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Autonomous motivation is associated with the maintenance stage of behaviour change in people with affective disorders

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ABSTRACT

The present study examined whether in people with affective disorders motives for adopting and maintaining physical activity recommendations (as formulated by the self-determination theory) differed across the stages of behaviour change (identified by the transtheoretical model). A total of 165 (105♀) persons (45.6 ± 14.2years) with affective disorders [major depressive disorder (n=96) or bipolar disorder (n=69)] completed the Behavioural Regulation in Exercise Questionnaire-2 and the Patient-centred Assessment and Counselling for Exercise questionnaire. Discriminant and multivariate analyses demonstrated that persons with affective disorders at the early stages of change have less autonomous and more controlled physical activity motives than those at the later stages. Our results suggest that autonomous motivation may have an important role to play in the maintenance of health recommendations in persons with affective disorders. Longitudinal and intervention studies should be designed in people with affective disorders to identify the causal pathways between motives for maintaining health recommendations, effective changes in health behaviour and physical and mental health outcomes.

1. Introduction

There is recent evidence which supports physical activity and exercise (a structured form of physical activity) for improving both physical and mental health outcomes of people with depression (Cooney et al., 2013; Josefsson et al., 2014; Rosenbaum et al., 2014; Stubbs et al., 2016). There is also preliminary evidence for the beneficial effects of physical activity and exercise in people with bipolar disorder (Sylvia et al., 2013; Schuch et al., 2015; Vancampfort et al., 2015a). However, only a minority of individuals with depression (Wielopolski et al., 2014) and bipolar disorder (Janney et al., 2014) are able to maintain physical activity and exercise levels at a level compatible with proposed health recommendations. As a result, clinicians face the challenge of promoting patients to meet the recommended physical activity levels.

One of the most commonly adopted models of behaviour change which might be applied for motivating sedentary populations is the transtheoretical model (TTM) (Prochaska and Di Clemente, 1983; Prochaska and Marcus, 1994). The model has been successfully utilised to describe the different phases that individuals with affective disorders pass through in the acquisition and maintenance of health behaviours (Knapen and Vancampfort, 2013; Knapen et al., 2013). The TTM provides a framework for categorising a person's readiness to change their behaviour and includes five stages. With respect to a change in physical activity behaviour, in the first stage, the pre-contemplation phase, individuals are physically inactive and are not thinking about

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becoming more active within the next six months. During the next contemplation stage, individuals think about becoming more active within the next six months. In the third stage, the preparation stage, individuals are engaging in some physical activity or exercise, while in the penultimate action stage individuals have been regularly active for less than six months. Lastly, the maintenance stage is characterised by sustained regular physical activity or exercise for more than six months. However, the model has limitations, for instance, it is not able to explain motives why individuals adopt an active lifestyle or remain sedentary, nor is it able to identify the mechanisms that underlie the maintenance of specific behaviours.

The self-determination theory (SDT) (Deci and Ryan, 2000) is a motivational theory that provides an insight into such motives. The theory proposes motivation is multidimensional and resides along a continuum. The lowest end of the continuum is identified as amotivation which represents a general lack of motivation to change behaviour due to discouragement. Following along the continuum, external regulation refers to being physically active or exercising to avoid punishment or criticism or to obtain promised rewards or external appreciation. Introjected regulation refers to the imposition of pressures onto one's own functioning, for instance, by reinforcing one's activity engagement with feelings of guilt, self-criticism, or contingent self-worth. More volitional (or autonomous) forms of functioning include identified regulation, which involves foreseeing the personal importance of physical activity or exercise, and integrated regulation, which implies that physical activity or exercise is brought in harmony with other prevailing life values, such that being active becomes prioritised within one's lifestyle. Finally, intrinsic motivation involves engaging in physical activity or exercise for its own sake, that is, because one finds being active stimulating or enjoyable by itself.

