in rural community dwellers the research members sought to compare outcomes between traditional face-to-face interventions employing IBT, to one that could be delivered through an internet-based platform.

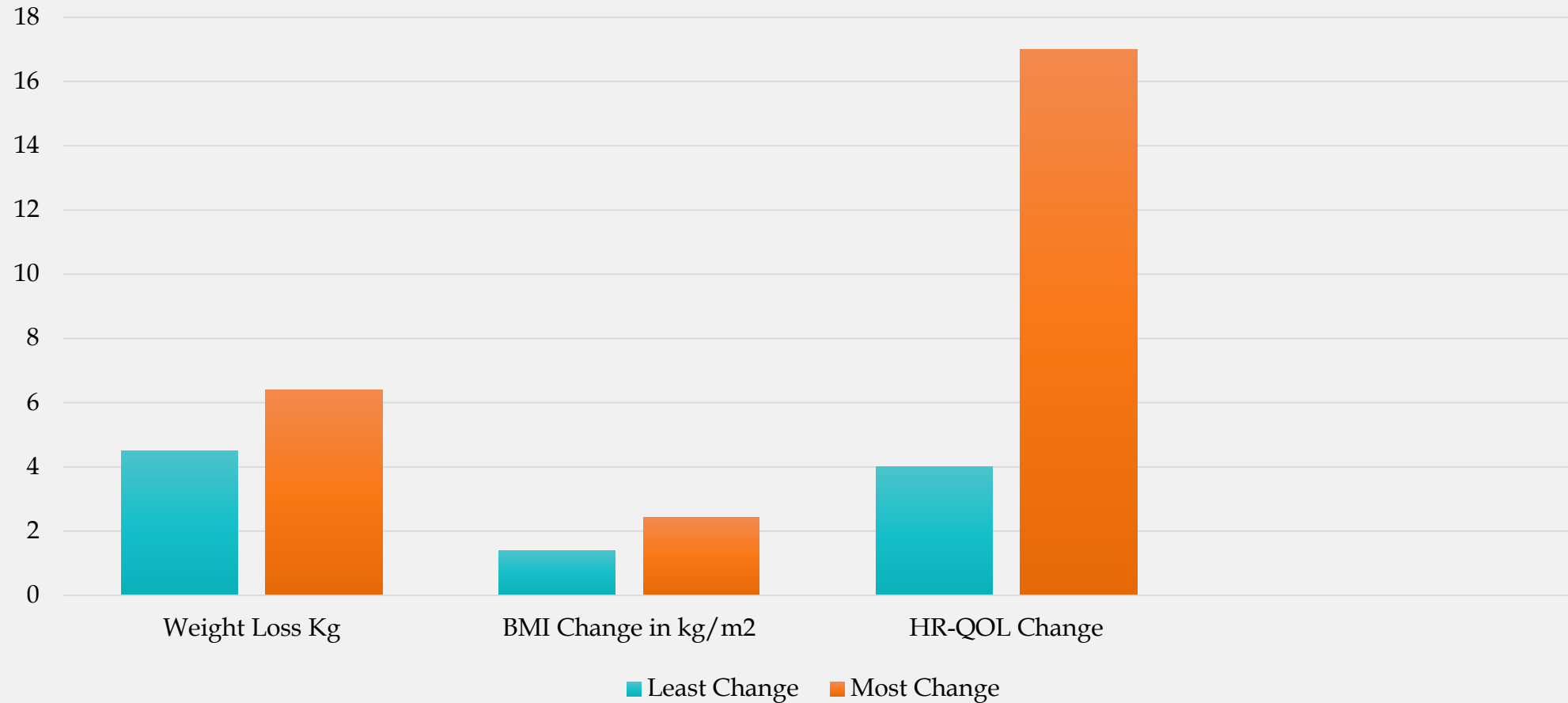
Study Design

- A single arm, pre-post study design was selected to measure the effectiveness of the internet-delivered, IBT intervention (Thiese, 2014).
- While an RCT would enhance the generalizability of the study outcomes, expense coupled with rural provider preference, restricted this option.
- Inclusion criteria included English speaking adults, age ≥ 18 and whose BMI was $\geq 25 \text{ kg/m}^2$ and $\leq 40 \text{ kg/m}^2$, and whose co-morbid conditions were considered well-controlled as determined by their primary care provider.
- Exclusion criteria included cognitive deficits that might interfere with participant ability to participate and physical limitations that may have hindered their ability to participate in sustained light-to-moderate aerobic activity five days per week.
- Measurements using the Health-Related Quality of Life-Short Form 36 (HRQL-SF) were taken at baseline and after completion of the intervention at 8-weeks.

