



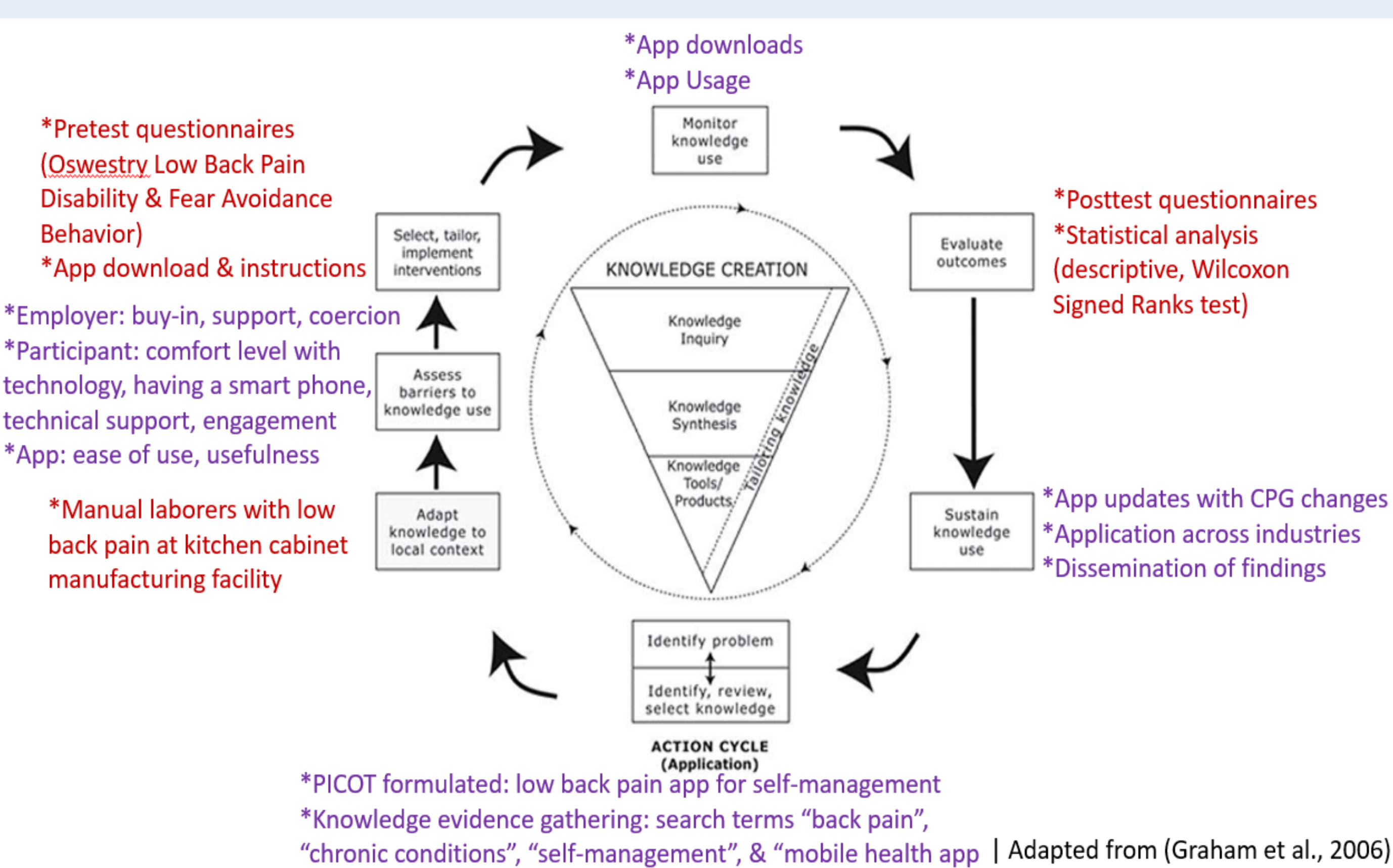
## Introduction

- Low back pain (LBP) - national costs \$635 billion per year <sup>1</sup>
- Loss of 149 million days-of-work/year <sup>2</sup>
- Persistent LBP - fear-avoidance behaviors, ability to return to work, home life, and earning potential <sup>3</sup>
- IOM- education plus self-management (SM) <sup>1</sup>
- Educational interventions - promote SM, reduces physical disability <sup>4,5,6</sup>

