The processes by which perceived autonomy support in physical education promotes leisure-time physical activity intentions and behaviour: A trans-contextual model

Martin, S. Hagger[1],Nikos, L.D. Chatzisarantis[2], Trudi Culverhouse[2] & Stuart Biddle[3]

[1]University of Essex, UK, [2]Brunel University, UK, [3]Loughborough, University, UK,

Introduction

One of the primary aims for physical education is to provide young people with the necessary skills, knowledge and competence to chose and participate in health-related physical activity in their leisure-time. Physical education stands in an advantageous position for promoting the benefits of extra-mural physical activity as it addresses young, diverse, and captive audiences (Fox & Biddle, 1989). Importantly, it is through physical education that young people experience a variety of physical activities and it is these experiences that may determine involvement in leisure-time. Nevertheless, there is a relatively little research outlining how physical education teachers or physical education programmes can effectively orient young people towards regular leisure-time physical activity outside of school.

In the present study we propose and evaluate a theory of social cognition, known as the trans-contextual model, to explain the psychological processes by which young people transfer motivation during physical education into physical activity behavior during leisure-time. The trans-contextual model uses a unique multi-theory approach, adopting constructs from two social cognitive models of motivation – self-determination theory (Deci & Ryan, 1985) and the theory of planned behavior (Ajzen, 1991). The model will contribute to present knowledge by establishing how perceived autonomy in physical education is translated into leisure-time physical activity intentions and behavior. In terms of implications for physical education practice, the model will provide evidence that autonomy-supportive physical education teachers are those that are more likely to foster intrinsic motivation and behavioral continuity in their students in extra-mural contexts.

Method

Participants were 295 students (Males = 132, Females = 163, Age = 14.5 yr., SD = 1.35, range: 13 to 16) studying in three state high schools. A prospective design was employed with psychological variables being assessed at three points in time. In the first wave of data collection, perceived autonomy support in physical education and the perceived locus of causality in a physical education context was assessed using self-report questionnaires. In the second wave of data collection, which took place after a week, components of the theory of planned behavior, perceived locus of causality in a leisure-time physical activity context and frequency of physical activity in the past six months were measured. A one-week delay was employed to avoid presenting similar measures in succession and prevent contamination of the data by the introduction of common method variance. After five weeks, participation in physical activities was assessed (Godin & Shephard, 1985). A five-week inter-test period was employed to correspond with previous meta-analytic studies of the theory of planned behavior that have classified proximal measurement of intentions and behavior as 4 weeks or less and distal measures as greater than 4 weeks (Hagger, Chatzisarantis, & Biddle, 2002b). Two researchers conducted the data collection in quiet classroom conditions. Children were separated such that they could not copy or discuss responses. All of the questionnaires were completed anonymously to preserve confidentiality. Prospective responses were matched with baseline responses by using birth date and gender.

Two types of analysis conducted. First, a maximum likelihood confirmatory factor analysis was used to ascertain discriminant validity between measures of the perceived locus of causality in a physical education context and perceived locus of causality in a leisure-time physical activity context, and between attitudes and intrinsic motivation. Second, responses to

items measuring the same construct were averaged for use in the correlation and path analyses. A robust maximum likelihood method was used to estimate the path models.

Results

A path analysis model revealed that perceived autonomy support in physical education predicted the internal perceived locus of causality (intrinsic motivation and identified regulation) in a physical education context. In addition, the four types of regulation from the perceived locus of causality in a physical education context predicted the perceived locus of causality in a leisure-time physical activity context. Specifically, intrinsic motivation, identified regulation, introjected regulation and external regulation all exhibited within-construct trans-contextual regressions. In addition, intrinsic motivation in physical education predicted identified regulation in a leisure-time physical activity context. On the hypothesized cross-contextual reciprocal relationships between identified regulation and intrinsic motivation, a significant impact of intrinsic motivation in physical education on identified regulation in a leisure-time context was found, but there was no reciprocity. This indicates that intrinsic motivation in physical education can lead to motives to perform the behavior due to a personal value in another context. The anticipated mediation of the impact of perceived autonomy support in physical education on the perceived locus of causality in a leisure-time context by the perceived locus of causality in a physical education context was also confirmed.

