



Motivation in the exercise setting: Integrating constructs from the approach–avoidance achievement goal framework and self-determination theory

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ABSTRACT

Objective: The purpose of this study was to integrate the approach–avoidance model of achievement goals with self-determination theory in the context of structured exercise. More specifically, we analysed how perceived motivational climate, implicit ability beliefs, perceived competence, and achievement goals contributed to exercisers' self-determined motivation.

Design: A cross-sectional design using questionnaires was adopted.

Method: The sample consisted of exercisers ($N = 727$; 402 males and 325 females) aged between 16 and 78 years ($M = 32.57$, $SD = 11.39$) attending different sports centres. Examples of exercise activities undertaken included weightlifting, aerobics, Pilates, keep-fit for adults, indoor cycling, and fitness.

Results: Structural equation modelling showed that a perceived mastery climate positively predicted incremental beliefs and perceived competence, whereas a perceived performance climate positively predicted entity beliefs. Incremental beliefs underpinned mastery-approach goals, performance-approach goals and performance-avoidance goals, whilst entity beliefs underpinned both performance-approach and performance-avoidance goals. Perceived competence positively predicted approach goals. Self-determined motivation was predicted positively by mastery-approach goals but negatively by both performance goals. The model was invariant across gender and age.

Conclusions: The present study provides initial support for the integration of the approach–avoidance goal framework and self-determination theory in the exercise domain.

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Introduction

Achievement goal theory (AGT; Nicholls, 1989) and self-determination theory (SDT; Deci & Ryan, 1991, 2000) are two principal contemporary motivational frameworks and numerous studies have attempted to test their principles in physical education (PE), sport and exercise settings (e.g., Biddle, Wang, Chatzisarantis, & Spray, 2003; Conroy, Elliot, & Hofer, 2003; Edmunds, Ntoumanis, & Duda, 2006). AGT's main principle is concerned with how individuals define competence in an achievement setting. The theory states that one can feel competent when one strives to improve one's previous level of performance (mastery goals) or when one's performance is better than that of others (performance goals). Those achievement goals adopted by a person will result in

different behavioural, cognitive and affective outcomes. SDT considers different types of motivation, conceiving a self-determination continuum for behaviours depending on the perceived locus of causality being more internal or external to the individual. This theory identifies social factors that result in the adoption of more self-determined types of motivation (i.e., performing an activity because it is enjoyable or because it is important) and consequently in experiencing more positive outcomes.

However, several empirical questions remain untested regarding these theories, especially in relation to achievement striving in exercise and motivational regulation. On the one hand, some researchers (e.g., Roberts, 2001) question the applicability of the achievement goal framework to exercise, stating that in this context there are different reasons to participate other than the demonstration of competence. However, in the context of structured exercise undertaken in the presence of others, it is plausible that concerns about competence and incompetence are salient, just as in sport or PE. For example, individuals may strive to keep up

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with others or to avoid doing worse in weightlifting, running on the treadmill or aerobic dance activities. Whether in the presence of others or not, exercisers may strive to lift more, run further and exercise for longer than they did previously. On the other hand, the situational and personal constructs defined by SDT do not explain all of the variance in individual's reported self-determined motivation, meaning that the examination of contextual and individual constructs from other theoretical frameworks is recommended to supply alternative perspectives and improve explained variance. Consequently, there is support for the integration of AGT and SDT perspectives to generate motivational models that will provide complementary explanations for self-determined motivation in exercise (see Hagger & Chatzisarantis, 2008). Therefore, the present study was designed to determine the significance of achievement goals and their antecedents on self-determination processes among individuals engaged in structured exercise.

Recent conceptualisation of the achievement goal construct has viewed individuals' competence-based aims in both approach and avoidance terms (see Elliot, 1999, 2005; Elliot & McGregor, 2001). Elliot and colleagues consider that, besides taking into account the way in which competence is defined (in connection with an absolute or intrapersonal standard or in connection with a normative standard), the valence of competence must be considered (competence can be viewed in negative terms such as failure and inadequacy at a task, or in positive terms such as success and adequacy). Crossing the two types of definition with the two types of valence produces four achievement goals (the 2×2 framework): mastery-approach (MAp: focused on achieving intrapersonal or task-based competence), performance-approach (PAp: focused on achieving normative competence), mastery-avoidance (MAv: focused on avoiding intrapersonal or task-based incompetence), and performance-avoidance (PAv: focused on avoiding normative incompetence). Moreover, in Elliot's framework (see Elliot, 1999), these four goals can be antecedented by a host of individual and situational factors. Consequently, the meaning of achievement striving to an individual will be determined by the goals which (s)he is trying to accomplish, along with those salient antecedents that underpin the goals. Antecedents include, but are not limited to, perceived motivational climate, perceived competence, and implicit theories about the nature of ability. In this study we chose these antecedents because they are prominent constructs in contemporary research on achievement motivation (see, for example, Cury, Elliot, Da Fonseca, & Moller, 2006), yet have received little attention in adult exercise settings.

