

The Built Environment and Youth Physical Activity: A Review Based on the ALR Literature Database

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Need for comprehensive reviews

- The field of built environment (BE)-physical activity (PA) studies is growing
- Most existing reviews included only a small number of studies and/or focus on active transportation
- Only one published review of youth studies & PA
- Inconsistent findings
 - Measure of BE, PA (objective, report)
 - Domains of PA (transport, recreational, etc.)

Objective: To summarize findings from peer-reviewed papers on the BE-PA associations among youth

Approach:

- systematic search
- stratified by measurement methods of BE and PA
- descriptive

ALR Literature Database

<http://www.activelivingresearch.com/resourcesearch/literaturedatabase>

- Schedule: semi-annual literature search
- Source: Pubmed, Web of Science, Sport Discus
- Protocol: systematically developed, expert validated
- Entry: by trained research assistant (RA)
- Checking: by an RA and a supervisor
- Author approval invited

Search terms

PA/Obesity terms (titles only)	Environment terms (title or abstract)
<p>transport* OR commute OR commuting OR commuter* OR journey OR travel* OR walk OR walking OR cycling OR bike OR bikers OR biking OR bicycle OR bicycling OR active living OR physically inactive* OR fitness OR body mass index OR BMI OR automobile* OR leisure OR television OR TV OR obese OR obesity OR overweight OR sedentary OR exercise OR exercising OR exerciser* OR physical activity OR physically active OR play OR playing OR obesogenic OR weight OR car OR playing</p>	<p>Environment* OR sprawl OR neighbourhood* OR neighborhood* OR recreation* OR metropolitan OR rural OR urban* OR pedestrian* OR sport equipment OR play equipment OR exercise equipment OR geograph* OR aesthet* OR convenien*OR destination* OR trail OR trails OR park OR parks OR path OR paths OR distance* OR density OR access* OR planning OR location* OR polic* OR facility OR facilities OR crime OR architecture OR building* OR transit OR street* OR stair* OR playground* OR smart growth OR outdoor OR indoor OR connectivity OR new urbanism OR healthy places OR greenway* OR rail-trail OR home OR school OR schools OR land use OR traffic OR road* OR safe OR safety OR route OR routes OR workplace OR community OR communities OR attractive* OR green space* OR public space* OR open space* OR greenery OR amenity OR amenities OR walkable OR walkability OR residential OR residence OR sidewalks OR availability</p>

Number of Papers: 671

Search Papers

Browse Papers

Search Results

Background/Orientation

Feedback

Print Page

Results > Search

Search environmental variable categories

This section allows you to search the individual environment variables that authors report in their results sections and results tables. Essentially you will be browsing thousands of independent variables reported in these publications. Because researchers call their environmental variables different names (e.g. sidewalk vs. pedestrian facility, or availability vs. access) we have categorized the variable names so that you can search by themes rather than individual words. The individual word search would miss similar terms that you might be interested in viewing. There are still over 70 themes or categories that you can search. To avoid scrolling such a long list we have grouped the terms into 3 main categories.

If you use the Search Results function, you are taken directly to the results from the paper that apply (i.e. if you search for sidewalk only the results for sidewalk appear). You can click further to look at additional results from the papers that include sidewalk results or look at the study methods details for each paper.

Note: To add a selection, double click an option from one of the tabbed section areas on the left. To remove a selection from the right, double click it.

