

Associations Between Motor Competence and Global Mental Health in Children and Adolescents: A Systematic Review and Meta-Analysis

Tanja Pöyliö¹, Anni Pohjanvirta¹, Katie Robinson², David R. Lubans², Timo Jaakkola², Mikko Huhtiniemi¹

¹ Faculty of Sport and Health Sciences, University of Jyväskylä, Jyväskylä, Finland

² University of Newcastle, Newcastle, Australia

The objective of this study was to investigate the associations between motor competence and global mental health in youth through longitudinal, cross-sectional, and experimental research designs. A systematic search was conducted across five electronic databases: CINAHL Complete, PubMed, PsycINFO, SCOPUS, and SPORTDiscus. To be eligible for inclusion, studies had to meet the following criteria: (1) peer reviewed and written in English, (2) published after 2014, (3) involving healthy, typically developing children and adolescents aged 5–19 years, (4) reporting quantitative associations between at least one aspect of motor competence and at least one subscale of global mental health, and (5) employing cross-sectional, longitudinal, or experimental designs. Titles, abstracts, and full texts were screened, data were extracted, and risk of bias was assessed by two independent researchers. The quality of the studies was evaluated using the National Heart, Lung, and Blood Institute (NHLBI) ‘Quality Assessment Tool for Observational Cohort and Cross-sectional Studies’ (2021). Meta-analysis was performed using structural equation modelling (*R software*), and funnel plots along with Egger’s regression test for asymmetry were conducted. A total of 6,049 records were identified after removing duplicates. Seventeen studies were included in the systematic review, although two were excluded from the meta-analysis due to insufficient reporting of required results. The majority of the studies were cross-sectional ($n = 14$), with the population predominantly consisting of children ($n = 13$). Motor competence demonstrated a small but positive association with global mental health (effect size (ES) = 0.30; 95% confidence interval (CI) 0.20–0.40). This association was moderated by study design, age, type of motor competence assessment, risk of bias, domains of motor competence and mental health outcomes.

These findings indicate a small and positive association from motor competence to global mental health in youth. Future research should prioritise experimental study designs to better elucidate the underlying mechanisms of this relationship.