According to Dweck and Leggett (1988), people can be differentiated in achievement contexts by the extent to which they view their ability as a skill that can be improved or as a stable entity. Therefore, two implicit ability beliefs have been proposed: an incremental belief, according to which the subject believes that his/her ability can be improved through training, learning and effort, and an entity belief, according to which ability is viewed as innate, cannot be improved upon, and depends on natural talent. In their original model, Dweck and Leggett proposed that individuals holding an incremental ability belief focus on learning, task mastery, and attaining personal improvement. On the other hand, individuals endorsing an entity belief focus on demonstrating their capacity at a task in relation to others. Regardless of the level of perceived competence (confidence in having enough ability to perform a task), mastery (approach) goals are related to adaptive motivational patterns, such as the search for challenge, persistence at tasks, performance, and intrinsic motivation. However, performance (approach) goals are related to adaptive motivational patterns only if individuals perceive themselves as competent. Research in physical education and sport has generally obtained results along the lines of the relations proposed, thus supporting the utility of the model in explaining motivational

phenomena in these domains (Biddle et al., 2003; Sarrazin et al., 1996; Wang & Biddle, 2003).

Based on the more recent theoretical model of approach–avoidance achievement goals, Elliot (1999, 2005) proposed that an incremental belief leads to both MAp and MAV goals, whereas an entity belief leads to both PAp and PAv goals. Individuals who conceive ability as something that is not stable are more likely to strive for personal improvement or to avoid the absence of learning. However, individuals who consider ability as something fixed are more likely to seek to demonstrate that their ability is superior to that of others, or at least try to prove that it is not inferior compared to others. In addition, perceived competence is viewed as a predictor of achievement goals rather than as a moderator of the effects of performance goals. High perceived competence generates both types of approach goals, whereas low perceived competence leads to the adoption of both types of avoidance goals. That is, if a person perceives him/herself to be competent, he/she will strive to demonstrate competence, rather than focusing on avoiding incompetence. Partial support for these propositions has been found recently in sport and PE settings (Morris & Kavussanu, 2008; Warburton & Spray, 2008, 2009). However, the results of a recent study in PE (González-Cutre, Sicilia, & Moreno, 2008) have questioned the theoretical conceptualisation of Elliot regarding relations between ability beliefs and achievement goals. According to González-Cutre et al. (2008), it is clear that if individuals conceive of ability as something fixed, they are unlikely to view improvement of their ability level as a goal, but if they view ability as improvable they compare improvement of their ability with that of classmates. In other words, believing that ability can be improved is not necessarily incompatible with striving to be better or avoiding being worse than others.

In the 2×2 model, perceived motivational climate is also considered an antecedent of achievement goal adoption (Elliot, 1999, 2005). Elliot (1999) asserts that environmental factors can impact on goal adoption in both direct and indirect ways. In the present study, we were particularly interested in whether the perceived climate would predict participants' notions of the nature of ability and perceived competence in the exercise setting. We aimed to determine whether the motivational climate conveyed by the exercise instructor was related with beliefs about ability and exercisers' perception of competence to adopt specific approach–avoidance achievement goals. Mastery climate, in which effort, task mastery and personal improvement predominate, has been associated with incremental ability beliefs and perceived competence. However, performance climate, where comparison with peers and down-playing of the role of effort predominate, has been linked with entity beliefs (see Ntoumanis & Biddle, 1999; Ommundsen, 2001a). We expected these relationships to be evident among a sample of exercisers. If the instructor emphasises the importance of effort to achieve self-improvement, the exerciser is more likely to believe ability is malleable and will strive to improve accordingly. Furthermore, the exerciser is more likely to feel competent given that the criterion for success is easier to attain than showing superiority over others. However, if the instructor focuses on social comparison, the exerciser may believe that some people are more naturally gifted than others. In this context, the goals of the exerciser might be directed towards comparing their stable level of ability with that of others in the class.

In sport, Morris and Kavussanu (2008) showed that mastery team climate, learning/enjoyment parental climate and perceived competence positively predicted MAp goals. The learning/enjoyment parental climate also underpinned MAV goals, whereas performance team climate and perceived competence underpinned PAp goals. Lastly, worry-conducive parental climate positively predicted PAv goals. These findings suggest that motivational

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