



Research Paper

Social cognitive correlates of physical activity among persons with multiple sclerosis: Influence of depressive symptoms

Ipek Ensari, Ph.D.^a, Dominique Kinnett-Hopkins, B.S.^b, Robert W. Motl, Ph.D.^{c,*}^a Center for Behavioral Cardiovascular Health, Columbia University Medical Center, 622 West 168th Street, New York, NY 10032, USA^b University of Illinois at Urbana-Champaign, Department of Kinesiology and Community Health, 906S Goodwin Ave, 233 Freer Hall, Urbana, IL 61801, USA^c University of Alabama at Birmingham, Department of Physical Therapy, 1705 University Blvd SHPB 336, Birmingham, AL 35233-1212, USA

ARTICLE INFO

Article history:

Received 2 June 2016

Received in revised form

13 February 2017

Accepted 9 March 2017

Keywords:

Multiple sclerosis

Physical activity

Depression

HADS

Social cognitive theory

ABSTRACT

Background: Physical inactivity and elevated depressive symptoms are both highly prevalent and correlated among persons with multiple sclerosis (MS). Variables from Social Cognitive Theory (SCT) might be differentially correlated with physical activity in persons with MS who have elevated depressive symptoms.

Purpose: This study investigated the influence of elevated depressive symptoms on correlates of physical activity based on SCT in persons with MS.

Methods: Participants (mean age = 50.3 years, 87% female, 69% Caucasian) completed questionnaires on physical activity, depressive symptoms, self-efficacy, social support, outcome expectations, functional limitations, and goal setting. The questionnaires were delivered and returned through the U.S. Postal Service. The sample (N = 551) was divided into 2 subgroups (i.e., elevated vs non-elevated levels of depressive symptoms) for statistical analyses. Bivariate correlations and stepwise multiple regressions were conducted using SPSS.

Results: Self-efficacy ($r = 0.16$), functional limitations ($r = 0.22$) and goal-setting ($r = 0.42$) were significantly ($p < 0.05$) associated with physical activity among the elevated depressive sample. The regression analysis indicated that self-efficacy predicted physical activity in Step 1 ($\beta = 0.16$, $p < 0.05$), but was no longer significant when goal-setting ($\beta = 0.06$, $p > 0.05$) entered the model. All social cognitive variables were significantly associated with physical activity levels ($r = 0.16$ – 0.40 , $p < 0.001$) among the non-elevated depressive sample. Self-efficacy predicted physical activity in Step 1 ($\beta = 0.24$, $p < 0.001$), but it was no longer significant once goal-setting, functional limitations, and self-evaluative outcome expectations entered the model.

Conclusion: Based on SCT, self-efficacy and goal-setting represent possible targets of behavior interventions for increasing physical activity among persons with MS who have elevated depressive symptoms. There is a larger set of targets among those with MS who do not have elevated symptoms.

© 2017 Elsevier Inc. All rights reserved.

Multiple sclerosis (MS) is an immune-mediated, demyelinating disease of the central nervous system that affects an estimated 400,000 adults in the U.S.¹ and 2.5 million people globally.² This disease has an unpredictable course and results in a range of symptoms, including elevated depressive symptoms (i.e., cognitive, psychological and physical symptoms consistent with DSM criteria for major depressive disorder measured via self-reported scales or

instruments).^{3,4} One survey study from the United Kingdom MS Registry reported that approximately 47% of the 4178 respondents had elevated depressive symptoms based on a score of 8 or more on the Depression subscale of the Hospital Anxiety and Depression Scale (HADS-D) (i.e., indicative of clinically meaningful levels of depressive symptoms).⁵ That same study further reported the mean HADS-D score in the MS group was ~1 SD higher than that of the healthy reference/control group.⁵ Such mood disturbances have been associated with sleep disturbances,⁶ poor quality of life,⁶ cognitive impairment,⁷ mobility disability,^{8,9} and poor medication adherence¹⁰ in persons with MS.

* Corresponding author.

E-mail addresses: ie2145@cumc.columbia.edu (I. Ensari), kinnett2@illinois.edu (D. Kinnett-Hopkins), robmotl@uab.edu (R.W. Motl).

Physical activity has been associated with reduced depressive symptoms among persons with MS.^{11–13} One meta-analysis¹³ reported a small (Hedge's $g = 0.36$), statistically significant effect that was reliable across study and participant characteristics. Another meta-analysis¹¹ reported that the average effect of exercise training on depressive symptoms was larger when the exercise prescription satisfied U.S. Department of Health and Human Services (USHHS) physical activity guidelines¹⁴ (PAGs) (i.e., 150 min of moderate-intensity, or 75 min of vigorous-intensity aerobic PA per week) among adults with neurological diseases (i.e., 0.38 vs 0.19). The authors further reported that the largest improvement was seen in samples with MS compared with samples who had other neurological conditions.¹¹ Collectively, this suggests that physical activity represents a promising approach for managing depressive symptoms in MS, and that behavior interventions should be designed for promoting physical activity levels that meet PAGs for maximizing the reduction in depressive symptoms.

