

2-2016

## Feasibility of mHealth technology use among a sample of isolated rural men at high risk for cardiovascular disease

Betsy J. Becker

*University of Nebraska Medical Center, [betsyj.becker@unmc.edu](mailto:betsyj.becker@unmc.edu)*

Christine M. Eisenhauer

*University of Nebraska Medical Center, [ceisenhauer@unmc.edu](mailto:ceisenhauer@unmc.edu)*

Carol H. Pullen

*University of Nebraska Medical Center, [chpullen@unmc.edu](mailto:chpullen@unmc.edu)*

Paul J. Dizona

*University of Nebraska Medical Center*

Patricia A. Hageman

*University of Nebraska Medical Center, [phageman@unmc.edu](mailto:phageman@unmc.edu)*

Tell us how you used this information in this [short survey](#).

Follow this and additional works at: [https://digitalcommons.unmc.edu/cahp\\_pt\\_pres](https://digitalcommons.unmc.edu/cahp_pt_pres)



Part of the [Nursing Commons](#), and the [Physical Therapy Commons](#)

---

### Recommended Citation

Becker, Betsy J.; Eisenhauer, Christine M.; Pullen, Carol H.; Dizona, Paul J.; and Hageman, Patricia A., "Feasibility of mHealth technology use among a sample of isolated rural men at high risk for cardiovascular disease" (2016). *Posters and Presentations: Physical Therapy*. 8.  
[https://digitalcommons.unmc.edu/cahp\\_pt\\_pres/8](https://digitalcommons.unmc.edu/cahp_pt_pres/8)

This Conference Proceeding is brought to you for free and open access by the Physical Therapy at DigitalCommons@UNMC. It has been accepted for inclusion in Posters and Presentations: Physical Therapy by an authorized administrator of DigitalCommons@UNMC. For more information, please contact [digitalcommons@unmc.edu](mailto:digitalcommons@unmc.edu).

# Feasibility of mHealth technology use among a sample of isolated rural men at high risk for cardiovascular disease

Becker BJ<sup>1</sup>, Eisenhauer C<sup>2</sup>, Pullen CH<sup>3</sup>, Dizona PJ<sup>3</sup> and Hageman PA<sup>1</sup>

1.Division of Physical Therapy Education, College of Allied Health Professions, University of Nebraska Medical Center (UNMC), Omaha, NE; 2.College of Nursing-Northern Division, UNMC, Norfolk, NE; 3.College of Nursing, UNMC, Omaha, NE

## Background/Purpose

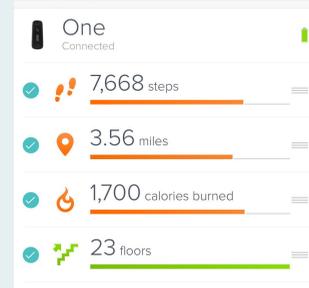
- Isolated rural men are considered a health disparities group at high risk for cardiovascular disease.
- Technologies for self-monitoring for healthy eating, activity and weight loss (ie mHealth) may show promise for engaging rural men in lifestyle modification.
- This study investigated the feasibility of men from rural isolated areas to use a fitness monitor with text messaging support over a 3-week period.
- The study examined the men's daily monitor use for tracking activity and eating, and assessed via written survey, their perspectives about mHealth.

## Subjects

- Twelve men, ages 40-69, from a US Department of Agriculture defined isolated rural area, participated.
- A purposive sample originally recruited to participate in a focus group about their perceptions of the utility of mHealth.
- Age: 50.9±8.6 yrs & Baseline BMI: 25-44 kg/m<sup>2</sup> [34.8±6.6 kg/m<sup>2</sup>]
- Eligibility included having cell/smartphones capable of sending/receiving text messages, access to a computer, willing to use a fitness monitor and have research personnel access the men's logs.



mHealth Activity Tracker showing step count



Sample dashboard view on computer, tablet or smartphone after mHealth device sync

