



## Need support and behavioural regulations for exercise among exercise referral scheme clients: The mediating role of psychological need satisfaction

David Markland <sup>a,\*</sup>, Vanessa Jayne Tobin <sup>b</sup>

<sup>a</sup> School of Sport, Health & Exercise Sciences, Bangor University, George Building, Holyhead Road, Bangor, Gwynedd LL57 2PZ, UK

<sup>b</sup> Herefordshire Primary Care Trust, Adult Mental Health Team, 25/27a St Owen Street, Hereford, Herefordshire, HR1 2JB, UK

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### ABSTRACT

**Objectives:** Based on predictions drawn from self-determination theory (SDT; Deci & Ryan, 2000, The “what” and the “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268) this study examined specific differential mediating effects of psychological need satisfaction in the relation between support for psychological needs and the internalization of behavioural regulation for exercise.

**Methods:** 133 former female exercise referral scheme clients (mean age = 54.51) completed measures of need support provided by their exercise practitioners, satisfaction of the psychological needs for autonomy, competence and relatedness, the latter including measures of interpersonal relatedness and social assimilation, and behavioural regulations for exercise.

**Results:** Multiple mediator regression analyses showed that when need support promoted autonomy and social assimilation, individuals were less amotivated and less externally regulated. Fostering personal relatedness whilst not fostering autonomy was associated with greater introjected regulation but promoting social assimilation served to partially offset this negative effect. When need support facilitated autonomy, competence and personal relatedness, identified regulation was promoted. Satisfaction of autonomy and competence needs mediated the association between need support and intrinsic regulation.

**Conclusions:** The results support the central role afforded to autonomy in SDT and indicate that autonomy does not have to be actively undermined in order to forestall the internalization process. In practical terms, in addition to promoting autonomy and competence, exercise practitioners should help referral schemes clients to assimilate into the social environment of exercise facilities as well as ensuring that they receive more direct interpersonal support.

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Self-determination theory (SDT; Deci & Ryan, 1985, 1991) has become a popular approach to understanding motivation for exercise behaviour. A critical aspect of SDT is its consideration of the extent to which the regulation of a behaviour has become internalized and integrated into the person's sense of self so that they feel that they are self-determining in their activities. The theory contrasts several forms of extrinsic behavioural regulations, which vary in their degree of self-determination, with intrinsic regulation and amotivation. Intrinsically regulated behaviours are engaged in for the inherent interest, enjoyment and challenges provided by an activity and are fully self-determined. Amotivation refers to a lack of intention to engage in a behaviour, reflecting a sense of

incompetence and/or a failure to value the activity or its outcomes. External regulation is a non-self-determined form of extrinsic motivation, where the person is motivated to obtain rewards or avoid punishments administered by others. Introjected regulation is a partially internalized form of extrinsic regulation where a person is motivated by internally imposed controls and self-esteem related contingencies. Identified regulation is a more self-determined form of regulation, involving a conscious acceptance that a behaviour is important in order to achieve personally valued outcomes. The most self-determined form of extrinsic motivation is integrated regulation. Here the person engages in a behaviour because it is consistent with their core values and beliefs. An extensive body of research has shown that more self-determined behavioural regulations predict more adaptive behaviour and greater well-being in many life domains including education, work, health and exercise (Deci & Ryan, 2000; Ryan & Deci, 2000).

\* Corresponding author.

E-mail address: [d.a.markland@bangor.ac.uk](mailto:d.a.markland@bangor.ac.uk) (D. Markland).

### Satisfaction of basic psychological needs

A fundamental premise of SDT is that the process of internalization and integration of behavioural regulation is fostered when three basic psychological needs are satisfied: the need to feel competent in dealing with one's environment, the need to feel autonomous in one's actions rather than feeling controlled or compelled to act, and the need to experience relatedness with others. SDT further specifies the social-contextual factors that can facilitate or hinder the satisfaction of these psychological needs. To the extent that the social environment provides supports for the three needs, more self-determined forms of behavioural regulation will be promoted (Deci & Ryan, 1991; Ryan & Deci, 2000). Conversely, if the social environment is controlling or unsupportive, psychological need satisfaction is thwarted and the process of internalization and self-determined motivation will be forestalled (Deci & Ryan, 2000; Ryan, Deci, & Grolnick, 1995). Thus the theory holds that the effects of social-contextual factors on self-determined motivation are mediated by psychological need satisfaction (Guay, Boggiano, & Vallerand, 2001).

SDT posits three aspects to a motivationally facilitative social environment: autonomy support, structure, and involvement (Connell & Wellborn, 1991; Deci & Ryan, 1991; Reeve, Bolt, & Cai, 1999; Ryan et al., 1995). In autonomy supporting contexts pressure to engage in behaviours is minimized and individuals are encouraged to initiate actions for their own reasons and in line with their personal goals and values (Markland, Ryan, Tobin, & Rollnick, 2005). Structure is concerned with helping individuals to develop clear expectations, encouraging them to believe that they are capable of successfully engaging in a task, and with the provision of positive feedback regarding progress (Markland et al., 2005; Reeve, 2002). The involvement dimension of the supportive environment concerns the extent to which individuals perceive that significant others are genuinely interested in them and their well-being (Connell & Wellborn, 1991; Grolnick & Ryan, 1987).

