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Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

The importance of self-determined motivation towards physical activity in patients with schizophrenia

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ARTICLE INFO

Article history:

Received 24 April 2013

Received in revised form

17 July 2013

Accepted 10 October 2013

Keywords:

Physical activity

Exercise

Motivation

Schizophrenia

Self determination

ABSTRACT

There is a need for theoretically-based research on the motivational processes linked to the commencement and continuation of physical activity in patients with schizophrenia. Within the Self-Determination Theory (SDT) framework, we investigated the SDT tenets in these patients by examining the factor structure of the Behavioral Regulation in Exercise Questionnaire-2 (BREQ-2) and by investigating associations between motivation and PA. The secondary aim was to study differences in motivation according to gender, educational level, treatment setting and disease stage. A total of 129 patients (44♀) with schizophrenia agreed to participate. Exploratory factor analysis showed sufficient convergence with the original factor for amotivation, external and introjected regulation, while identified and intrinsic regulations loaded on a single factor which we labeled “autonomous regulation”. Significant positive correlations were found between the total physical activity score and the subscales amotivation ($r = -0.44$, $P < 0.001$), external regulation ($r = -0.27$, $P < 0.001$), and autonomous regulation ($r = 0.57$, $P < 0.001$). Outpatients reported more external ($P < 0.05$) and introjected ($P < 0.05$) regulations than inpatients. Our results suggest that patients’ level of self-determination may play an important role in the adoption and maintenance of health promoting behaviors in patients with schizophrenia.

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1. Introduction

Physical activity (PA) and exercise, when undertaken regularly, are beneficial for the health as well as psychological quality of life of patients with schizophrenia (Gorczynski and Faulkner, 2010; Scheewe et al., 2013; Vancampfort et al., 2009, 2012a, 2012b). Yet, only a minority of patients with schizophrenia actually engage in PA and exercise at a level compatible with proposed health recommendations (Sharpe et al., 2006; Vancampfort et al., 2012c). For instance, the average total energy expenditure of 2511 ± 606 kcal per day of patients who are prescribed clozapine for at least 6 months (Sharpe et al., 2006) is more than 20% lower than the minimum recommendations of the World Health Organization (2000).

One reason for this minimal engagement in PA is that many patients with schizophrenia lack sufficient motivation (Vancampfort

et al., 2012c). In schizophrenia, lack of motivation can broadly be explained by two factors. First, due to the presence of negative and depressive symptoms, patients with schizophrenia can be disinterested in PA and exercise, or may not value the beneficial outcomes associated with PA enough to make it a priority within their lifestyle (Green et al., 2012; Vancampfort et al., 2013). Second, some patients with schizophrenia may not feel sufficiently competent to initiate PA, feeling either not physically fit or skilled enough to undertake PA (Vancampfort et al., 2011a), or suffering from somatic co-morbidities that present a real or perceived barrier to exercise (Vancampfort et al., 2011b). Whether due to a reduced interest or a low perceived level of competence, previous research (Gorczynski and Faulkner, 2010) indicates that many patients with schizophrenia are either insufficiently motivated, having no intention at all to be more physically active, or are poorly motivated, being primarily driven by external push factors (e.g., rewards, sanctions, and expectations). To address these motivational deficits, several authors (Medalia and Brekke, 2010; Beebe et al., 2012; Green et al., 2012) recently highlighted the need for theoretically based research on the motivational processes linked to the commencement and continuation of healthy behaviors in patients with schizophrenia.

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In the present contribution, we wanted to meet this call by relying on Self-Determination Theory (SDT) (Deci and Ryan, 1985, 2000), a broad-band motivational theory that has been under development for more than four decades (Vansteenkiste et al., 2010). SDT is uniquely placed among theories of human motivation to examine the differential effects of qualitatively different types of motivation that can underlie behavior (Deci and Ryan, 1985, 2000). Originating from a humanistic perspective, hence fundamentally centered on the fulfillment of needs, self-actualization, and the realization of human potential, SDT is a comprehensive and evolving macro-theory of human personality and motivated behavior (Deci and Ryan, 1985, 2000). SDT may provide insight into reasons why patients with schizophrenia adopt and maintain certain health behaviors. Specifically, SDT proposes motivation to be multidimensional and residing along a continuum of increasing self-determination. The regulation towards PA can be amotivated, extrinsically motivated or intrinsically motivated.

