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Doctoral thesis abstract

Factors Determining the Change in Physical Fitness of Lithuanian Primary Schoolchildren Over a One-Year Period

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BACKGROUND AND OBJECTIVES

Physical fitness is a key indicator of children's health, yet global evidence shows a steady decline over the past decades (Aubert et al., 2018; Aubert et al., 2022). Lithuanian longitudinal data confirm this trend, with schoolchildren's fitness decreasing consistently since the 1990s (Venckūnas et al., 2017). Insufficient activity is widespread—only about 20% of children achieve the recommended 60 minutes of daily moderate-to-vigorous activity (Marques et al., 2019).

Low activity and poor fitness are linked to long-term health risks, including chronic diseases later in life (Booth et al., 2012; López Sánchez et al., 2022). Early school years are particularly critical for building motor competence and sustainable activity habits (Gallahue et al., 2015; Stodden et al., 2016). The Ecological Systems Theory highlights that children's fitness is shaped not only by individual behaviour but also by family and school contexts (Perumal et al., 2017). In addition, motivational aspects are crucial—according to Self-Determination Theory, autonomous motivation, satisfaction of basic psychological needs (autonomy, competence, relatedness), and enjoyment of physical activity strongly influence children's engagement and long-term fitness outcomes (Ryan & Deci, 2000; Standage et al., 2005).

The dissertation therefore examines one-year changes in physical fitness among Lithuanian primary schoolchildren (aged 7–11), identifying determinants at the individual, interpersonal, and institutional levels, while also considering motivational factors through the lens of Self-Determination Theory.

METHODS

A longitudinal study was conducted with a representative sample of primary schoolchildren. Physical fitness was assessed through standardised field-based tests; motivation, behaviour, and contextual determinants were measured using validated questionnaires. Statistical analyses were applied to explore associations between changes in physical fitness and individual, interpersonal, and organisational variables.

RESULTS

Children's physical fitness improved over one year, though changes varied by age and gender. Higher levels of both organised and unorganised physical activity, normal body mass index, and greater satisfaction with exercise were associated with better fitness outcomes. Family environments were generally supportive of healthy behaviour, yet parental physical activity levels and subjective perceptions of a favourable context did not translate into higher child activity levels. In contrast, organisational factors—particularly school involvement in physical activity promotion projects, school size, and principals' competencies in physical education—showed the strongest and most consistent associations with positive changes in physical fitness.

CONCLUSIONS

Physical fitness in Lithuanian primary schoolchildren improves annually, but the extent and direction of change differ by subgroup and attribute. Individual activity levels and motivation remain

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important, yet organisational determinants emerge as the most influential and modifiable factors, highlighting the central role of schools in promoting children's health and physical fitness.

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