Built Environment, Physical Activity and Quality of Life in Bogotá

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Built Environment III: Community Design, Physical Activity and Quality of Life

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Background

- Studies on Built Environment (BE) have been conducted mainly in developed countries with a primary focus on self-reported health.
- Differences in health priorities, socioeconomic, cultural, and environmental contexts.
- Rapid urbanization processes in the Latin America region.
- Understanding which urban factors and individual characteristics are associated with QOL is an important step to better guide programs and policies aimed at improving citizens well-being.

Objective

To assess the association between health related quality of life with built environment characteristics and physical activity among Bogotá adults.

Methods

- Multistage stratified sampling approach
- 30 neighborhoods were selected based on socio-economic status (SES), average slope of terrain, proximity to TransMilenio stations, and public park provision
- Five city blocks were randomly selected from all blocks within each selected neighborhood
- Ten households were then randomly selected in each block, one adult per household

Outcome Variables

- Quality of Life continuous score was obtained from a modified and culturally adapted version of the WHOQOL-BREF.
- The question *How positive do you feel about the future?* from the WHOQOL-BREF was used as an independent outcome variable.
- CDC Healthy Days questionnaire (HRQL–4), was used to determine number of sick days (0 vs. ≥1).
- Perceived health status (PHS) from the CDC HRLQL–4 was coded as excellent/good vs. fair/poor/very poor.

Built Environment Characteristics

- Built Environment characteristics were obtained using GIS and included indicators within the dimensions of density, diversity, design, and access to mass transportation systems (Transmilenio).

- Each variable was measured within the following buffers: 500 meters from the centroid of the block, within the neighborhood, and 1,000 meters from the neighborhood boundaries.

Individual Variables

- Gender
- Age (18–35 years vs. 36–65 years)
- Education (<high school vs. >high school)
- Marital status (no partner vs. partner)
- Occupation (working/studying vs. home activities/searching for a job/retired)
- SES based on the neighborhood strata (1–2 vs. ≥3)
- Physical activity during leisure time (meeting CDC recommendations vs. not meeting recommendations)
- Ciclovía participation (yes vs. no)

