

Effects of Physical Activity on Social Anxiety, Loneliness, and Mobile Phone Addiction Among Rural Left-behind Children: A Cross-lagged Study

Changfen Lu, Shijing Yuan, Xiaobing Luo*

School of Physical education and sports, Central China Normal University, Wuhan, China

Email address:

lcfccnu@126.com (Changfen Lu), ysj_2016@126.com (Shijing Yuan), lxbccnu@126.com (Xiaobing Luo)

*Corresponding author

Abstract

Introduction: Mobile phone addiction has become a prevalent issue in today's Internet-driven society. Rural left-behind children, often lacking parental companionship, are particularly vulnerable to relying on mobile phones to fill emotional voids and seek comfort. Engaging in sports activities could serve as an effective solution to address this behavioral challenge. **Objective:** This study aims to investigate the longitudinal relationship between physical activity and social anxiety, loneliness, and mobile phone addiction among rural left-behind children. **Methodology:** The Physical Activity Rating Scale (PARS-3), Social Anxiety Scale for Children (SASC), Loneliness Scale (UCLA), and Mobile Phone Addiction Index Scale (MPAI) were used to investigate 403 rural left-behind primary and secondary school students from four middle schools and four primary schools in certain townships in central China. Data were collected twice, with an interval of three months, and the cross-lagged model was analyzed by Mplus8.3. **Results:** (1) The amount of physical activity exhibited a significant negative predictive effect on social anxiety ($\beta = -0.682$, $p = 0.000$), loneliness ($\beta = -0.584$, $p = 0.000$) and mobile phone addiction ($\beta = -0.628$, $p = 0.000$) among rural left-behind children during the same period. (2) Engaging in spontaneous physical exercise can significantly predict reductions in social anxiety, loneliness, and mobile phone addiction for these children; however, passive participation in physical activities did not show any predictive capability regarding these issues. (3) The level of spontaneous physical activity during vacation demonstrated a significant predictive influence on social anxiety ($\beta = 0.434$, $p = 0.002$), loneliness ($\beta = 0.335$, $p = 0.006$), and mobile phone addiction ($\beta = 0.557$, $p = 0.000$) among rural left-behind children in the subsequent school term. **Conclusion:** Physical activity has the potential to impact the mental and behavioral health challenges of rural left-behind children, including issues such as mobile phone addiction. Furthermore, spontaneous physical activity during vacations is more effective than school-based physical activity in addressing these issues.

Keywords

Left-Behind Children, Sports Activities, Mobile Phone Addiction, Social Anxiety, Loneliness