



# Could autonomous motivation hold the key to successfully implementing lifestyle changes in affective disorders? A multicentre cross sectional study



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## ABSTRACT

There is a need for theoretically-based research on the motivational processes linked to the adoption and maintenance of an active lifestyle in people with affective disorders. Within the Self-Determination Theory (SDT) framework, we investigated the SDT tenets in people with major depressive disorder or bipolar disorder by examining the factor structure of the Behavioural Regulation in Exercise Questionnaire-2 (BREQ-2) and by investigating associations between motivation, the Positive and Negative Affect Scale (PANAS) and International Physical Activity Questionnaire (IPAQ) scores. A total of 165 patients (105♀) (45.6 ± 14.2 years) agreed to participate. An exploratory factor analysis demonstrated sufficient convergence with the original factor for amotivation, and external and introjected regulation. The items of identified and intrinsic regulation loaded on the same factor, which was labelled autonomous regulation. Significant correlations were found between the total IPAQ score and the subscales amotivation, external regulation, introjected regulation and autonomous regulation. The relative autonomy index (RAI) was associated with the PANAS scores. Differences in RAI were found between physically inactive and active participants. Our results suggest that in people with affective disorders the level of autonomous motivation may play an important role in the adoption and maintenance of health promoting behaviours.

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## 1. Introduction

Physical activity and exercise can improve the physical and mental health and health related quality of life of people with depression (Cooney et al., 2013; Josefsson et al., 2014; Knäpen et al., 2014; Rosenbaum et al., 2014). Preliminary evidence exists demonstrating that participation in physical activity improves

mental and physical health parameters in people with bipolar disorder (Sylvia et al., 2013; Vancampfort et al., 2015). Despite this increasing evidence, only a minority of individuals with depression (Wielopolski et al., 2014) and bipolar disorder (Janney et al., 2014) engage in physical activity and exercise at a level compatible with public health recommendations.

One explanation for this is that many people with affective disorders lack sufficient motivation to adopt and maintain an active lifestyle (Searle et al., 2011). This lack of motivation can potentially be explained by several factors. First, the presence of depressive symptoms may result in people with affective disorders being disinterested or not valuing the beneficial health outcomes

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enough to make physical activity a priority (Rosqvist et al., 2009). Second, people with affective disorders may not feel sufficiently competent to transform their intention into action (Azar et al., 2010; Krämer et al., 2014), or are suffering from somatic co-morbidities that present a real or perceived barrier (Vancampfort et al., 2013a). In order to understand and address potential motivational deficits, there is a need for theoretically based research on the motivational processes linked to the adoption and maintenance of healthy behaviours in people with affective disorders (Knapen et al., 2014; Vancampfort and Faulkner, 2014).

In the present study, we aimed to address this deficit by utilizing the Self-Determination Theory (SDT) (Deci and Ryan, 2000). The SDT examines the differential effects of qualitatively different types of motivation that can underlie a specific behaviour (Deci and Ryan, 2000). It may provide insight into reasons why people with affective disorders commence and continue certain health behaviours. Specifically, SDT describes motivation as being multidimensional and residing along a continuum of increasing self-determination (also called autonomous motivation). The regulation towards an active lifestyle can be amotivated, extrinsically motivated or intrinsically motivated. At the lowest end of the continuum is amotivation, in which case individuals lack the motivation to adopt or maintain a lifestyle behaviour, either because they do not feel they achieve recommended targets or do not see the value of the change in lifestyle. Extrinsic motivation implies that a person engages in the behaviour to achieve outcomes that are separable from the behaviour itself. Within extrinsic motivation there is a continuum of behavioural regulations, reflecting the degree of autonomy or self-integration. External regulation refers to commencing and continuing a particular behaviour 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 an active lifestyle, 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 regulation represent controlled types of motivation as individuals will likely feel pressured to perform the behaviour. For identified regulation on the contrary, the behaviour is performed more willingly even though the activity itself is not enjoyable. An individual will participate in physical activity or exercise because the outcomes are personally important, for example to improve mental health or prevent somatic co-morbidities. The most autonomous form of extrinsic motivation is integrated regulation, in which case the lifestyle is consistent with other prevailing values. 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 an active lifestyle and, as a result, are more likely to be accompanied with feelings of choice and psychological freedom. Finally, intrinsic motivation represents the most autonomous type of motivation and involves being physically active for its own sake, because one finds it challenging or enjoyable.

