

CHRD 2024: Abstract Submission Form

Presenter Name

Isaak Fast

Presenter Status

Masters Student

Role in the project

Design

Analyze Data

Write Abstract

Research Category

Community Health / Policy

Title

The effectiveness of new Urban Trail Infrastructure on Physical Activity and Active Transportation: A Systematic Review and Meta-Analysis of Natural Experiments

Background

Cities are investing billions of dollars in new cycling infrastructure to support active transportation (AT) and physical activity (PA). Little empirical evidence exists describing the effectiveness of this infrastructure.

Objective

To determine the impacts of protected urban cycling infrastructure on population PA and AT.

Methods

We searched CINAHL, EMBASE (Ovid), MEDLINE (Ovid), SPORTDiscus, TRD/Transportation Research Information Services (TRIS), Web of Science and Google Scholar for articles published from 2010 to 2023. We included studies with experimental pre-post designs that reported PA, or trail counts for an intervention and control area. The interventions were limited to protected urban trails. Primary outcomes were individual physical activity (PA) and trail use counts. A modified risk of bias tool will be employed to assess the methodological quality of selected studies (Prospero ID: CRD42023438891).

Results

Three reviewers screened 3936 abstracts. 25 articles describing natural experiments of the effect of adding urban trails on changes in PA or AT were included: 12 (n=11,464) measured changes in PA, 8 measured changes in cycling traffic and 5 (n=4,957,696) measured changes in AT/bike use. Meta-analysis revealed that new trails increased PA among individuals living close to a trail, compared to those living far from a trail (SMD = 0.12; 95% CI: 0.04, 0.20; I² = 73%). This effect was marginally stronger when restricted to individuals living closest to trails (SMD = 0.14; 96% CI: 0.06 to 0.25, I² = 74%; n = 8234). No natural experiments to date have researched these impacts on children. All studies were at high risk of bias due to a failure to adhere to reporting guidelines for quasi-experimental studies.

Conclusion

Adding protected cycling infrastructure appears to increase PA and rates of AT for individuals living in neighbourhoods that receive them. The strength of this evidence could be enhanced with the application of principles of causal inference and increased racial, gender and socio-economic diversity of populations that receive new cycling infrastructure.

Do you have a table/figure to upload?

No

Authors

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