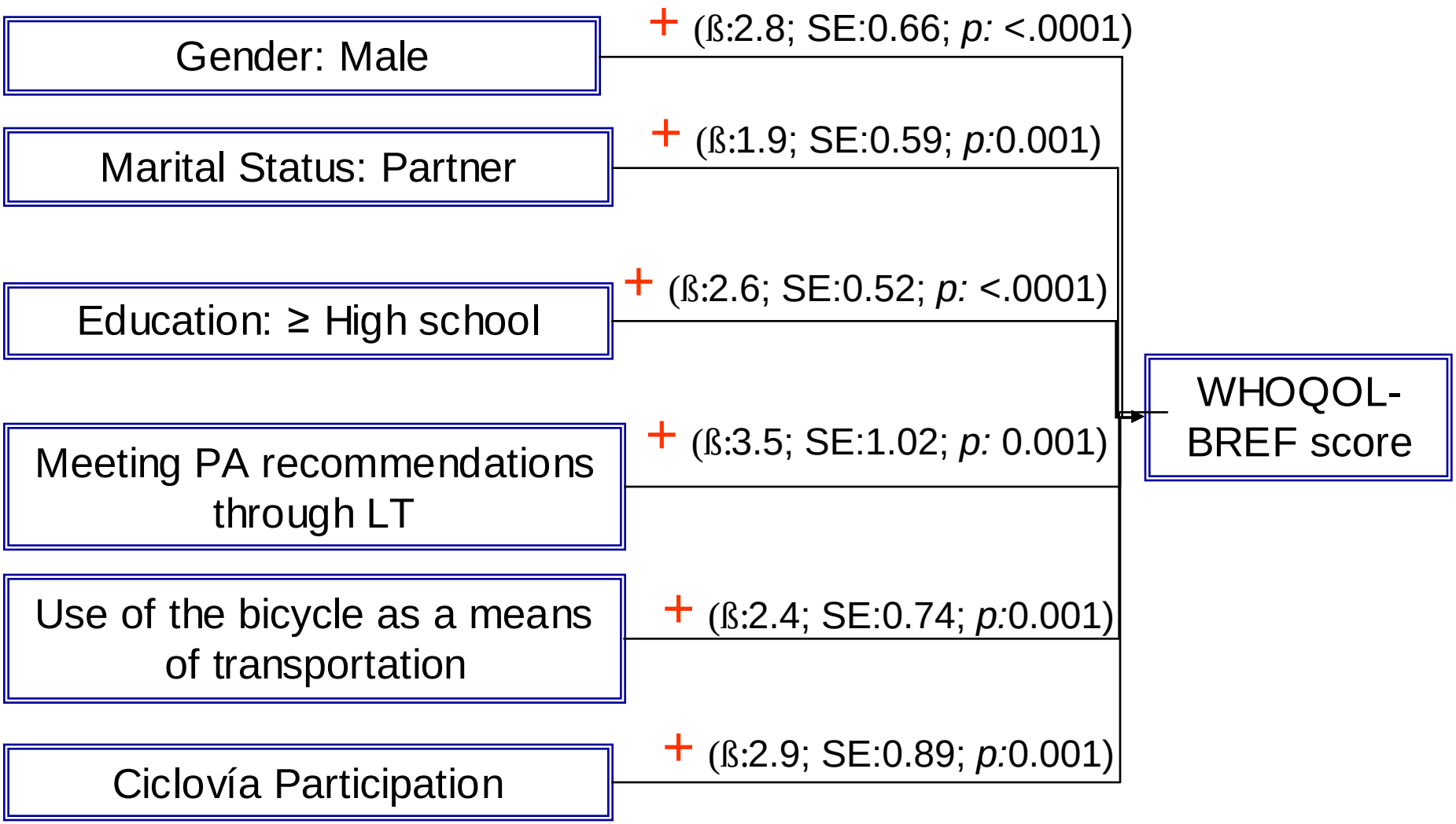
Statistical Analysis

- Hierarchical linear modeling was conducted using SAS 9.1
- Nonlinear modeling was conducted using HLM 6.02
- Multivariate analysis at the block level 500 m buffer, which included 90 clusters (blocks) and 1285 individuals

Results Health Related Quality of Life

- WHOQOL–BREF mean score was 91.3 (*SD* = 9.4)
- Reported mean for unhealthy days was 5.1 (*SD* = 9.1)
- Overall, 62% of the participants perceived their health status to be good or excellent
- Around 70% of the population reported feeling positive or very positive about their future

