

Abstract

Background: Between 1994 and 2015 choosing bicycles as transportation for 16 to 20-year-olds adolescents has decreased by 64% in Switzerland, serving as the largest decrease of all age groups. The project DEFI VELO promotes cycling among adolescents, focusing on health, environmental and safety issues in form of a practical cycling training in schools. The aim of this study was to evaluate the short-term effects of DEFI VELO on adolescent's cycling skills. Furthermore, it was examined whether a correlation between the school distance, choice of transport, bicycle usage and cycling skills exists.

Methods: 76 adolescents ($M=17.1\pm 0.8$ years) were assigned to participate in the intervention group ($N=47$) or control group ($N=29$). Both groups performed a validated practical cycling skill-test. Assessment took place at baseline and 2 weeks after baseline. The intervention was conducted one week after the baseline test for the intervention group only. To analyze the effects of cycling training on the cycling skills multiple linear regression models adjusted for age, gender and baseline cycling skills were applied.

Results: Compared to the control group the overall cycling skills ($\beta=4.03$, $p=0.028$), cycling over a wooden plank with ladder profile ($\beta=1.09$, $p=0.047$) and controlled cycling over a step ($\beta=1.38$, $p=0.002$) significantly increased in the intervention group. A significant correlation between usage of bicycles, choice of transportation and cycling skills, was found. In contrast, no correlation could be found for school distance.

Conclusion: DEFI VELO was effective in improving adolescent's cycling skills over a short term. Cycling skills correlated with bicycle usage and choice of transport.