## Materials/Methods

### Visit 1 Assessment & Instructions

- Baseline health histories & vital signs
- Training using the fitness monitor
- Asked to wear the monitor daily for 3 weeks & sync daily with computer

### Electronic Reminders

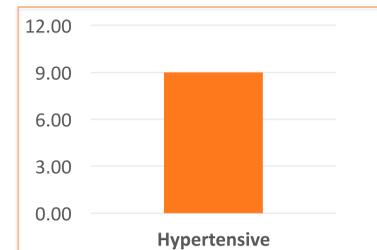
- Received 1-3 text messages/day for 3 weeks
- Topics: education and motivation for self-monitoring

### Visit 2 Assessment & Instructions

- Completed post-intervention surveys about their fitness monitoring
- Descriptive data were used for analysis

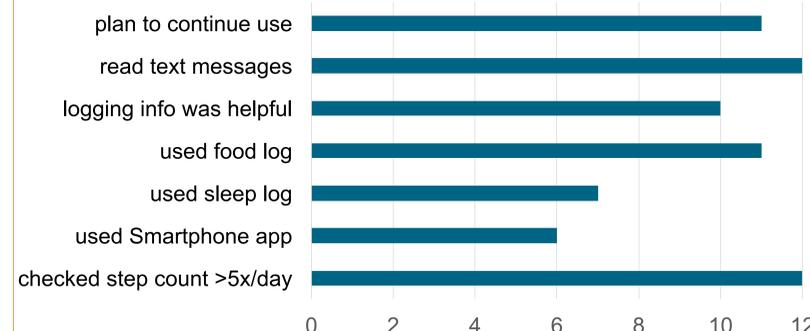
## Results

Nine of 12 men wore the monitor during all 21 days, two wore it 9 and 15 days respectively and one lost the monitor.



- Only four being treated with medications.
- One man was hypertensive stage 2 under no treatment and another was pre-hypertensive.

### mHealth Survey Results (n=12)



## Conclusions

Men were not well managed for blood pressure or overweight/obesity. Both the log records and the survey results indicated that using fitness monitors was feasible and acceptable among this population.

## Clinical Relevance

Using mHealth appears feasible as an action-oriented tool for therapists to recommend for lifestyle self-monitoring in isolated rural men. The findings reinforce the important role of therapists in routinely assessing vital signs and making referrals as appropriate.

## References

- Beafort CA, Nazir N, Perri MG. 2012. Prevalence of obesity among adults from rural and urban areas of the United States: Findings from the NHANES (2005-2008). *J Rural Health*, 28(4), 392-397. doi: 10.1111/j.1748-0361.2012.00411.x
- Caperchione, CM, Vandelanotte C, Kolt GS, Duncan M, Ellison M, George E, Mummy WK. 2012. What a man wants: Understanding the challenges and motivations to physical activity participation and healthy eating in middle-aged Australian men. *Am J Men's Health*, 6(6), 253-261. doi: 10.1177/1557988312444718.
- Knight E, Stuckey MI, Petrella RJ. 2014. Health promotion through primary care: enhancing self-management with activity prescription and mHealth. *Phys Sportsmed*, 42(3):90-9. doi: 10.3810/psm.2014.09.2080.
- National Institutes of Health. 2011. 2011 Strategic Plan for NIH Obesity Research. (NIH Publication No. 11-5493). Washington, DC: US Government Printing Office.
- Vandelanotte C, Caperchione CM, Ellison M, et al. 2013. What kinds of website and mobile phone-delivered physical activity and nutrition interventions do middle-aged men want? *J Health Commun*, doi: 10.1080/10810730.2013.768731.

Funding Source: Funded by Northeast Nebraska Funds for Excellence from the College of Nursing Northern Division, College of Nursing; College of Nursing Development Account; and School of Allied Health Professions Pilot Research Grant; University of Nebraska Medical Center.