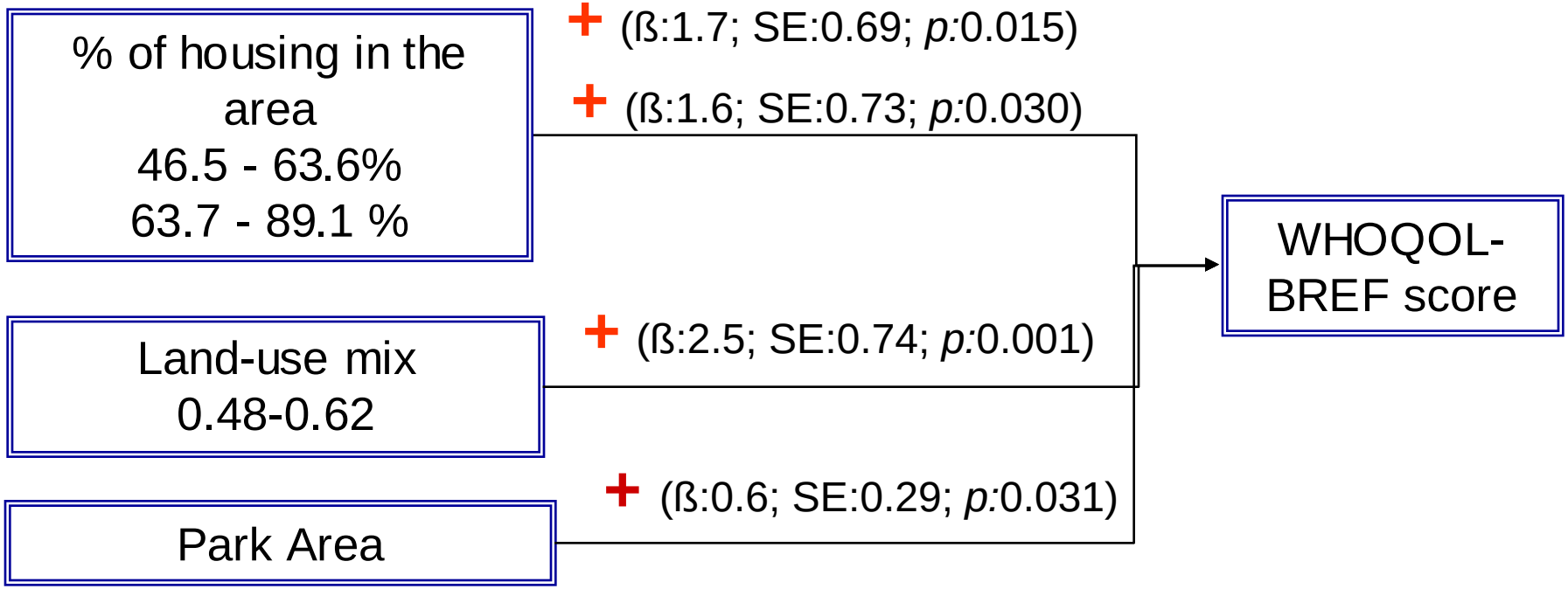
WHOQOL-BREF and Individual variables



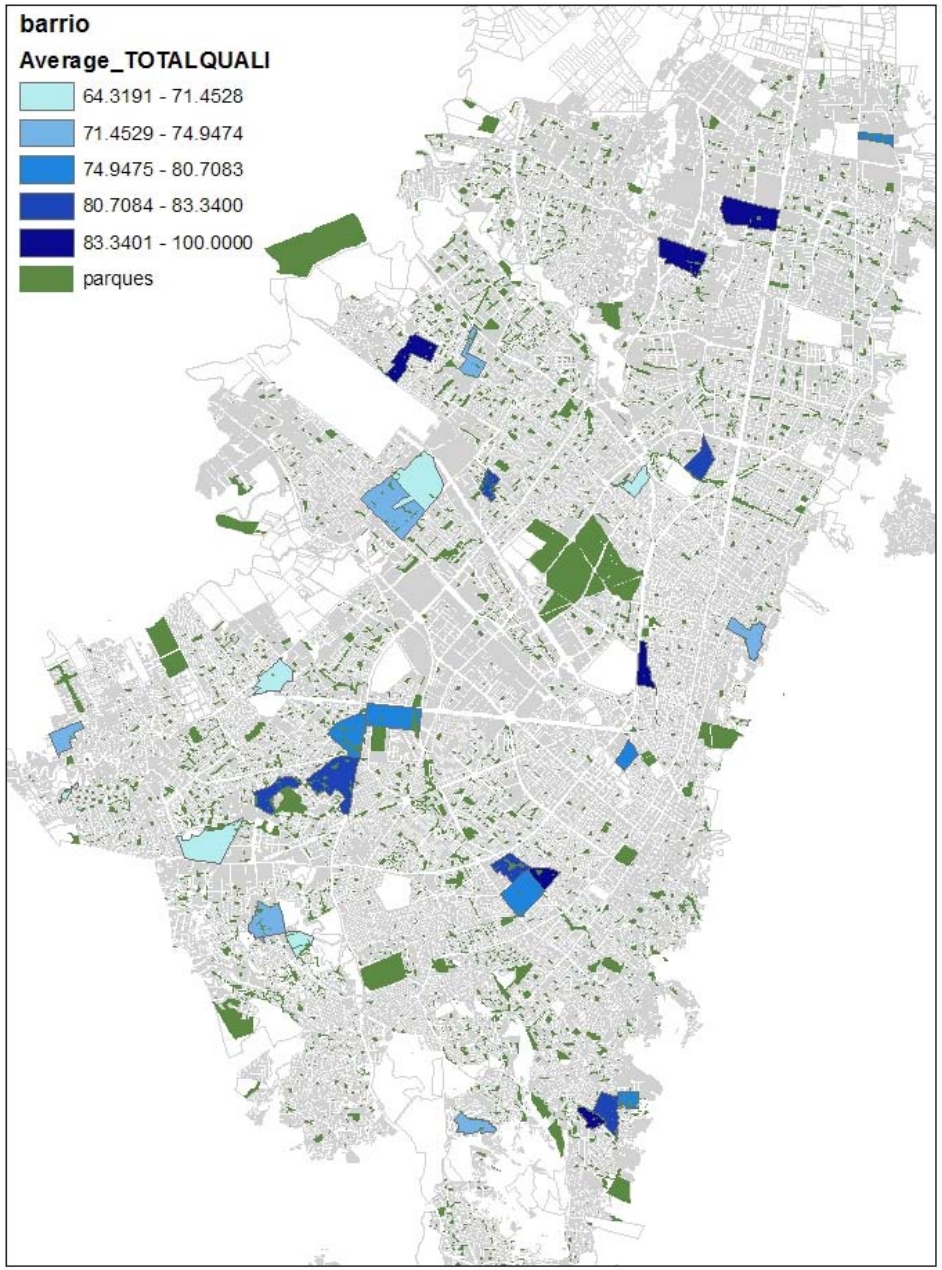
Influence of the Built Environment on Physical Activity and Quality of Life in Bogotá