There is a plethora of research demonstrating the importance of the SDT in understanding physical activity and exercise behaviour within the general population (Teixeira et al., 2012). More recently, research has focused on the relevance and significance of motivation for physical activity in psychiatric populations. For example, it was reported that higher autonomous motivation was significantly related to greater participation in physical activities in people with schizophrenia (Vancampfort et al., 2013b, 2014), yet similar research among people with affective disorders is lacking. Considering the low levels of physical activity participation in the majority of people with affective disorders, it is important to investigate whether in this population more autonomous types of motivation are also positively associated with participation in

healthy behaviours (i.e., physical activity). The predictive validity of SDT has, to the best of our knowledge, not been investigated in this population. Furthermore, knowledge on demographic correlates of physical activity motives will help to identify those individuals in need of more intensive or targeted interventions and will subsequently help to guide clinical practice. For example, no studies have ever compared the degree of the different types of motivation for physical activity in lower versus higher educated people with affective disorders. Additionally, it may be clinically pertinent to investigate whether age, gender and diagnosis (major depressive versus bipolar disorder) have a different effect on different types of motivation towards physical activity.

The current study has four major aims: (1) To provide validity evidence for the Behavioural Regulation in Exercise Questionnaire-2 (BREQ-2) (Markland and Tobin, 2004) in a sample of people with affective disorders; (2) To investigate if physical activity levels and the positive and negative affect of people with affective disorders are related to the different motivation types; (3) To establish if motivation differs according to gender (male versus female), education status (low versus high education) setting (inpatients versus outpatients) and diagnostic subgroup (major depressive disorder versus bipolar disorder); (4) To investigate whether the variance in significant correlates predict the variance in the relative autonomy index (RAI), an overall measure of autonomous motivation, towards an active lifestyle in people with affective disorders.

## 2. Methods

### 2.1. Participants and procedure

A multi-centre cross-sectional design was employed. Thirteen of 14 invited psychiatric centres agreed to participate. One centre did not participate due to organizational reasons (lack of time). The 13 participating centres (see Acknowledgements) were located across the five Dutch-speaking provinces of Belgium. Over a 6-month period (June 2014–December 2014), in- and outpatients with a DSM-IV diagnosis of either major depressive disorder or bipolar disorder (American Psychiatric Association, 2000) were invited to participate. The diagnosis was established by experienced psychiatrists responsible for the patients' treatment and who were not involved in the study. No incentive was provided for participation. The study procedure was approved by all the local ethical committees and all participants provided written informed consent.

### 2.2. Behavioural regulation in exercise questionnaire

The Dutch version of the BREQ-2 (Markland and Tobin, 2004) was used. 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" in accordance with previous research in people with schizophrenia (Vancampfort et al., 2013a). The BREQ-2 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 to me'). The mean of the 5 retrieved subscales is calculated on a five-point scale to score the extent of each motivation type separately. We also calculated a RAI by weighting external regulation "−2", introjected regulation "−1", identified, regulation "+1", intrinsic motivation "+2" (Markland and Tobin, 2004). A higher score indicates that the participant is more autonomously motivated.

### 2.3. Physical activity levels

The International Physical Activity Questionnaire (IPAQ)-short version (Craig et al., 2003) was used. The IPAQ utilizes a 7-day recall period, identifying physical activity undertaken in the morning, afternoon and evening. Data from the IPAQ is summarized according to total minutes of walking, moderate physical activity (e.g., activities that makes one breathe somewhat harder than normal such as carrying light loads, bicycling at a regular pace, or easy swimming), and vigorous physical activity (e.g., activities that make you breathe much harder than normal such as heavy lifting, digging, aerobics, or fast bicycling) per week. A categorical analysis grouped the participants in an (1) inactive or (2) active group. In contrast to the inactive group, the active participants meet one of the following three general population health recommendations: (1) three or more days of vigorous activity of at least 20 min per day, or (2) five or more days of moderate-intensity activity or

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