Specifier/Qualifiers

Physical Environment

Physical/Social

Access/Availability/Convenience/Ease/Presence/Oppo
Aesthetics/ Condition/Appeal
Architecture/Design/Plan/Layout
Awareness/Perceptions /Visibility
Connectivity/intersections
Cost
Count/Diversity/Frequency/Number/Rate
Density/Sprawl/Date Built/Traditional
Destinations/Places
Distance
Economics
Geographic Region
N/A

>>

Selected Categories

Inclusion Criteria

Criteria for ALR database

- English language
- DV: PA, weight status, sedentary behaviors
- IV: built/social environment attributes

Additional criteria for the review

- Observational study design
- Study population was children or adolescents (3-18 years of age)
- Sample size ≥ 50
- Test statistics for DV-IV associations were provided and significance could be determined

Data Extraction

Methodology

- Study design
- Study region
- Total sample size
- Age (i.e., children, adolescents, both)
- Year of publication
- Environmental measures
- Physical activity measures

Results in database

- All results coded
- Coded as “+”, “-”, “0”
- “+%”: the proportion of study results supporting the hypothesis over the total number of results for each environmental variable

Variables

- Overall PA
 - Self report
 - Objective
- Self report built environment
- Objective built environment

- % of results in expected direction

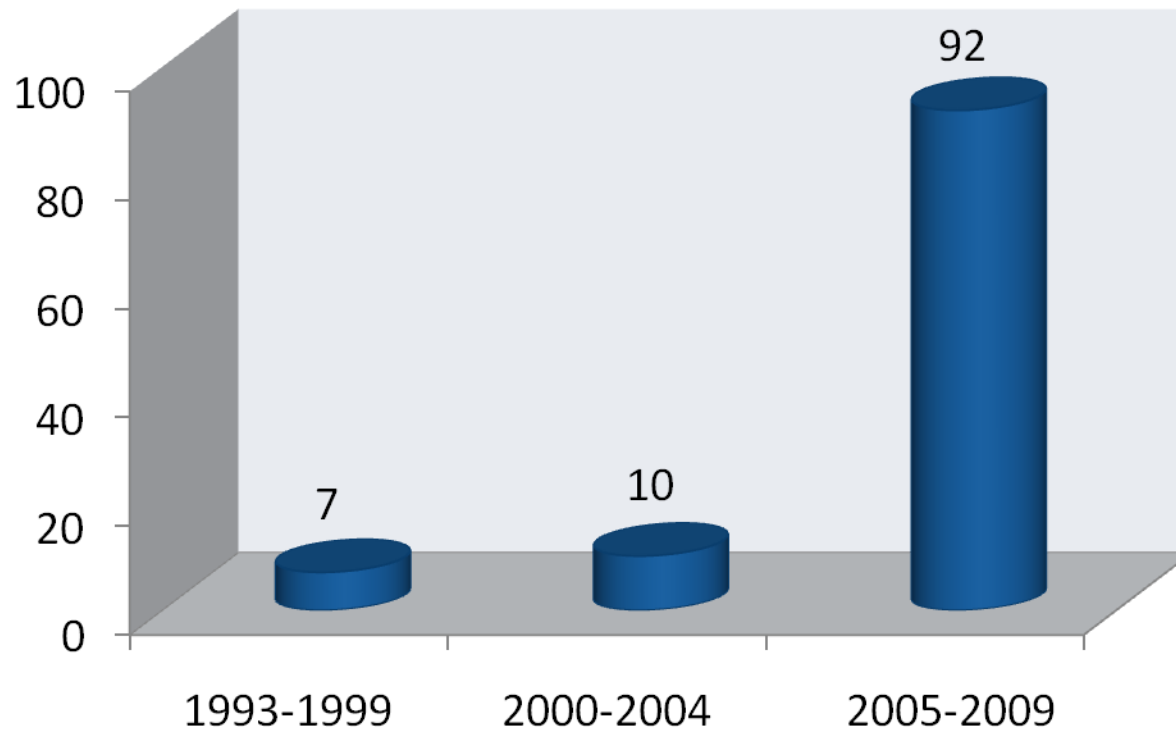
Hypothesized directions of association

Environmental Variables	Hypothesized direction of association
Parks	Better access, larger area, and closer distances
Recreational facilities	Better access, larger area, and closer distances
Walkability	Higher walkability
Land use mix/destination	Greater mix of land uses, more destinations
Residential density	Higher residential density
Street connectivity	Higher street connectivity
Vegetation	More vegetation
Walking/biking facilities	Presence and quality of walking/biking
Pedestrian safety structure	Presence of pedestrian safety structures
Home equipment	Presence of home equipment
Incivility/disorder	Absence of neighborhood incivility/disorder
Crime related safety	Less crime, better safety
Traffic speed/volume	Lower traffic speed/volume

