

DOCTORAL THESIS

Examining the role of self-regulated learning in adolescent physical activity behaviour

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ABSTRACT

Introduction Physical activity (PA) engagement is highly beneficial for adolescents and although interventions are shown to be effective, participants often return to former PA levels once the intervention is removed. Adolescents may lack explicit training in psychological and behaviour change skills required to sustain PA behaviour changes, such as self-regulation. SR is a key process in psychological functioning and its failure can result in impulse control problems, such as a tendency not to engage in behaviours that require a delay of gratification such as physical activity.

Purpose Self-regulated learning (SRL) is an approach that focusses on how to make improvements through a systematic method of learning how to adapt to ever changing environments, i.e. through planning, self-monitoring, effort, self-efficacy, self-evaluation and reflection. Study 1 examined the effectiveness of studies examining SRL variables in a PA context. Study 2 translated and validated an English language SRL questionnaire to measure SRL in a Chinese adolescent population. Study 3 assessed the contribution of SRL variables to PA in both Chinese and Scottish adolescent samples. In preparation for study 5, study 4 qualitatively assessed Chinese students' motivation for and engagement in PA. Finally, study 5 taught SRL skills in a PA context with the aim of positively impacting on adolescent PA levels.

Methods and Results In study 1 a systematic review of the literature was conducted. The majority of reviewed studies demonstrated a positive effect of SRL variables on PA. The review highlighted a lack of research conducted using SRL theory. Study 2 translated and validated a Chinese version of an SRL questionnaire with 315 (and cross-validated with 480) Hong Kong Chinese adolescents. The short SRL-SRS-C was found to be a sufficiently reliable instrument to measure SRL in a Hong Kong Chinese adolescent population. In study 3, a cross-sectional study of 480 Hong Kong and 411 Scottish adolescents was conducted to assess the relationship SRL and physical activity. Results revealed that adolescents from Hong Kong and Scotland do not engage in sufficient PA to achieve the potential health benefits that PA can provide. Significantly more use of self-monitoring, self-evaluation and reflection was associated with significantly higher LTPA in Scottish adolescents. In both samples, SRL was weakly but significantly associated with higher PA, and self-efficacy and reflection played significant roles this SRL-PA relationship. Study 4 conducted two qualitative focus group interviews and found that most Chinese adolescents only engaged in PA during limited physical education classes. Most students were knowledgeable of the health benefits of PA, however, academic pressures and the effort required to overcome PA barriers was too great. Students propose that walking more and felt that novel ways to encourage PA, such as through WhatsApp, were worthwhile. Finally, study 4 used a quasi-experimental design with three groups (total $n = 98$) Hong Kong Chinese secondary school students. Peers modelled SRL skills and the learning was prompted either face-to-face or through Whatsapp. Meaningful, but not significant, mean value increases in PA and SRL were found. SRL was weakly but positive and significantly associated with PA, and reflection emerged as the key SRL component in the SRL-PA relationship.

Conclusions SRL and PA are weak, but positive and significantly associated. Importantly, reflection has emerged as a significant predictor of adolescent PA. Adolescents with better SRL and reflective skills may be more aware of their strengths and weaknesses and able to translate this knowledge into future action. Considering that SRL skills are amenable to training, further experimental research should focus on teaching SRL strategies, particularly reflection, and assessing their impact on PA. SRL research in the adolescent PA area is promising but is at an early stage. Therefore, further research is recommended before strong conclusions can be made.

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