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## A self-determination process model of physical activity adoption in the context of a randomized controlled trial

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#### Abstract

Objective: The PA Counseling (PAC) trial tested a primary care intervention using Self-Determination Theory (SDT) as the guiding framework. This paper presents specific results related to SDT constructs in a physical activity (PA) context. Specifically, whether patients who received both brief autonomy supportive PA counseling from their health-care provider and intensive (3 month) autonomy supportive counseling from a PA counselor would report greater levels of autonomy support, autonomous motivation, perceived competence and PA adoption, than patients receiving only brief counseling. In addition, we tested Williams' SDT process model in the context of PA adoption.

Method: Measures of autonomous motivation and perceived competence for PA were measured at baseline and 6 weeks. PA was assessed at baseline and 13 weeks. An autonomy support index was calculated by multiplying minutes of counseling by perceptions of autonomy support. Group differences in autonomy support, autonomous motivation, perceived competence and PA were examined. The SDT process model of PA adoption was tested via path analysis.

Results: The results showed higher autonomy support and autonomous motivation at 6 weeks and higher PA levels at 13 weeks for the experimental group. The SDT process model for PA adoption showed that

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autonomous motivation and perceived competence at 6 weeks significantly predicted 13-week PA for the experimental group.

Conclusions: This study provides a rigorous field test of SDT theory in a PA context. It demonstrates the versatility and applicability of the SDT model for health behavior change. SDT-trained PA counselors appear to provide valuable contribution to facilitating patient behavior change, by increasing patient autonomous motivation for PA.

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Keywords: Self-Determination Theory; Intervention; Physical Activity Counseling; RCT; Autonomous motivation; Perceived competence; Autonomy support

#### Introduction

From lowering blood pressure to improving mood, the multiple benefits of regular physical activity (PA) for healthy and diseased populations are well established (Brown et al., 2004; Knowler et al., 2002; Richardson, Kriska, Lantz, & Hayward, 2004; US Department of Health and Human Services and the US Department of Agriculture, 2005). However, what is less well known is how to optimally facilitate the adoption of a physically active lifestyle, and particularly how to assist people in maintaining this health behavior over the long term (Maciosek et al., in press).

Primary care has been targeted as a promising context to promote PA (see Fortier, Tulloch, & Hogg, 2006) and consequently multiple guidelines recommend that PA counseling be provided in the primary care setting (American College of Sports Medicine, 2000; Byers et al., 2002; Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults, 2001; National Heart, Lung and Blood Institute, 2004). However, PA interventions in primary care have shown mixed results, particularly for maintaining patient PA behavior change over time (Eakin, Glasgow, & Riley, 2000; Smith, Merom, Harris, & Bauman, 2002). Fiore et al.'s (2000) review in the tobacco dependence treatment area showed that interventions are more effective if physicians receive training and specialized health-care providers (HCP) are used for intensive patient counseling. Similar findings are emerging in the primary care PA promotion context (Tulloch, Fortier, & Hogg, in press). Thus, further research is needed to understand how physicians and allied HCPs can provide effective PA counseling.

The 5 A's model for behavior change counseling (Assess, Advise, Agree, Assist, and Arrange) has been shown to be effective and consequently has been adopted for health behavior change counseling, including PA by both the US Preventive Services Task Force (USPSTF) and the Canadian Task Force on Preventive Health Care (CTFPHC: Elford, MacMillan, Wathen, with the Canadian Task Force on Preventive Health Care, 2001; USPSTF: Whitlock, Orleans, Pender, & Allan, 2002). The National Cancer Institute developed this clinical framework for tobacco dependence treatment (Fiore et al., 2000). Both the tobacco dependence guideline and the USPSTF identify the importance of supporting patient autonomy in health behavior change counseling. Adopting a patient-centered collaborative approach which facilitates patient autonomy is also currently advocated in all medical care settings (ABIM, 2002; Woolf, Chan, & Harris, 2005).

Patient autonomy for health behavior change is a central concept of Self-Determination Theory (SDT; Deci & Ryan, 1985; Sheldon, Williams, & Joiner, 2003; Williams, 2002). Indeed, integral to

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