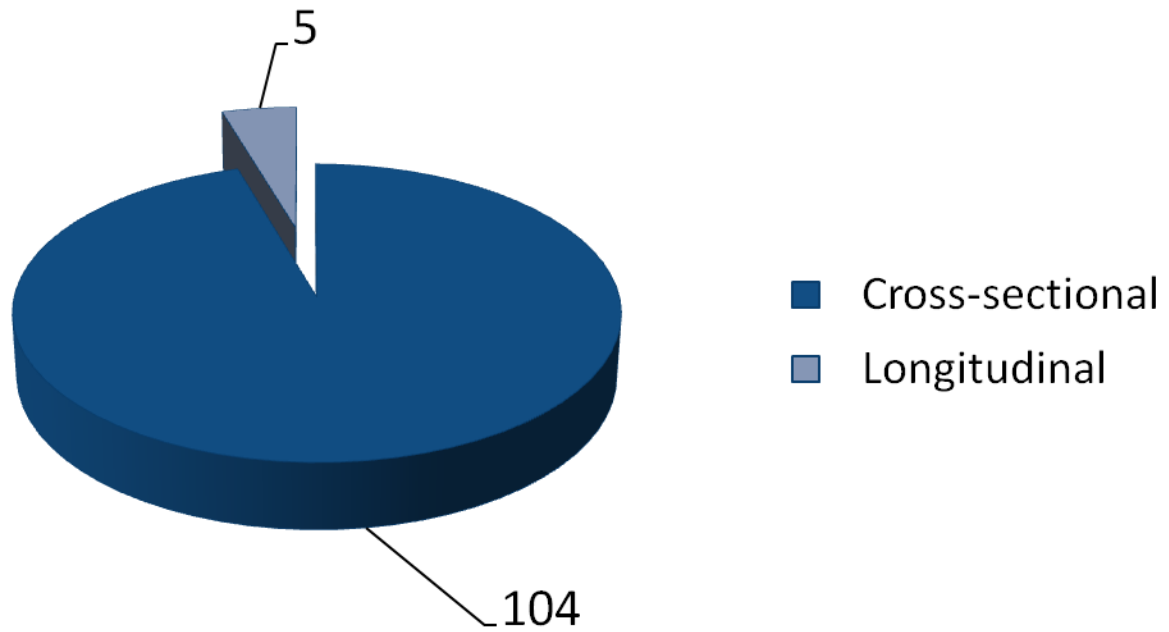


109 papers reviewed
1842 results coded

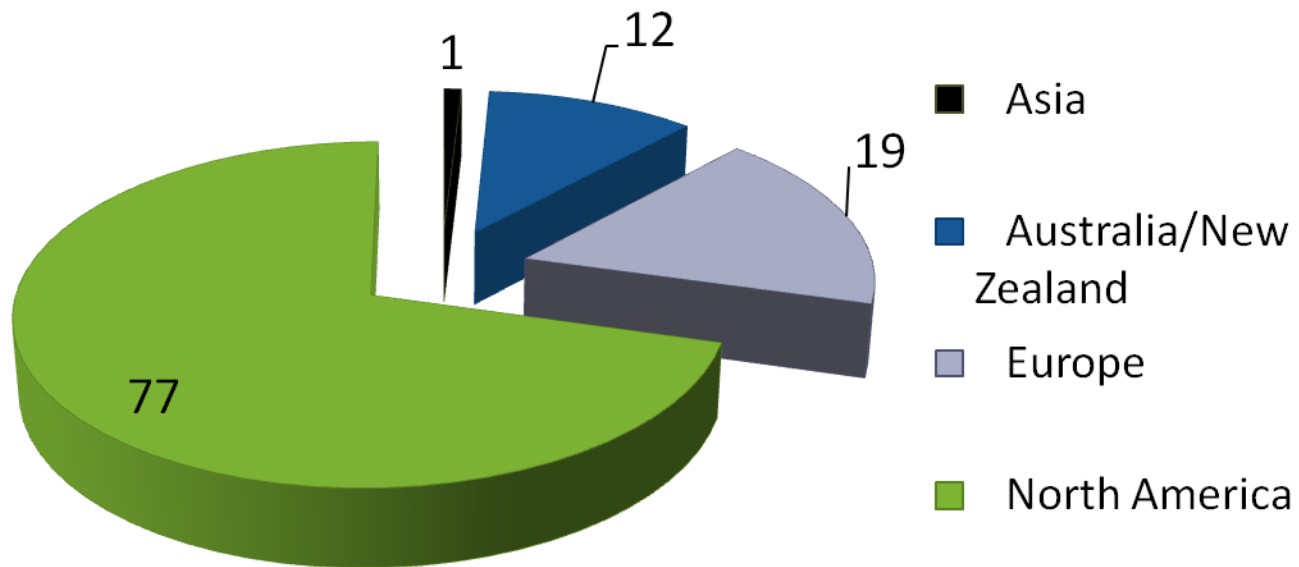
Year of publication (n=109)



