

S30.1 Do psychosocial factors moderate the association between neighborhood walkability and adolescents' physical activity?

De Meester F, Van Dyck DD, De Bourdeaudhuij I, Cardon G

PURPOSE: Ecological models emphasize the interaction between individuals and their environment. Furthermore, they posit that environmental variables influence physical activity (PA) not only directly but also indirectly through their interaction with other factors. This study explores if the association between neighborhood walkability and adolescents' PA is moderated by psychosocial factors using data from the Belgian Environmental PA Study in Youth (BEPAS-Y).

METHOD: BEPAS-Y recruited adolescents from 32 neighborhoods differing in objectively determined neighborhood walkability and income. Between 2008 and 2009, 637 adolescents (13-15 years; 49.4% boys) completed a survey measuring socio-demographic and psychosocial factors and wore an accelerometer for seven days.

RESULT(S): Multilevel-regression analyses revealed that for adolescents living in low-income neighborhoods, the association between neighborhood walkability and PA was moderated by perceived barriers and perceived benefits towards PA. Neighborhood walkability was positively associated with PA among adolescents, living in low-income neighborhoods, who perceived many barriers and few benefits, while for adolescents who perceived few barriers and many benefits, the PA level was high, irrespective of neighborhood walkability. For adolescents, living in high-income neighborhoods, none of the psychosocial attributes moderated the association between neighborhood walkability and PA.

CONCLUSION(S): The findings provide some support for the predicted interactions posited by ecological models. Improving neighborhood walkability might increase PA-levels of adolescents living in low-income neighborhoods, with less positive psychosocial profiles, or in other words; those who are most difficult to reach through PA interventions. However, in order to increase PA in large populations, interventions focusing solely on improving neighborhood walkability may not have the desired effect.

S30.2 How socio-economic status affects physical activity participation in Hong Kong adolescents

Cerin E, Lee L-CJ, Macfarlane D

PURPOSE: There is evidence that socio-economic status (SES) is associated with physical activity (PA) participation. Lower SES is predictive of lower levels of leisure-time PA. However, most of this research has been conducted in the West and on adults. SES inequalities in PA among youth and Asian populations remain underexplored. Thus, this study examined SES differences in PA among Hong Kong adolescents and explored environmental and psychosocial mediators of the relationships between SES indicators and PA participation.

METHOD: A sample of 181 adolescents (12-18) was recruited from 32 Hong Kong

neighborhoods varying in SES (median household income) and objectively-measured walkability (dwelling density and street connectivity). Moderate-to-vigorous PA (MVPA) was measured using accelerometers (N=88) and a questionnaire (N=181). Individual-level SES was measured using household income as reported by parents, while area-level SES was defined as the Census-based median household income in a neighborhood. PA-related environmental characteristics of schools and neighborhoods were assessed via self-report and Geographic Information Systems.

RESULT(S): Area-level SES was positively related to social support from family and total sports/recreational facilities within the school neighborhood. These two factors were in turn independently associated with self-reported MVPA and, thus, acted as cross-sectional mediators. While a positive association between individual-level SES and objectively-measured MVPA was found, no significant mediators of this relationship were identified.

CONCLUSION(S): The provision of sports/recreational facilities near schools and strategies aimed at enhancing family support for PA may be important factors to reduce SES differentials in MVPA among Hong Kong adolescents.

FUND SOURCING: Grant General Research Fund # HKU748309H awarded to Macfarlane (PI) and Cerin (Co-I).

S30.3 Neighborhood walkability in relation to multiple outcomes in US adolescents

Sallis JF, Conway TL, Kerr J, Saelens B, Cain K, Glanz K

PURPOSE: Neighborhood walkability has been frequently studied as a correlate of adolescent physical activity, but less studied in relation to sedentary time and BMI. This presentation examines all of these outcomes among US adolescents.

METHOD: N = 928 youth (460 boys; 468 girls; 12-17y) were recruited from high/low walkable and high/low income neighborhoods. Physical activity was assessed by accelerometer monitoring and self-reported leisure-time walking and active commuting to school. Youth reported time spent on school days in 6 sedentary activities. Sedentary items were examined separately and summed for total minutes per day. Accelerometers measured average sedentary minutes per day (<100 counts/min). Self-reported height and weight were used to compute BMI z-scores/percentiles. Mixed models and logistic regressions examined outcomes in relation to neighborhood walkability and income, adjusting for demographic covariates and clustering within neighborhoods.

RESULT(S): Neighborhood walkability was positively related to all three physical activity measures ($p < .005$). Although accelerometer-measured sedentary time was not related to neighborhood walkability, total self-reported sedentary time was negatively related to walkability ($p = .051$). Time spent watching television was the only significant individual sedentary behavior related to walkability ($p = .007$). There were no significant walkability differences for BMI or obesity status (≥ 95 th percentile).