

# Effects of a Brief Motivational Interviewing Intervention on Cardiac Rehabilitation Patient Adherence

*Angele McGrady, Ph.D*

*Rachel Sieke B.S*

*Dalynn Badenhop, Ph.D.*

*Toledo, Ohio*



# Introduction

- Cardiac rehabilitation produces multiple physical, emotional benefits but not all patients complete the program.
- Completion rates vary

# Introduction

- Previous research of a brief intervention showed significant differences between number of sessions attended by intervention patients and intervention dropouts.
- No patients who dropped out of the intervention completed rehab

# Objectives of This Study

- Describe the effects of a 4 session motivational interviewing/relaxation intervention on retention of patients in cardiac rehab
- Reaffirm predictors of dropout in patients who do not complete rehab

# Methods

- Participants were recruited from Phase II cardiac rehabilitation with history of myocardial infarction (MI), coronary artery bypass graft (CABG), stable angina, chronic heart failure (CHF), or STENT/PTCA placement
- The study was IRB approved and all patients signed the consent form

# Patient Sample

	Intervention Group (n = 47)	Control Group (n = 49)
Age (years)	64.1 +-13.0	63.8 +-12
Female Gender	44.4%	54.5%
Cardiac Diagnosis		
Myocardial Infarction	8 (17%)	9 (18%)
Coronary Artery Bypass Graft	6 (13%)	6 (13%)
Stable Angina	6 (13%)	1 (2%)
Chronic Heart Failure	7 (15%)	10 (20%)
Stent/PTCA	14 (30%)	13 (27%)

# Methods

- Randomization into control or intervention group
  - Control group: 36 sessions of cardiac rehab
  - Intervention group: 36 sessions of cardiac rehab and 4 sessions of motivational interviewing and relaxation
- Data collected pre and post cardiac rehab:
  - Beck Depression Inventory-II
  - Beck Anxiety Inventory
  - 12 minute walk test
  - Weeks of rehab completed

# Intervention

Four 30  
minute  
small group  
sessions



## Motivational interviewing:

- Elicit change talk
- Facilitate cognitive restructuring
- Build self-efficacy
- Set realistic goals

Build basic relaxation skills



# Intervention details

	Motivational interviewing	Relaxation
<b>Session 1</b>	Identify patients personal strengths to support self-efficacy	Mindful breathing
<b>Session 2</b>	Elicit change talk; promote optimism	Progressive relaxation
<b>Session 3</b>	Manage negative thoughts; address barriers to adherence	Mindful breathing
<b>Session 4</b>	Create a strategic plan to accomplish rehab goals	Progressive relaxation

# Data Analysis

- Chi-square tests for categorical variables
- T-tests or ANOVA tests for continuous variables
- Data were analyzed using SPSS 15.0

# Results – baseline comparison

No significant differences between  
intervention and control groups in

Age

Beck Depression score

Beck Anxiety score

12 minute Walk test



# Results – baseline comparison

Significant differences ( $p < 0.05$ ) between rehab completers and non completers in

Age (completers are older; 67 vs 58 yrs)

Baseline BDI-II (depression)

(completers lower; 7.3 vs 12.0)

Baseline BAI (anxiety)

(completers lower; 7.6 vs 13)