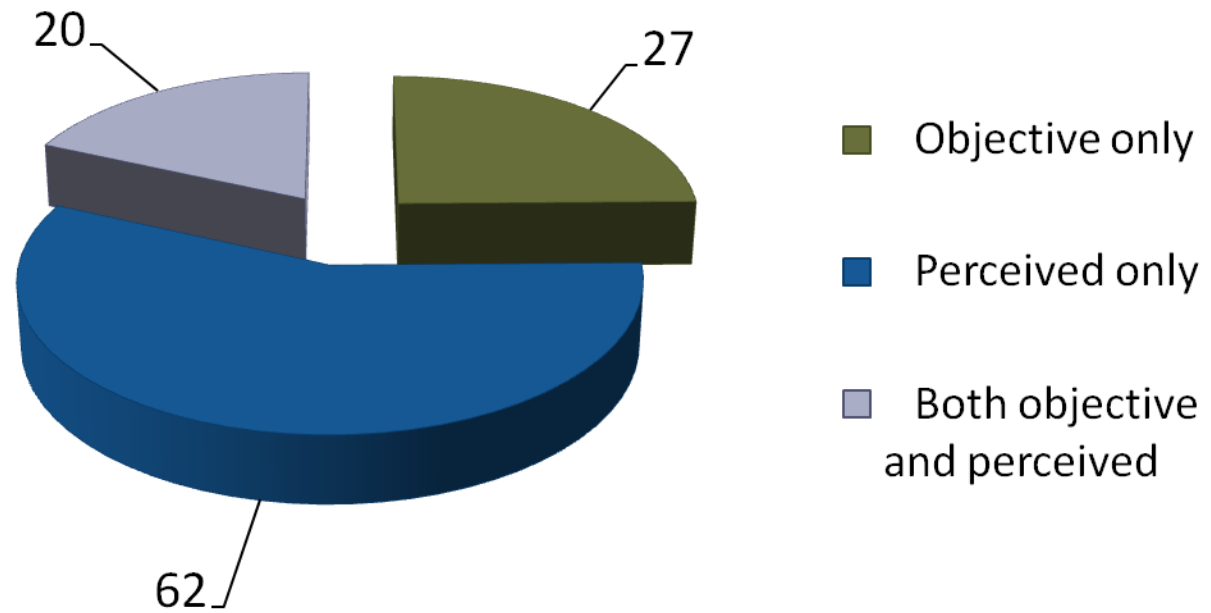
Study Design



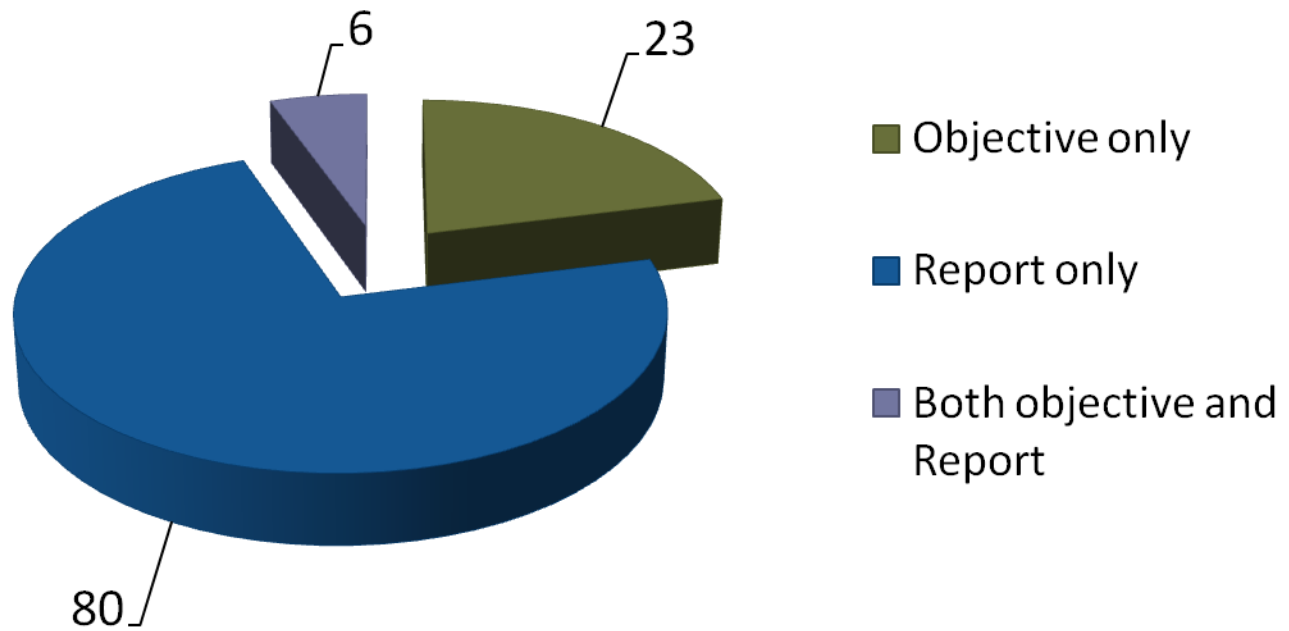
Geographic areas



Environmental measures



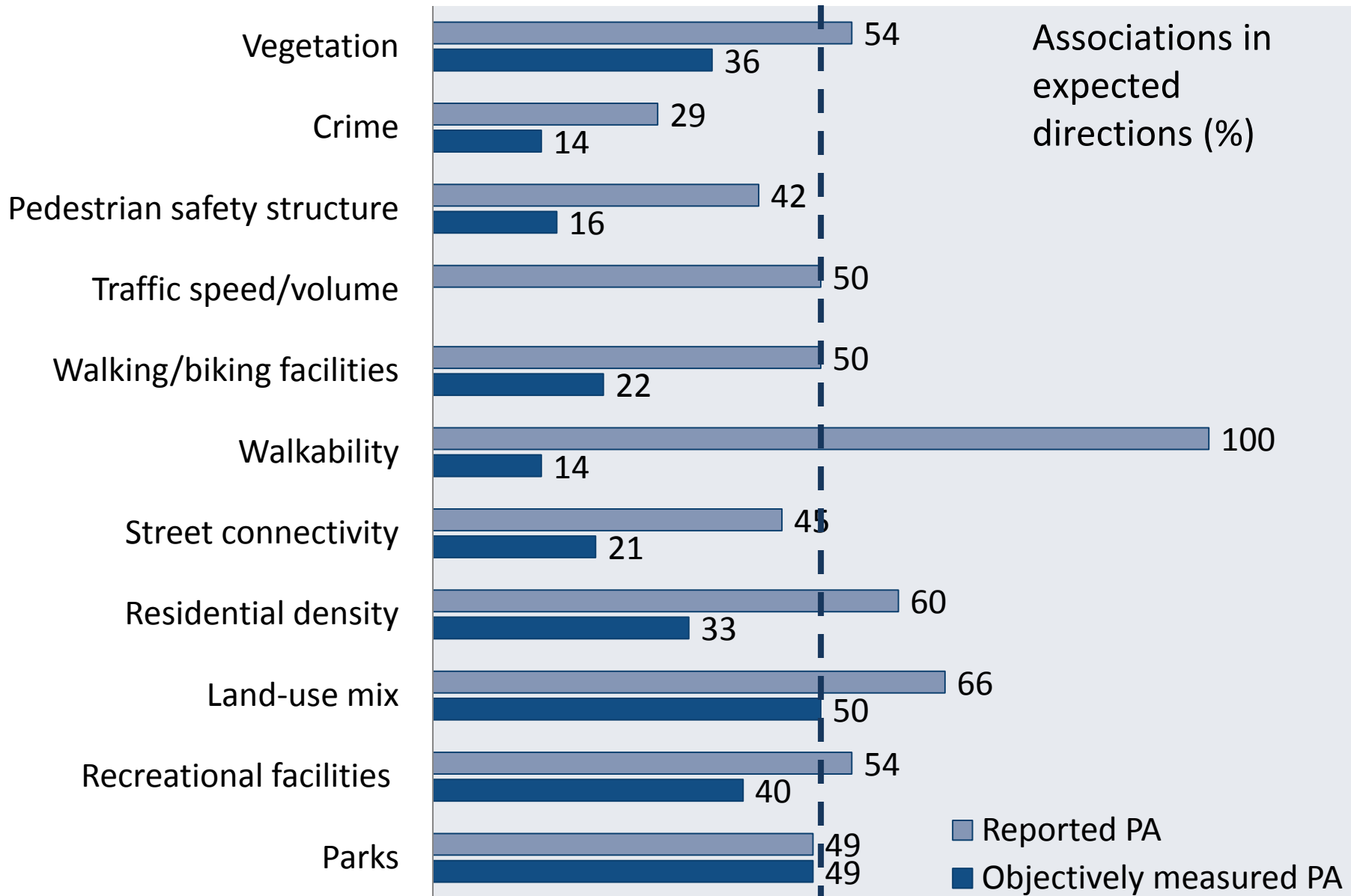
Physical activity measures



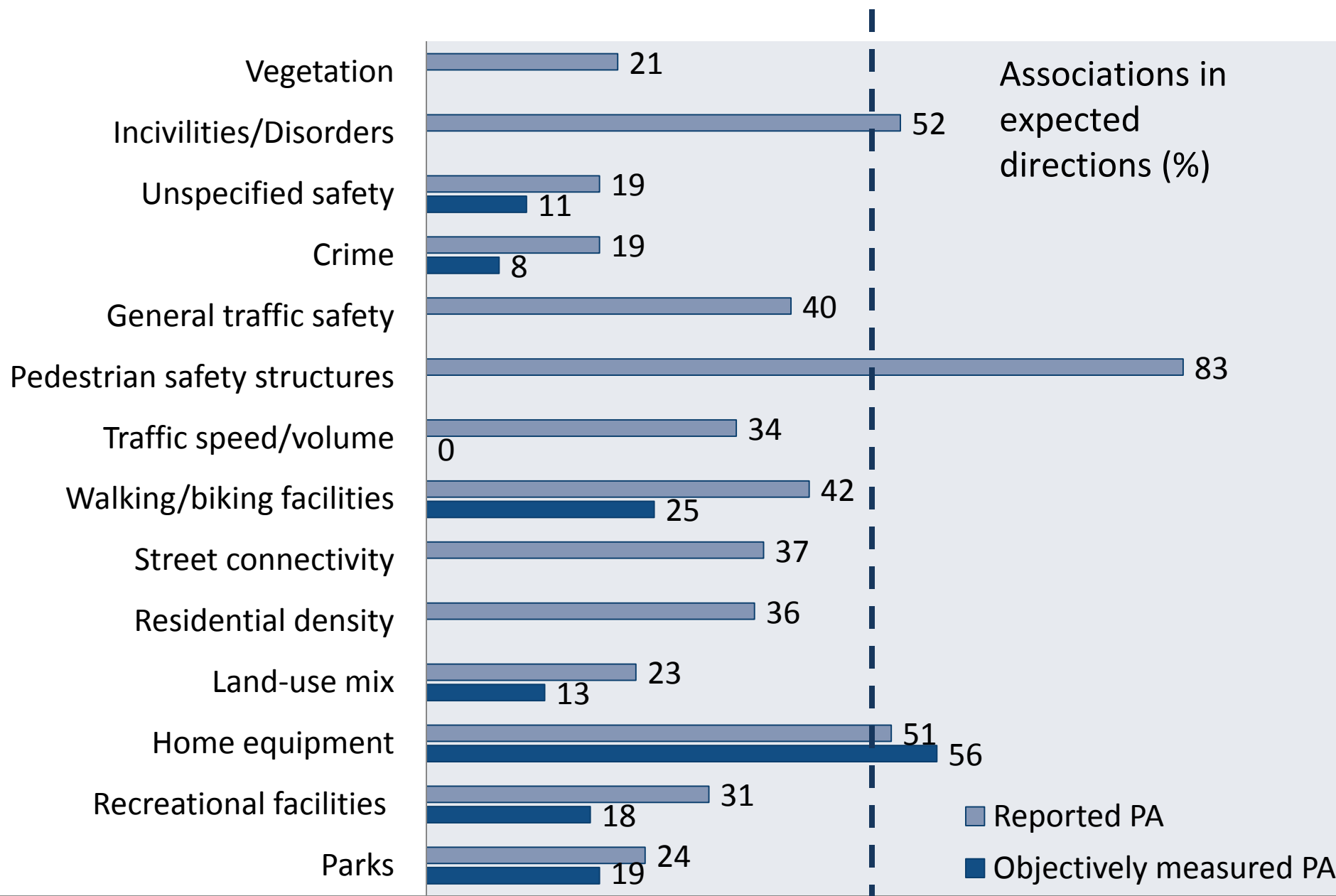
Variables

- Objective built environment (44 papers/587 results)
 - Self report PA
 - Objective PA
- Self report built environment (82 papers/1255 results)
 - Self report PA
 - Objective PA
- % of results in expected direction

Associations between Objectively Measured Built Environment Attributes and Physical Activity (PA) among Youth



Associations between Perceived Built Environment Attributes and Physical Activity (PA) among Youth



Supported associations by measurement

Environmental attributes

		Objective	Perceived
PA	Objective	36%	16%
	Report	44%	30%

Key Finding 1

- Measurement method influences associations between environmental attributes and youth physical activity.
- Findings inconsistent

Key Finding 2

Strongest evidence for objective environmental correlates of youth PA

- Walkability
- Residential density
- Proximity to recreation facilities
- Land use mix

Key Finding 3

Strongest evidence for perceived
environmental correlates of youth PA

- pedestrian safety structures
- home exercise equipment
- social incivilities/disorders

Limitations

- 1) No stratification for children and adolescents
- 2) Some variables could not be precisely classified due to lack of information about operationalization
- 3) Results from the same study and from different studies were given equal weight
- 4) No investigation of domains of PA

Recommendations for future studies

- Standardize measurement
- Include objective & perceived measures
- More longitudinal studies
- More studies outside the United States

Thank you!



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