According to SDT, these three support dimensions are highly inter-related (Ryan, 1991). Perhaps as a result, when developing measures of need support, SDT researchers have most often adopted a unidimensional approach, in effect collapsing the different dimensions of support into a single factor labelled 'autonomy support'. For example, the most widely used and adapted measure of support in SDT health-related studies, the Health-Care Climate Questionnaire (Williams, Grow, Freedman, Ryan, & Deci, 1996), includes items that reflect involvement (e.g., My physician handles peoples' emotions very well) and structure (e.g., My physician has made sure I really understand about my condition and what I need to do). In order to explicitly recognize SDT's broader conception of motivationally supportive factors, and the inter-related nature of autonomy support, structure and involvement, the term 'need support' will be used in the current paper to refer to the supportive social environment. Niemiec et al. (2006) took a similar position in a study examining relations between parental supports for autonomy and relatedness and self-regulation for attending college among adolescents. Niemiec et al. modelled autonomy and relatedness supports as indicators of a single latent variable also labelled 'need support'.

### Differential patterns of need satisfaction and internalization

Deci and Ryan (2000) proposed that supports for competence and relatedness can facilitate the partial internalization of behavioural regulation but that for regulation to be more fully internalized, support for autonomy is essential. Koestner and Losier (2002) suggested more specific patterns in the effects of the satisfaction of the three needs on the introjected, identified and intrinsic forms of behavioural regulation. Satisfaction of the need for autonomy was held to be the most central nutrient to internalization and was thus

considered important for all three forms of regulation. Relatedness was held to impact both introjected and identified regulation. According to Koestner and Losier (2002) when supports for autonomy and relatedness are in harmony, identified regulation will be promoted. On the other hand, when supports for autonomy and relatedness are in conflict, contingent self-esteem will be fostered and the regulation of behaviour will be introjected. Deci and Ryan (2000, p.238) proposed a similar but slightly different position. They suggested that external pressures and controls can forestall the process of internalization even in the presence of support for relatedness, but also implied that introjected regulation can be the result of support for relatedness in the absence of support for autonomy (i.e., not just in the presence of controls). Koestner and Losier (2002) considered that relatedness is less salient for intrinsic regulation because people can be intrinsically motivated when engaging in solitary activities (Deci & Ryan, 2000). Instead, competence and autonomy need satisfaction would promote intrinsic regulation because this form of regulation involves being drawn to engage in activities that provide the individual with optimal challenges and the exercise of their skills.

### The present study

Studies have found support for the mediating role of psychological need satisfaction in the relations between need supports and self-determined motivation in a variety of contexts (e.g., Edmunds, Ntoumanis, & Duda, 2006; Pelletier, Fortier, Vallerand, & Brière, 2000; Standage, Duda, & Ntoumanis, 2003; Vallerand, Fortier, & Guay, 1997). However, to our knowledge no studies have examined specific differential mediated effects of need support on the various forms of behavioural regulation through the three needs. The principal aim of the present study was to examine the relations between perceptions of need support provided by exercise facility practitioners and clients' behavioural regulations for exercise among individuals in an exercise referral scheme and to determine whether these relations are mediated differentially by satisfaction of the needs for competence, autonomy and relatedness.

Typically in exercise referral schemes in the UK, primary health-care professionals (e.g., family physicians) refer individuals that they consider would benefit from increased physical activity to a community exercise facility. Here they are assigned to an exercise practitioner who gives them a fitness assessment and prescribes and monitors an exercise programme over a series of sessions at a reduced cost or for free, with the intention of motivating long-term participation. These schemes provide an interesting context in which to examine SDT's conception of the internalization process because, by virtue of the fact that clients are referred to the scheme by an authority figure and in order to help meet a health outcome (e.g., losing weight), the situation is inherently somewhat externally determined.

For the present study, context-specific measures of need support and relatedness were developed. We hypothesized that need support would be positively associated with the satisfaction of all three psychological needs but that there would be different patterns in the intervening effects of the satisfaction of the needs on the different forms of behavioural regulation. Based on the proposals of Deci and Ryan (2000) and Koestner and Losier (2002), and on the principles of SDT, the following specific mediational hypotheses were tested. Because amotivation involves a failure to value an activity and/or a sense of incompetence, we predicted that the relation between need support and amotivation would be mediated by autonomy and competence satisfaction. External regulation involves having one's behaviour controlled by external contingencies administered by others (Deci & Ryan, 2000). Therefore we predicted that fostering the satisfaction of the need for autonomy alone would be sufficient to mediate the relation between need support and external regulation.

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