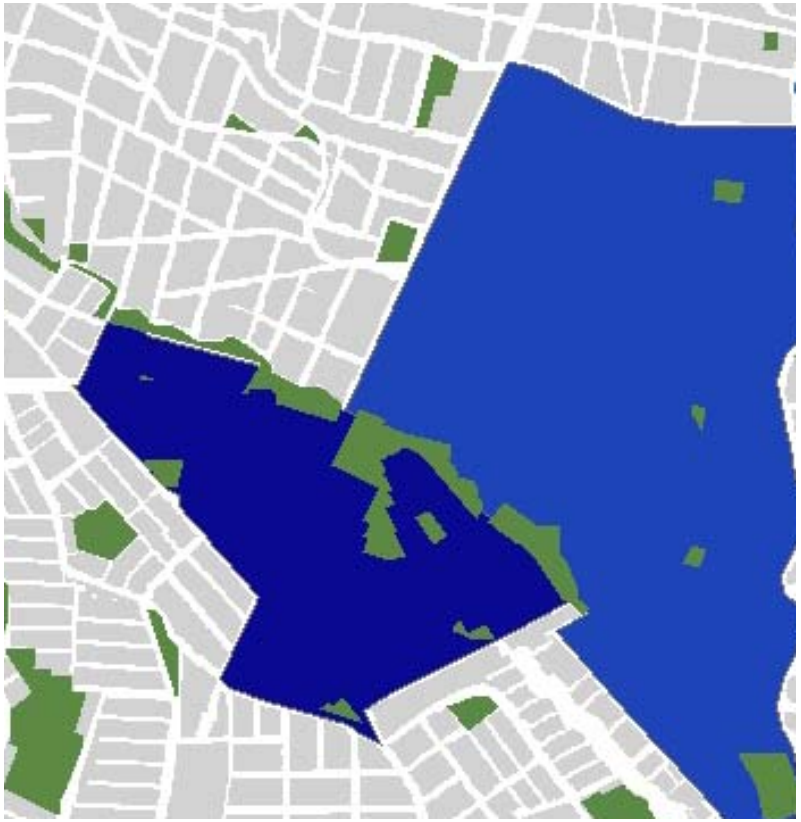
WHOQOL-BREF and BE Characteristics

BE characteristics within a 500 m buffer from the