## Aims and Objectives

- Aim 1: to resume normal activities promptly, decrease physical disability, increase functional activities
- Aim 2: to decrease illness behavior and catastrophizing
- Objectives :
  - Create a LBP mobile application
  - Evaluate the impact of the application on physical disability and avoidance beliefs
    - Oswestry Low Back Pain Disability Index (ODI) Questionnaire
    - Fear Avoidance Beliefs Questionnaire (FABQ)

## Theoretical Model – Knowledge to Action Model



## Methodology

**Design:** pilot project, quasi-experimental pretest-posttest design

**Setting:** kitchen cabinetry manufacturing company

**Population:** adult manual workers with non-specific back pain

**Inclusion criteria:** reading and writing in English, mobile device with internet access

**Exclusion criteria:** past spinal surgery, current numbness or tingling in the legs, or radiation of pain down the legs, or pain unrelieved by rest, comorbid cardiovascular conditions

## Intervention:

- Four-week intervention period
- De-novo developed electronic mobile application
- App includes educational modules, external links to exercise protocols, additional resources
- App was tested prior to the study intervention

## Outcomes

- Oswestry Disability Index (ODI)- measures physical disability and functional activities, total index scores 0-100, the higher score the more physical disability
- Fear-Avoidance Beliefs Questionnaire (FABQ)- measures fear of pain and consequent avoidance of physical activity, scores from 0 to 66, the higher the score the higher the degree of fear avoidance beliefs

## Analysis

- Descriptive statistic for demographic data
- Wilcoxon Signed-Rank Test to compare ODI and FABQ scores pre and post intervention
- SPSS statistical package was used for analysis
- De-identified data was entered for analysis

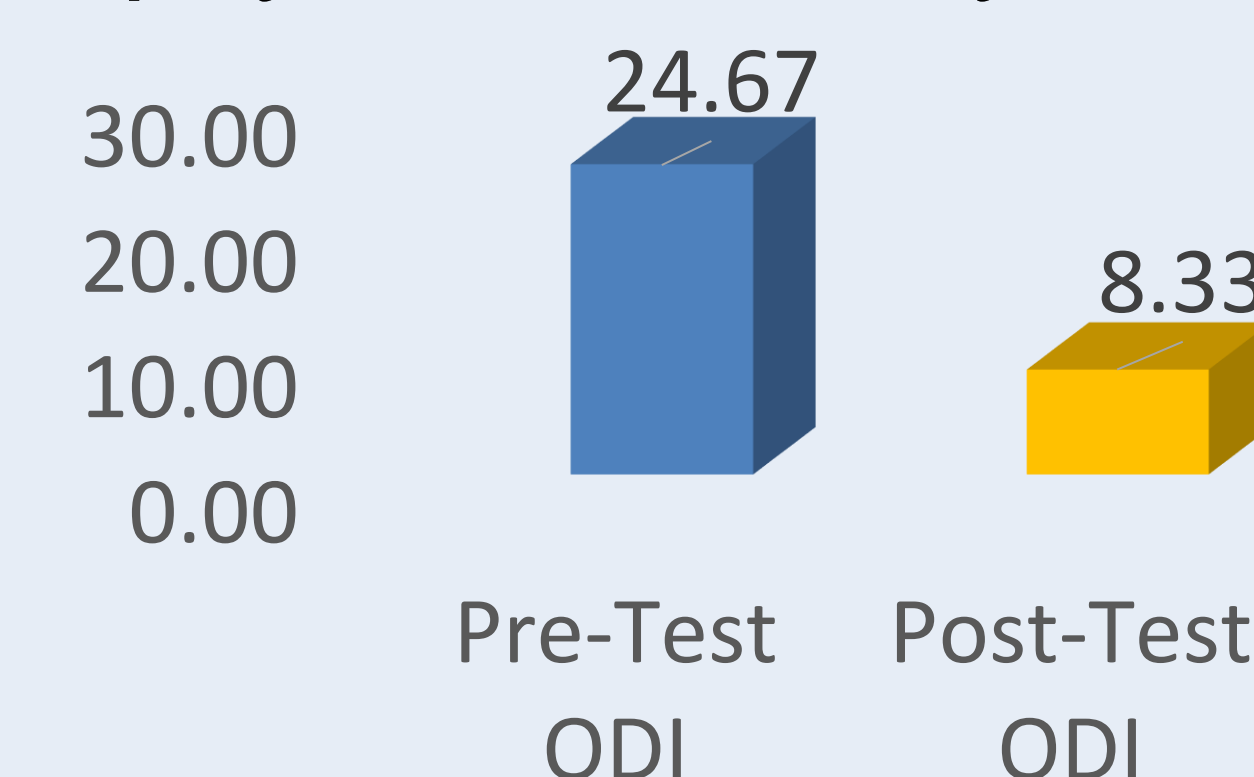
## Results

### Sample Characteristics (N = 6)

- **Age:** 29 yo ( $M = 29$ ,  $SD = 4.0$ , range: 23-34)
- **Years in role:** 3 years ( $M = 3.1$ ,  $SD = 2.0$ )
- **Years with LBP:** 5 years ( $M = 4.9$ ,  $SD = 2.2$ )
- **Gender:** all Male ( $n = 6$ )
- **Comfort with App:** All Very Comfortable ( $n = 6$ )