At the lowest end of the continuum is amotivation, in which case patients lack the motivation to act, either because they do not feel they achieve recommended targets or do not see the value of being active. Extrinsic motivation implies that a patient engages in the behavior to achieve outcomes that are separable from the behavior itself. Within extrinsic motivation there is a continuum of behavioral regulations, reflecting the degree of autonomy or self-integration. External regulation refers to exercising to avoid punishment and other-disappointment or to obtain promised rewards or other-appreciation. While external regulation is associated with external pressures to engage in PA, introjected regulation refers to the imposition of pressures onto one's own functioning, for instance, by buttressing one's activity engagement with feelings of guilt, self-criticism, or contingent self-worth. Both external and introjected regulations represent controlled types of motivation as individuals will likely feel pressured to perform the behavior. For identified regulation on the contrary, the behavior is performed more willingly even though the activity is not enjoyable. A person will participate in PA, because the behavioral outcomes are personally important, for example to improve mental health or physical fitness. The most self-determined form of the extrinsic motivation continuum is integrated regulation, in which case the PA level is consistent with other prevailing values and has become prioritized within one's lifestyle. Although these types of extrinsic motivation attain a separable outcome than the activity itself, identified and integrated regulation involve personal endorsement of the reason to engage in the activity and, as a result, are more likely to be accompanied with feelings of choice and psychological freedom. Finally, intrinsic motivation represents the most self-determined type of motivation and involves engaging in PA for its own sake, that is, because patients find them challenging or enjoyable.

Extensive research in the general population has shown that there is good evidence for the SDT in understanding PA and exercise behavior, highlighting the importance of more self-determined forms of regulation in fostering PA and exercise (Teixeira et al., 2012). More recently, studies have begun to focus on the relevance of motivation for PA in clinical populations. For instance, in a group of obese children, Verloigne et al. (2011) reported that increasing levels of self-determination related to more PA. Considering the consistently lower levels of PA in individuals with schizophrenia, it is important to investigate whether in this population more self-determined types of motivation are positively associated with participation in healthy behaviors (i.e., an active lifestyle). Although previous studies demonstrated that psychiatric patients do not differ from the normal population in relation to motivational mechanisms (Sørensen, 2006; Roman et al., 2012), the predictive validity of SDT has to the best of our knowledge not been investigated in this

population. This is a critical issue, though, if future research aims are to test interventions informed by the principles of SDT to encourage patients with schizophrenia to adopt a more active lifestyle.

Knowledge on demographic correlates of physical activity motives which will help to identify high-risk patients in need for special care. Lower educated patients might be considered as a vulnerable subgroup since the prevalence of overweight is higher in low educational level groups and since they are an at risk population for lower PA levels (Vancampfort et al., 2012d). The lower PA levels of low educated patients might be partly explained by lower degree of autonomous motivation. However, no studies have ever compared the degree of different types of motivation for PA in low versus high educated patients. Additionally, it might be interesting to investigate whether age and gender have a different effect on different types of motivation for PA.

The current study has three major aims. The first aim involved examining the applicability of the questionnaire commonly used to measure the different motivational subtypes for exercising (i.e., Behavioral Regulation in Exercise Questionnaire-2, BREQ-2) (Markland and Tobin, 2004) in patients with schizophrenia by investigating its factor structure.

Secondly, we will investigate if PA levels of patients with schizophrenia are related to the different motivation types. Based on SDT, we hypothesized that the association between different forms of motivation outlined in SDT and PA becomes decreasingly negative and increasingly positive as one moves along the self-determination continuum.

A tertiary aim is to examine differences in types of motivation across distinct groups: male versus female patients, low versus high educated patients, in inpatients versus outpatients and in first-episode versus multi-episode patients.

2. Method

2.1. Participants and procedure

A cross-sectional multi-center design was used. Thirteen of 15 invited centers agreed to participate. One center did not treat patients with schizophrenia while another refused to participate due to practical reasons. The 13 participating centers (see acknowledgments) were located across the five Dutch-speaking provinces of Belgium.

Over a 4-month period (November 2012–February 2013), in- and outpatients with a DSM-IV diagnosis of schizophrenia (American Psychiatric Association, 2000), psychiatrically stable on current psychotropic regimen for at least 4 weeks, were invited to participate. The diagnosis was established by experienced psychiatrists responsible for the patients' treatment. Only patients with a clinical global impression severity scale (Guy, 1976) score of 3 or less assessed by a trained psychiatrist during a semi-structured interview, and who were able to concentrate for 20–25 min were included. No incentive was provided for participation. The study procedure was approved by all the 13 ethical committees. All participants gave their written informed consent.

2.2. Behavioral regulation in exercise questionnaire

The Dutch version of the Behavioral Regulation in Exercise Questionnaire-2 (BREQ-2) (Markland and Tobin, 2004) is used as an interviewer-administered questionnaire in order to ensure that patients with any literacy problems were not excluded. The BREQ-2 considers an individual's motivation towards exercise. We adapted the BREQ-2 by replacing the term "exercise" with the term "physical activity". This was undertaken for two reasons, firstly, PA recommendations refer to all physical activities and not to exercise in particular which is only one part of PA (Caspersen et al., 1985). Secondly, a similar change was made and successfully applied in previous research (Verloigne et al., 2011). The questionnaire comprises 19 items relating to five motivation types from the SDT. Each item is measured on a five-point Likert-scale, from 0 ("Not true for me") to 4 ("Very true for me"). The mean of the five subscales is calculated on a five-point scale to form an idea of the extent of each motivation type separately.

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