In distinguishing SDT from TTM, SDT highlights the importance of the type or quality of motivation, i.e. maintained engagement in physical activity and exercise regulated to a greater extent by autonomous or volitional motives, rather than by controlled or pressured motives. Consistent with this assumption, recently significant negative correlations were found between the level of physical activity participation during the previous week and amotivation, external and introjected regulations and significant positive correlations with autonomous regulation in people with affective disorders (Vancampfort et al., 2015a). Research is however needed to investigate not only intentions but also maintained engagement in physical activity behaviour over a longer period of time (6-months). In light of the complex and dynamic nature of physical activity and exercise behaviour, it seems unfeasible that a questionnaire focusing on the previous week or month is really able to truly capture a patient's behavioural patterns over a longer term (Soundy et al., 2014a). People with depression and bipolar disorder often experience lapses in trying to adhere to physical activity and exercise programs (Vancampfort et al., 2013a). Dropout from physical activity and exercise programs could be partly attributed to the motivation underlying physical activity and exercise behaviour. Although a longitudinal design would be ideal to answer this question, the maintained engagement in physical activity and exercise can be indirectly captured through the assessment of the stages of change, as has been shown previously in people with schizophrenia (Vancampfort et al., 2014) and in people with severe mental illness in general (Vancampfort et al., 2015b). As previous research (Vancampfort et al., 2015a) demonstrated that there were no differences in motives for being physically active between people with major depressive disorder or bipolar disorder, both clinical populations were included in the same analyses.

The aim of this study therefore was to evaluate the associations between the TTM stages of change and the motives people with affective disorders give for being physically active as discerned within SDT. A secondary aim was to explore gender differences in the interactions between the TTM stages of change and motives for being physically active as formulated according to the SDT. It was hypothesised that more autonomous forms of motivation (i.e. identified and intrinsic regulations) would be prevalent in more advanced stages of change (i.e. preparation, action and maintenance). In contrast, more controlling forms of motivation (i.e. external and introjected regulations) and in particular amotivation would be more evident in the least advanced stages of change (i. Eusphaeriodesmus pre-contemplation and contemplation).

2. Methods

2.1. Participants and procedure

Extended details for the procedures undertaken and demographics for participants are identified elsewhere (Vancampfort et al., 2015b). A cross-sectional multi-centre design was used incorporating 14 centres that treat persons with affective disorders (see acknowledgements). One centre declined to participate due to practical reasons. The centres were located across the five Dutch-speaking provinces of Belgium. All patients who had a DSM-IV diagnosis of major depressive disorder or bipolar disorder (American Psychiatric Association, 2000) as diagnosed by the treating psychiatrist, were invited to participate. Individuals were included if they were: (1) inpatients or outpatients, and (2) had a full or partial remittance in symptoms; i.e. individuals were excluded if they were located within an intensive supervision unit and / or were not able to concentrate for at least 20 min (as determined by the treating psychiatrist). All questionnaires were self-administered. Questionnaires were checked for missing data after completion by the patient. In case of any missing data participants were requested to add the data missing. No incentive was provided for participation. The study procedure was approved by the participating ethical committees based at each centre. All participants gave their written informed consent.

2.2. Behavioural regulation in exercise questionnaire

The Behavioural Regulation in Exercise Questionnaire-2 (BREQ-2) (Markland and Tobin, 2004) was used to explore motives for physical activity. The questionnaire comprises of 19 items relating to motives to be physically active derived from the self-determination theory (Deci and Ryan, 2000). Each item is measured on a five-point Likert-scale, from 0 ('Not true for me') to 4 ('Very true for me'). In accordance with previous research (Vancampfort et al., 2015a) "identified regulation" and "intrinsic regulation" were combined to a single factor labelled "autonomous regulation". This way, the BREQ-2 consisted of four factors: (1) amotivation, (2) external regulation, (3) introjected regulation and (4) autonomous regulation.

2.3. Stage of readiness to change

Stages of change as derived from the transtheoretical model (Prochaska and Di Clemente, 1983; Prochaska and Marcus, 1994) were assessed using a modified version of the stage of change questionnaire from the Patient-centred Assessment and Counselling for Exercise (PACE) questionnaire (Long et al., 1996). For this study, physical activity was defined as moderate intensity activity for 30 min at least five days of the week (e.g., physical activities that take moderate physical effort and make you breathe somewhat harder than normal). Participants chose one of five options: "I'm not physically active and I don't intend to start" (pre-contemplation); "I'm not physically active but I'm thinking about starting" (contemplation); "I'm active occasionally" (preparation); "I'm active regularly and started in the last 6 months" (action); and "I'm active regularly and have been for longer than 6 months" (maintenance).

2.4. Physical activity levels

The International Physical Activity Questionnaire (IPAQ)-short version (Craig et al., 2003) was used. The IPAQ utilises 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.