centroid of the block



Quality of Life/Parks





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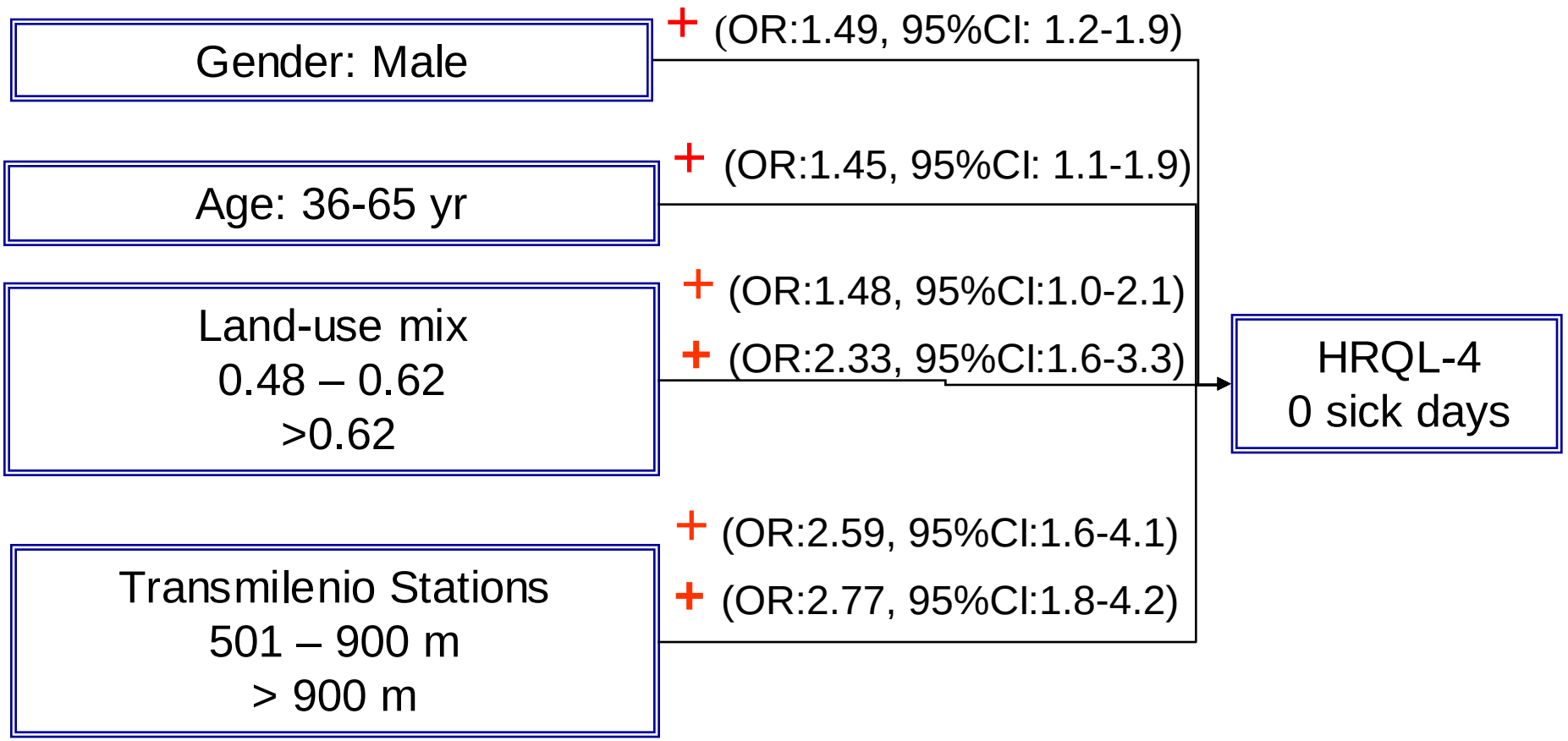