Qualitative Results

- To date, 143 of 170 (.84) participants have completed the intervention
- Overall, participants reported good to high satisfaction with the learning modules
- Scores for quality, usefulness, ease of use, and appearance of the modules were consistently rated good to high in participant surveys
- Most participants reported spending 4 hours weekly during each of the eight-week sessions
- Early indicators support modest improvement on pre- / post-BMI measures

Quantitative Outcomes Reported at 8-Weeks

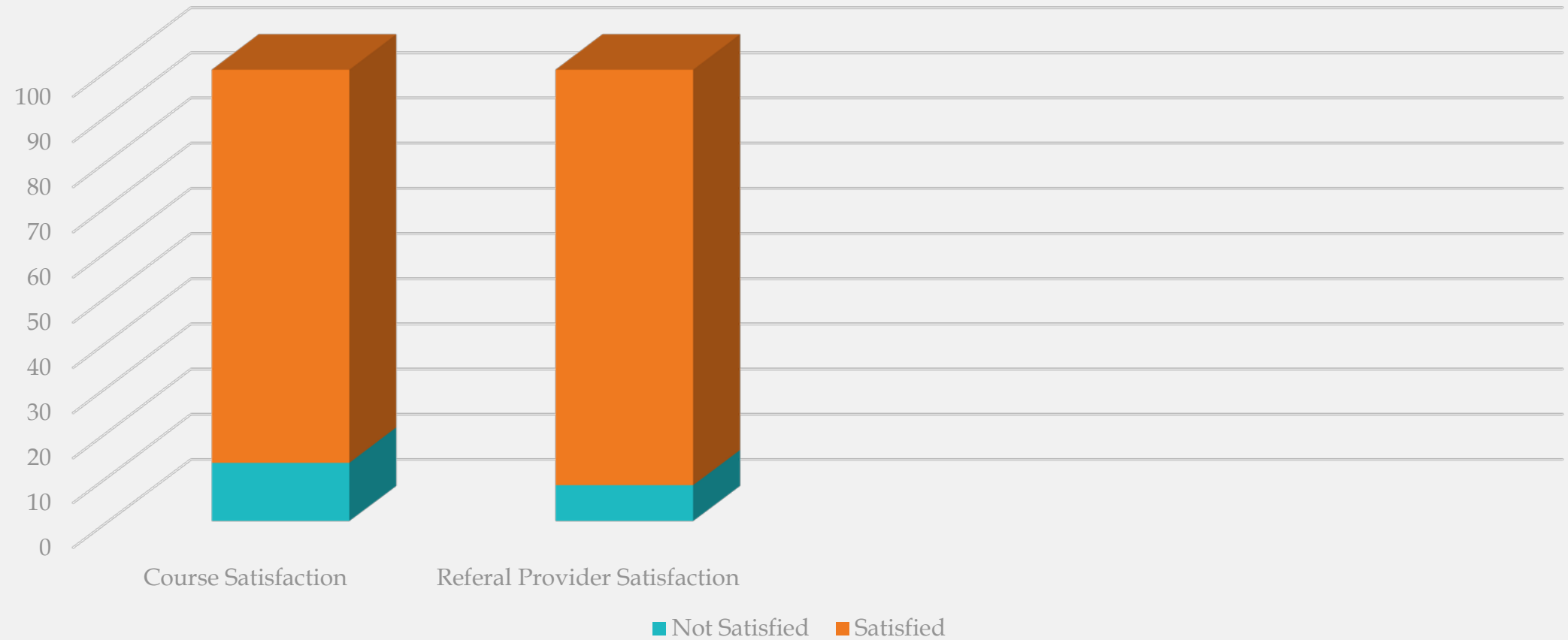


Changes in Health Related Quality of Life Outcomes

* = Statistically Significant Changes

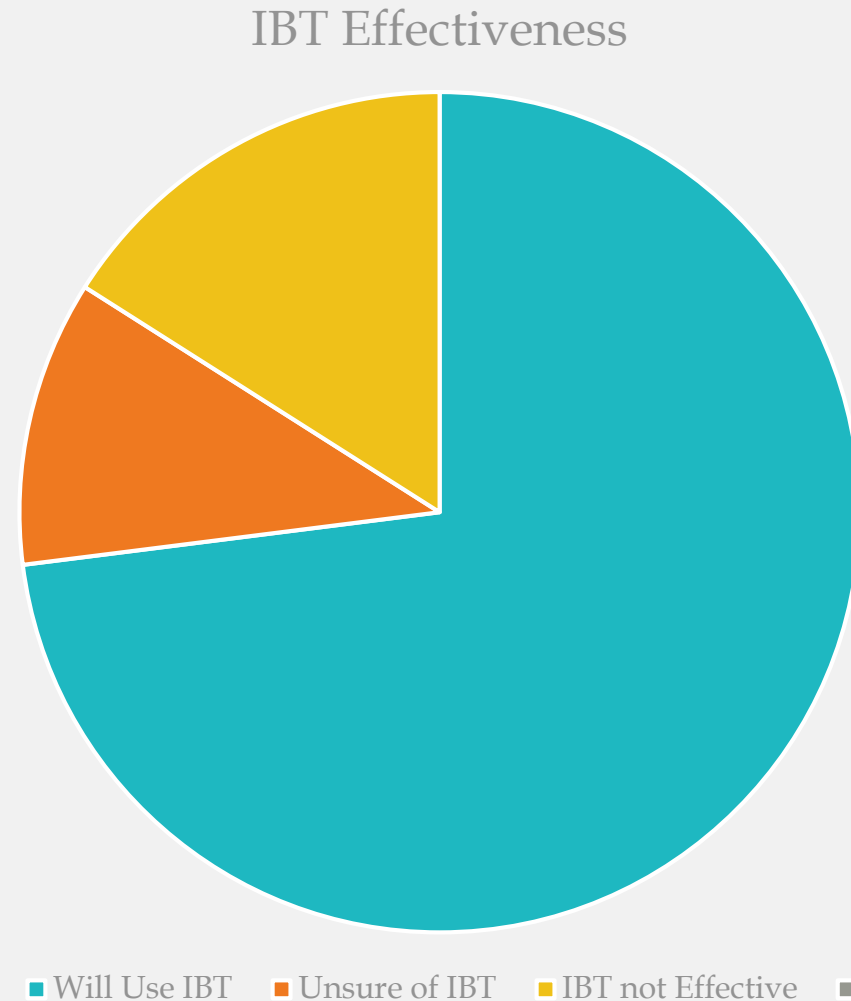
Role Limitation Physical	Role Limitation Emotional	Vitality	Mental Health	Social Functioning
P=0.076	P=0.012*	P=0.011*	P=0.028*	P=0.037*

Reported Satisfaction Outcomes from Participants and Providers



Study Limitations & Considerations

- Small sample size of 170 at baseline
- 27 Non-Completers (16%) drop out rate



Conclusions

- Healthcare providers face unique challenges in managing chronic diseases, including obesity, in rural and medically-underserved communities across the globe.
- With improving access to technology-delivered health care across rural communities, specialty care is now available locally, thus reducing the travel burden for rural community dwellers to travel to distant healthcare sites.
- The central design of this intervention was the triad relationship between the client, local healthcare provider, and the distant site provider/researcher of the intervention.
- Findings indicate that some measures of access to quality specialty care were overcome. However, some barriers remain, including the intermittent availability of technology, low-speed broadband, or dial-up internet access.

Conclusions

- This resulted in the need for flexibility with the intervention content to minimize technology reliance of content delivery of some materials.
- Program success was also reliant on the professional relationship between the participants and their local healthcare provider. Local providers agreed to refer participants as well as provide necessary biophysical measurements to validate study outcomes.
- This design supports the potential for establishing collaborative community relationships between urban, or university-based providers and rural providers to mitigate barriers to effective obesity treatment. Lessons learned in this study may inform providers in other rural and medically underserved areas across the globe.

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