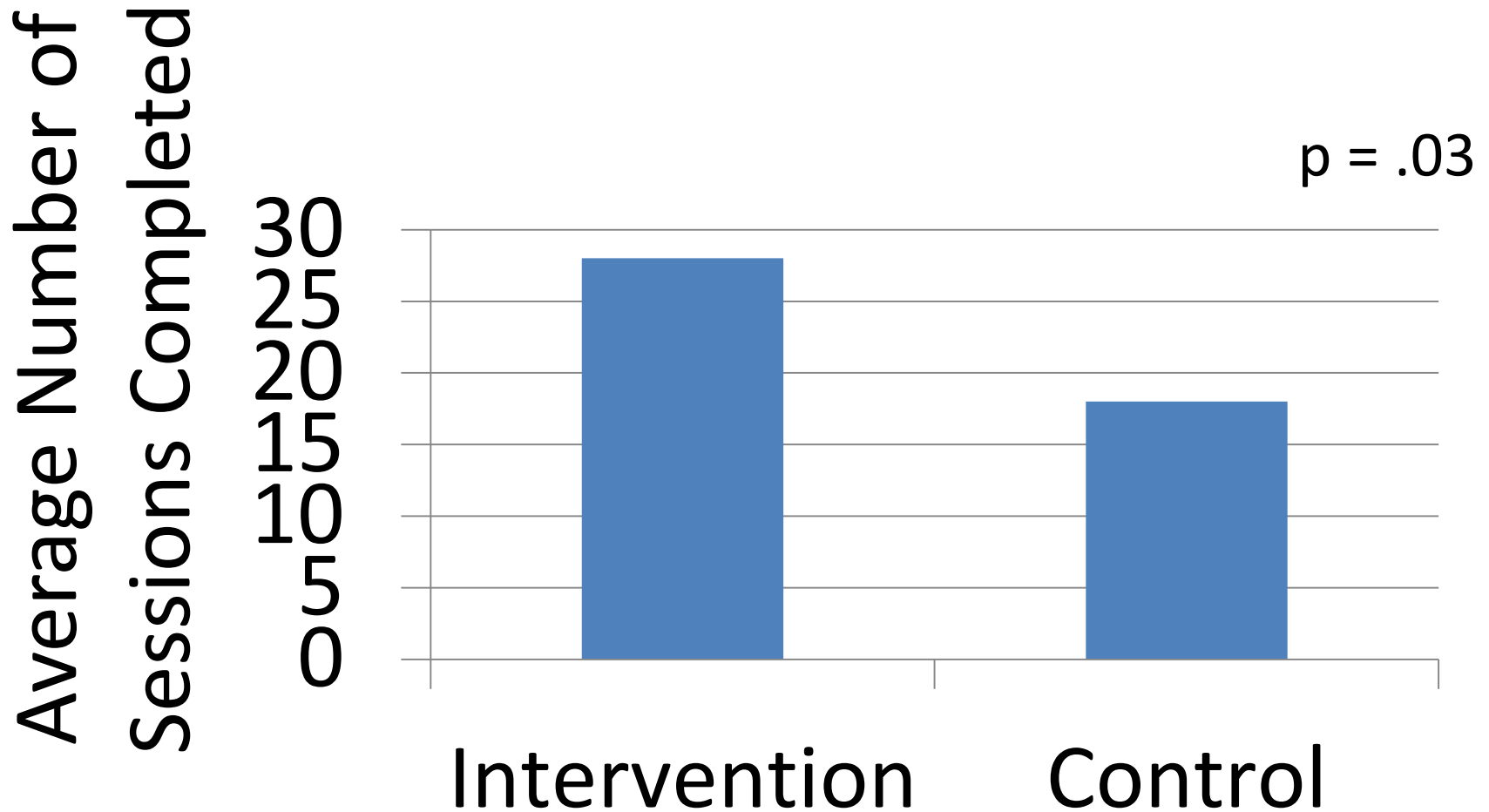
# Results post cardiac rehab

- No significant differences between intervention and control completers of cardiac rehab in
  - Depression
  - Anxiety
  - Walk test