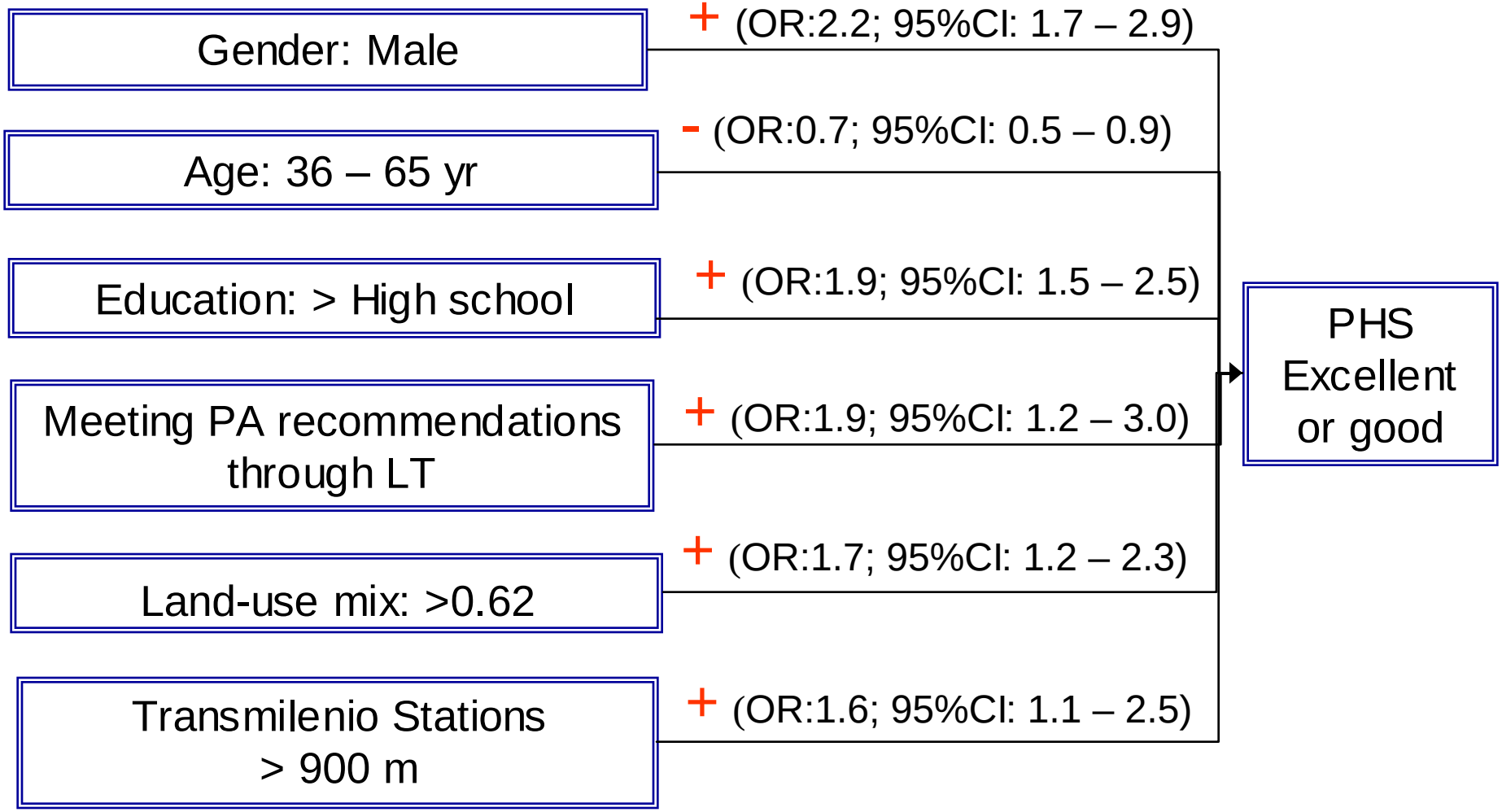
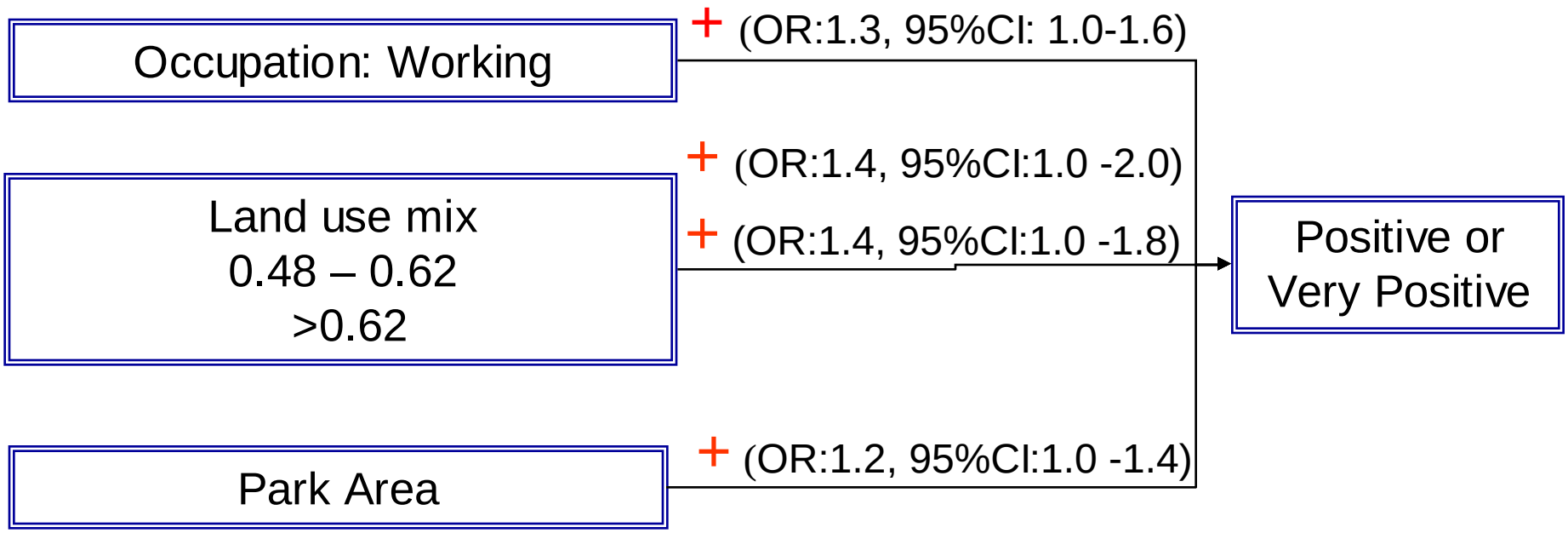
Results CDC Unhealthy Days