With respect to the perceived locus of causality in a leisure-time physical activity context, the path model also indicated that intrinsic motivation exerted an indirect influence on intentions via attitudes and perceived behavioral control, while identified regulation only predicted intentions indirectly via the mediation of attitudes and not perceived behavioral control. These findings support Chatzisarantis et al.'s (2002) and Hagger et al.'s (2002a) hypotheses which state that intention-linked constructs representing more deliberative modes of information processing mediate the effects of an internal perceived locus of causality on leisure-time physical activity behavior. Further, although external regulation predicted subjective norms, the indirect relationship between external regulation in a leisure-time context and intentions was not significant.

The original premise of the theory of planned behavior that intentions mediate the impact of attitudes, subjective norms and perceived behavioral control on behavior was corroborated by present findings. The only exception was that the subjective norm construct which did not predict behavior, directly or indirectly. The expected perceived behavioral control-mediated effect of the internal perceived locus of causality on physical activity intentions and behavior in a leisure-time context was not supported because perceived behavioral control did not directly affect physical activity behavior. Overall, these results corroborate the view that the internal perceived locus of causality in a physical education context promotes motivation and physical activity behavior during leisure-time.

Further, perceived autonomy support in physical education exhibited two types of effects with regard to leisure-time physical activity behavior. There was an indirect effect of perceived autonomy support on physical activity behavior via a mediation model comprising the internal perceived locus of causality in a physical education context, the internal perceived locus of causality in a leisure-time context, attitudes/perceived behavioral control and intentions. A direct effect also described the relationship between perceived autonomy support in physical education and physical activity behavior in a leisure-time context.

In addition, the stability of the past behavior-behavior relationships was significantly attenuated from $r = .49$ to $r = .27$ by the trans-contextual model.

Discussion

The trans-contextual model presented in this study adopted hypotheses from self-determination theory and the theory of planned behavior to explain how young people's perceptions of an autonomy supportive environment affected their motives in a physical

education context, and their physical activity motives, intentions and behavior in a leisure-time physical activity context. This model aimed to make a unique contribution to the literature by specifying the mechanisms by which perceived autonomy in one context is translated into motivation and behavior in another. Not surprisingly, perceived autonomy support in physical education directly influenced intrinsic and identified motives in a physical education context. In accordance with hypotheses, the four types of regulation from the perceived locus of causality in a physical education context positively influenced the same regulatory types in the perceived locus of causality in a leisure-time physical activity context, with the strongest cross-contextual regression for intrinsic motivation. Intrinsic motivation in a physical education context also had an impact on identified regulation in a leisure-time context. Importantly, intrinsic motivation in a leisure-time physical activity context also positively influenced attitudes and perceived behavioral control and identified regulation influenced attitudes. External regulation positively predicted subjective norms. In keeping with findings from previous research, attitudes and perceived behavioral control completely mediated the effect of intrinsic motivation and identified regulation on intention. There was a small direct impact of perceived autonomy support on leisure-time physical activity behavior and a significant total effect. However, the majority of this influence was accounted for by the trans-contextual model. Finally, the strong relationship between past behavior and future behavior was completely explained by the trans-contextual model and the only influences of past behavior in the model were additive.

The present study provides support for a model specifying the trans-contextual effects of perceived autonomy support in physical education and perceived locus of causality in both physical education and leisure-time contexts on leisure-time physical activity intentions and behavior. The main findings indicate that perceived autonomy support predicts an internal perceived locus of causality in a physical education context, which affects leisure-time physical activity intentions and behavior via the mediation of the perceived locus of causality in a leisure-time context. This motivational sequence explains behavioral stability in leisure-time physical activity and contributes to the understanding of the translation of needs-related motives into motivated action. These results suggest that an important step in facilitating intrinsic motivation to participate in extra-mural physical activity may begin in schools. The onus is therefore on teachers to adopt an appropriate motivational discourse and provide appropriate task-related feedback that may enhance intrinsic motives for learning.

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