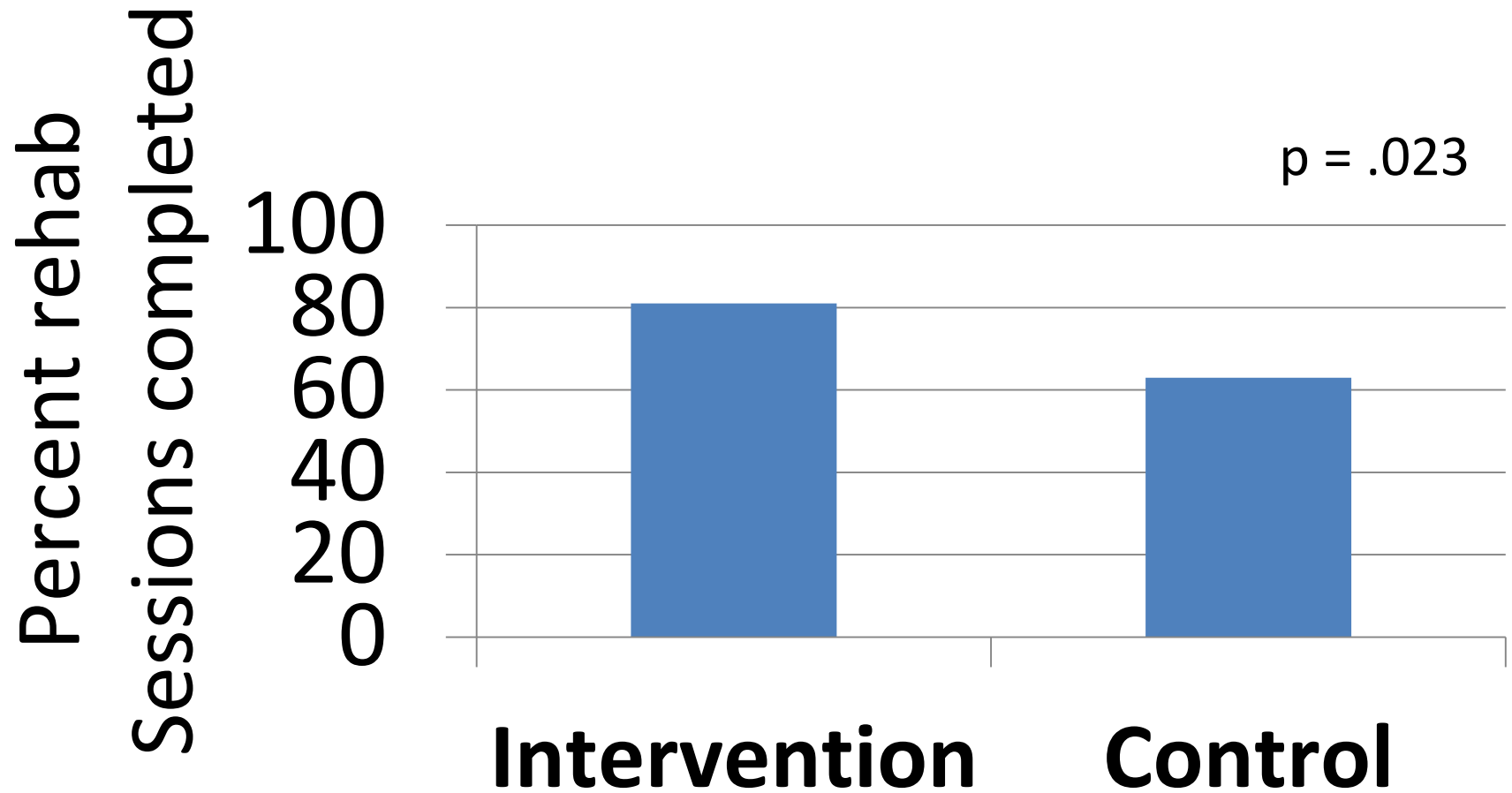


Reaffirming that patients who complete rehab sustain important benefits

# Results post cardiac rehab



# Results post cardiac rehab



# Results post cardiac rehab

Both Intervention and Control Completers  
finished 36 sessions of cardiac rehab

Intervention dropouts finished 17 sessions of  
cardiac rehab BUT control dropouts only 7

Difference is significant  $p < 0.01$



# Discussion

- The intervention was associated with:
  - increased number of cardiac rehab sessions completed
  - lower drop out rate (32% vs 44%)

The most important predictors of drop out are anxiety and depression

# Conclusion

Completion of cardiac rehab is associated with well established physical and emotional benefits

In order to increase completion rates,  
MI and relaxation are recommended

Future studies will further refine the critical components of the intervention

# Limitations

- Post data could not be collected for individuals who dropped out of the rehab program and could not be contacted
- The study does not adequately account for non-adherence due to worsening of medical status.

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**Thank you for your attention.**



# References

- McGrady, A., Burkes, R., Badenhop, D., & McGinnis, R. (2014). Effects of a Brief Intervention on Retention of Patients in a Cardiac Rehabilitation Program. *Applied Psychophysiology and Biofeedback*, 39, 163-170.
- McGrady, A., McGinnis, R., Badenhop, D., Bentle, M., & Rajput, M. (2009). Effects of depression and anxiety on adherence to cardiac rehabilitation. *Journal of Cardiopulmonary Rehabilitation and Prevention*, 29 (6), 358-369.
- Davis, M., Eshelman, E., & McKay, M. (2008). *The relaxation & stress reduction workbook*. (6<sup>th</sup> ed.). Oakland, CA: New Harbinger Publications.
- Rollnick, S., Miller, W.R., & Butler, C.C. (2008). *Motivational interviewing in healthcare*. London: The Guilford Press.

For questions about this investigation contact: [angele.mcgrady@utoledo.edu](mailto:angele.mcgrady@utoledo.edu)