

## **Supplemental materials for:**

Andreae SJ, Andreae LJ, Richman JS, Cherrington AL, Safford MM. Peer-delivered cognitive behavioral training to improve functioning in patients with diabetes: a cluster-randomized trial. *Ann Fam Med*. 2020;18(1):15-23.

### Supplemental Appendix 1. Intervention program session description

Program content focused on five lifestyle management areas (healthy eating, physical activity, stress management, communication with healthcare provider, social support) and each session lasted between 30 and 60 minutes. Session activities included cognitive restructuring and the use of adaptive coping skills to overcome barriers to self-management. Each session was organized around three general steps: 1) identifying negative or unhealthy thoughts, 2) replacing the unhealthy thoughts with positive or healthy thoughts, and 3) practicing positive or healthy actions. Participants practiced healthy thinking and actions in the context of all five lifestyle management areas, with emphasis on the role of physical activity as a strategy to reduce pain and improve mood. The exercise component stressed low intensity daily physical activity (i.e., walking or chair exercises if pain was too great). Session activities and homework included daily self-monitoring of mood and pain levels and physical activity over the entire course of the intervention. Other self-care activities included deep breathing and stress reduction activities, and behavioral goals for healthy eating and engaging the individual's social network, which were monitored over shorter periods during the intervention.

Supplemental Table 1. Sensitivity analyses including imbalanced baseline covariates in models of changes in the outcome measures from baseline to follow-up,  $\beta$  coefficients (95% CI).

	Model 1 <sup>1</sup>	Model 2 <sup>2</sup>	Model 3 <sup>3</sup>	Model 4 <sup>4</sup>
<b>Primary Outcomes</b>				
WOMAC Total Score	<b>-5.8 (-9.5, -2.1)*</b>	<b>-5.9 (-10.1, -1.7)*</b>		<b>-6.2 (-10.3, -2.0)*</b>
Functional limitations subscale	<b>-5.4 (-9.4, -1.4)*</b>	<b>-5.1 (-9.8, -0.3)***</b>		<b>-5.4 (-10.0, -0.7)**</b>
Stiffness subscale	<b>-11.0 (-17.6, -4.3)*</b>	<b>-10.5 (-17.4, -3.7)*</b>		<b>-10.3 (-17.4, -3.1)*</b>
Pain subscale	<b>-5.5 (-9.4, -1.6)*</b>	<b>-7.2 (-10.5, -3.9)*</b>		<b>-7.0 (-10.1, -4.0)*</b>
Quality of Life				
MCS	<b>1.4 (0.5, 2.2)*</b>	<b>1.7 (0.6, 2.8)*</b>		<b>1.9 (0.7, 3.0)*</b>
PCS	0.8 (-0.2, 1.8)	-0.2 (-1.3, 0.9)		-0.2 (-1.4, 0.9)
HbA1c	-0.01 (-0.2, 0.1)	0.02 (-0.2, 1.2)	0.03 (-0.2, 0.2)	
SBP	3.20 (-2.4, 8.8)	3.5 (-2.5, 9.6)		
BMI	0 (-0.2, 0.2)	-0.1 (-0.4, 0.1)		-0.1 (-0.4, 0.1)
<b>Explanatory Outcomes</b>				
Intense Exercise	0.4 (-0.2, 1.0)	0.4 (-0.3, 1.0)		
Days walked for exercise	<b>0.3 (0.2, 0.3)*</b>	<b>0.2 (0.2, 0.3)*</b>		
Perceived Activity Levels	<b>0.4 (0.3, 0.5)*</b>	<b>0.3 (0.1, 0.5)*</b>		

<sup>1</sup>Adjusted for clustering and baseline scores; <sup>2</sup>adjusted for baseline, gender, income; <sup>3</sup>adjusted for gender, income, insulin use; <sup>4</sup>adjusted for gender, income, baseline physical activity level.

WOMAC = Western Ontario and McMaster University Osteoarthritis Index.

MCS = mental component summary score. PCS = physical component summary score.

SBP = systolic blood pressure.

BMI = body mass index.

\*p<.01, \*\*p=0.02, \*\*\*p=0.03