Results Perceived Health Status



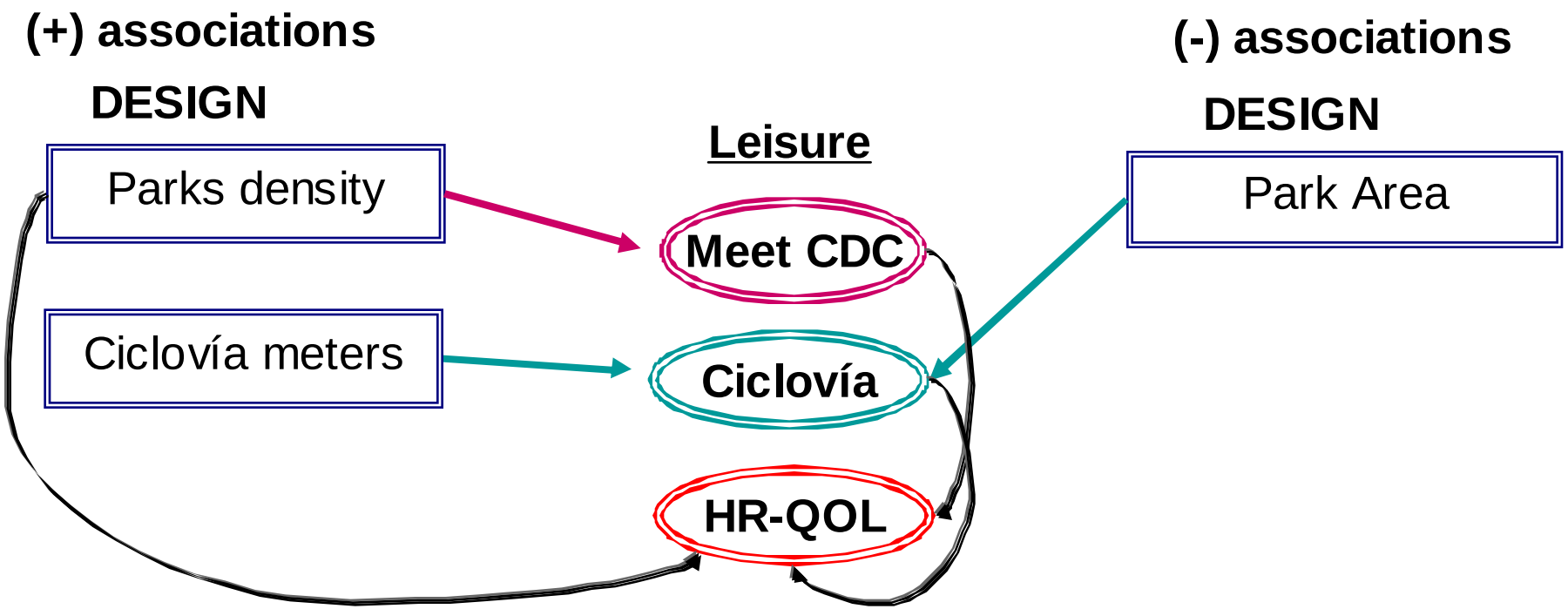
Results Feeling Positive about the Future