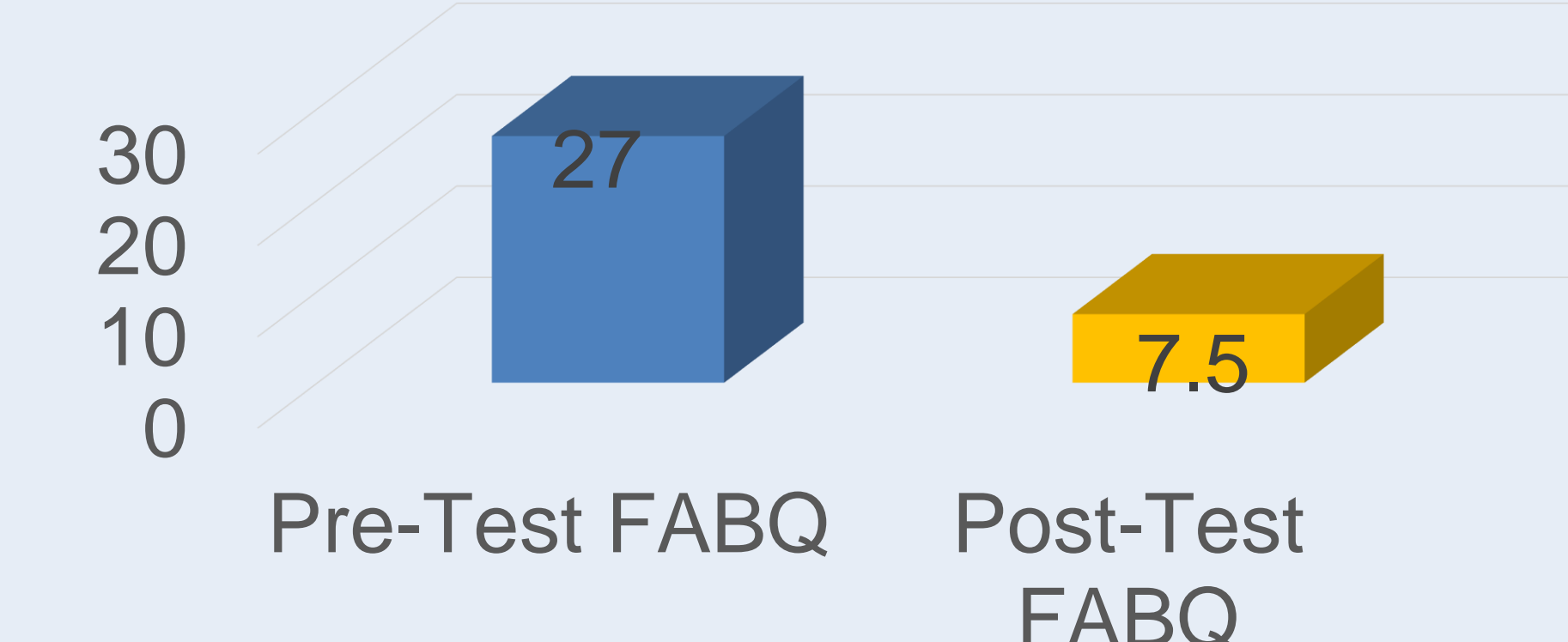
### ODI

- Non-Significant DECREASE in ODI score- decrease in physical disability ( $Z = -1.826$ ,  $p = 0.068$ )



### FABQ

- Significant DECREASE in the FABQ score- decrease in perceptions of physical activities & work as a cause of their pain ( $Z = -2.207$ ,  $p = 0.027$ )



## Implications

- Clinical Practice- integration of self-management applications into treatment plans
- Institutional policies – integration of self-management applications into institutional policies
- Education- providers education on the usefulness of electronic applications to support self-management
- Research – a need to determine whether electronic applications reduce healthcare cost and length and degree of physical dysfunction and improve quality of life

## Conclusions

- Self-management educational LBP app decreases fear-avoidance behaviors

## References List & Contact Information

Handouts provided