Persons with MS, and particularly those with elevated depressive symptoms, engage in substantially less physical activity than healthy control individuals.^{15,16} Persons with MS have been reported to not meet the PAGs with regards to the recommended volume of moderate-to-vigorous physical activity (MVPA).¹⁵ There further is evidence in those with MS and in the general population indicating that individuals with increased depressive symptoms engage in significantly less physical activity than non-depressed persons.^{17–19} Collectively, this indicates that persons with MS are more physically inactive, particularly those with depressive symptoms, and this latter group can benefit substantially from increasing physical activity levels for reducing depression.

The design of programs for promoting physical activity in persons with MS who have elevated depressive symptoms should be based on correlates from theories of behavior change.^{20,21} Such theories identify the variables that represent correlates of behavior change as targets of subsequent interventions, and the theories further inform the design of interventions by identifying approaches for changing such variables. Accordingly, theories of behavior change can inform the design of behavioral interventions that target an increase in physical activity toward the PAGs.¹⁴

The study of physical activity correlates in persons with MS and concurrent elevated depressive symptoms might be informed through the framework of Social Cognitive Theory (SCT).^{22,23} SCT includes self-efficacy, goal-setting, outcome expectations, and impediments and facilitators such as functional limitation and social support, respectively, as targets for behavior change. This SCT framework has been adopted for explaining physical activity behavior^{24–26} and informing the design of behavioral interventions for changing physical activity²⁷ in MS. However, the existing research has not focused on persons with MS who have elevated depressive symptoms.

The overall aim of this study was to identify specific variables from SCT (i.e., self-efficacy, goal-setting, outcome expectations, social support, functional limitations and disability) as correlates of physical activity in persons with MS both with and without elevated depressive symptoms based on a cut-off score of 8 or higher on the HADS-D.^{5,28} Based on similar, previous studies,^{24,29} this study hypothesized significant differences in physical activity, self-efficacy, goal-setting, social support, outcome expectations and functional limitations as impediments between those with and those without elevated depressive symptoms. We hypothesized that functional limitations and goal-setting would have the strongest correlations with physical activity in both groups. We hypothesized that self-efficacy would directly and indirectly correlate with physical activity in both groups. However, among those with elevated depressive symptoms, we expected that self-efficacy and goal-setting would more strongly associate with physical activity

than other variables, based on previous findings of goal-setting and self-regulation correlating with physical activity in individuals (without MS) with elevated depressive symptoms.³⁰

Methods

Participants

Participants were recruited by online advertisements and flyers delivered through the North American Research Committee on Multiple Sclerosis (NARCOMS) registry and the National Multiple Sclerosis Society (NMSS) website. The inclusion criteria were (a) established diagnosis of MS (i.e., participants provided confirmation of MS in writing from a treating neurologist); (b) relapse free in the last 30 days; (c) ambulatory with minimal assistance (i.e. walk independently or walk with a cane), and (d) age of 18 years and older. Overall, 830 participants were interested and eligible for the study, and 559 of them provided complete questionnaire packets. Main reasons for drop-out included unwillingness to complete the questionnaire packet and loss of questionnaire packet in the mail. There were 8 persons who did not provide data on the depressive symptom scale, and therefore the final sample for the present study included 551 persons with MS.

Measures

Depressive symptoms

Depressive symptoms were measured by the Depression subscale of the Hospital Anxiety and Depression Scale (HADS-D).³¹ The HADS-D contains 7 items that measure depression and include items such as “I still enjoy the things I used to enjoy” and “I feel cheerful.” The items are rated on a 4-point scale ranging between 3 (Most of the time) and 0 (Not at all), positively worded items are reverse-scored, and then item scores are summed into measures of depression. Overall scores for the depressive symptoms component of the HADS range between 0 and 21, and higher scores reflect a greater frequency of depressive symptoms. This scale has been used in previous studies of mood and physical activity in MS^{32,33} and has good evidence of score reliability and validity.³¹ Previous studies examining the psychometric properties of the HADS have reported consistent, direct associations between the HADS-D scores and clinician-delivered diagnosis of depressive disorder in a variety of samples.^{31,32} This scale was originally designed to detect symptoms of depression (and anxiety) in patients attending medical outpatient clinics.³¹ By mapping raw scores against the ratings of severity provided by clinical judge, the score of 8 was established as the cut-off for providing good trade-off between sensitivity of specificity (i.e., with a positive predictive value of 0.35).^{34,35} Accordingly, the scores on the HADS-D were used as a proxy for clinically meaningful levels of depressive symptoms; however, individuals were not given a clinician-determined diagnosis of a depressive disorder (e.g., major depressive disorder). Individual depressive symptoms subscale (i.e., HADS-D) scores were used for the data analysis in the study.

Physical activity

Physical activity was measured using the Godin Leisure-Time Exercise Questionnaire (GLTEQ).³⁶ The GLTEQ is a self-administered two-part measure of habitual physical activity; we included only the first part in this study consistent with earlier research.^{37,38} The first part has three items that measure the frequency of strenuous (e.g. jogging), moderate (e.g. fast walking), and mild (e.g. easy walking) exercise for more than 15 min during one's free time in a typical week. The weekly frequencies of strenuous, moderate, and mild activities are multiplied by 9, 5, and 3

Download English Version:

<https://daneshyari.com/en/article/5723174>

Download Persian Version:

<https://daneshyari.com/article/5723174>

[Daneshyari.com](https://daneshyari.com)