Conclusions and Implications

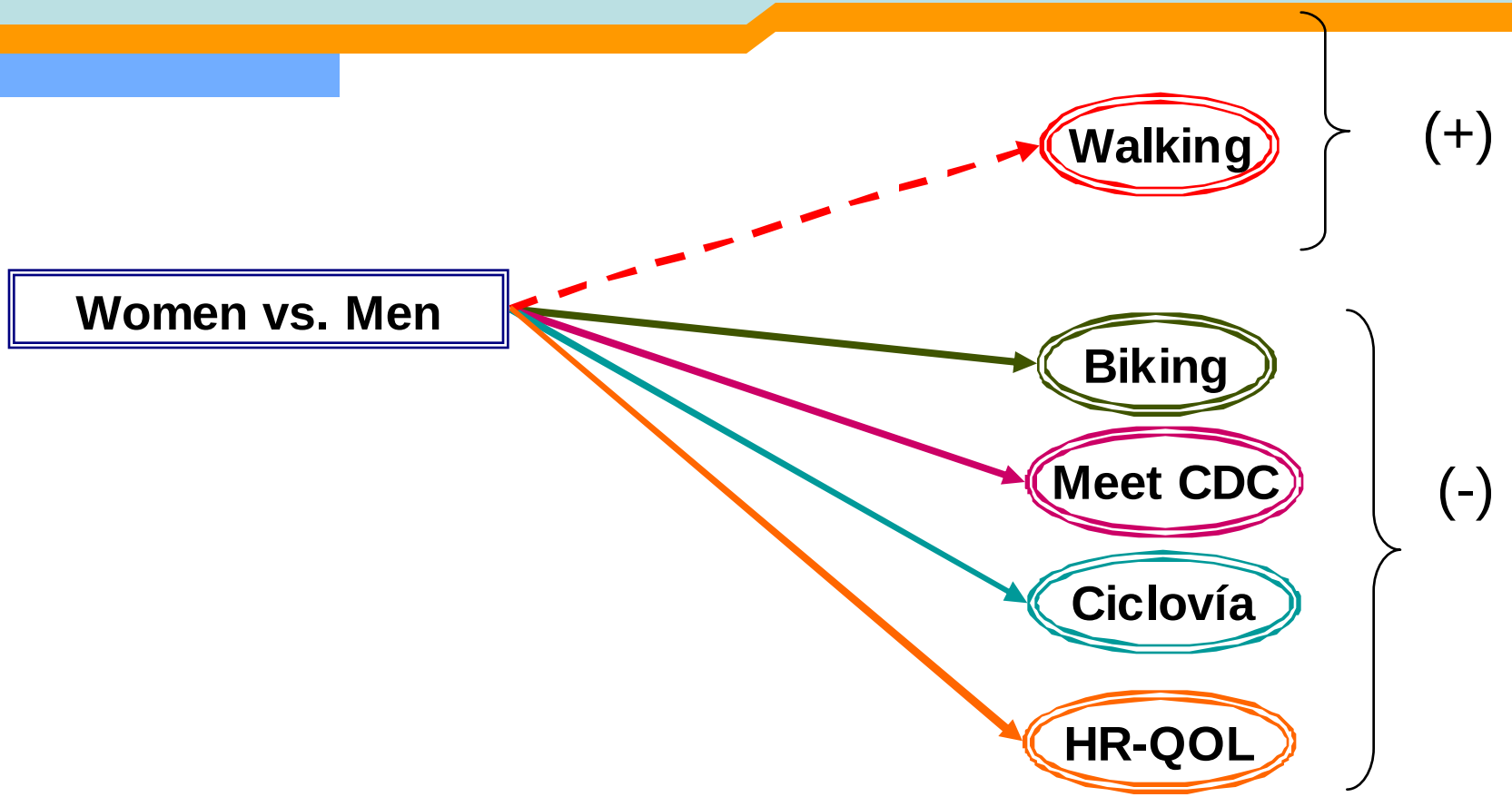
- In a rapidly urbanized Latin American city, like Bogotá, built environment characteristics of the neighbourhood are associated with HR-QOL.
- PA during leisure time and bicycling for transportation are associated with HR-QOL.
- To promote HR-QOL is important to continue public space recovery strategies, park maintenance and maintain land-use mix.
- PA programs and BE factors should be considered in the implementation of policies and planning programs aimed at improving citizens well-being.
- Importance of residential areas on HR-QOL probably linked to safety factors

Conclusions and Implications



- Importance of parks in promoting leisure PA and HR-QOL
- Ciclovía as a complementary recreational program (linear park) to the few large metropolitan parks of the city. (4.7m2/habitant)
- Ciclovía-Recreovía invested $1.5 million usd in 2006, reaching on average 1 million people per month

Conclusions and Implications



Gender disparities on HR-QOL & physical activity domains underscores the importance of developing PA programs that address gender preferences and differences

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