

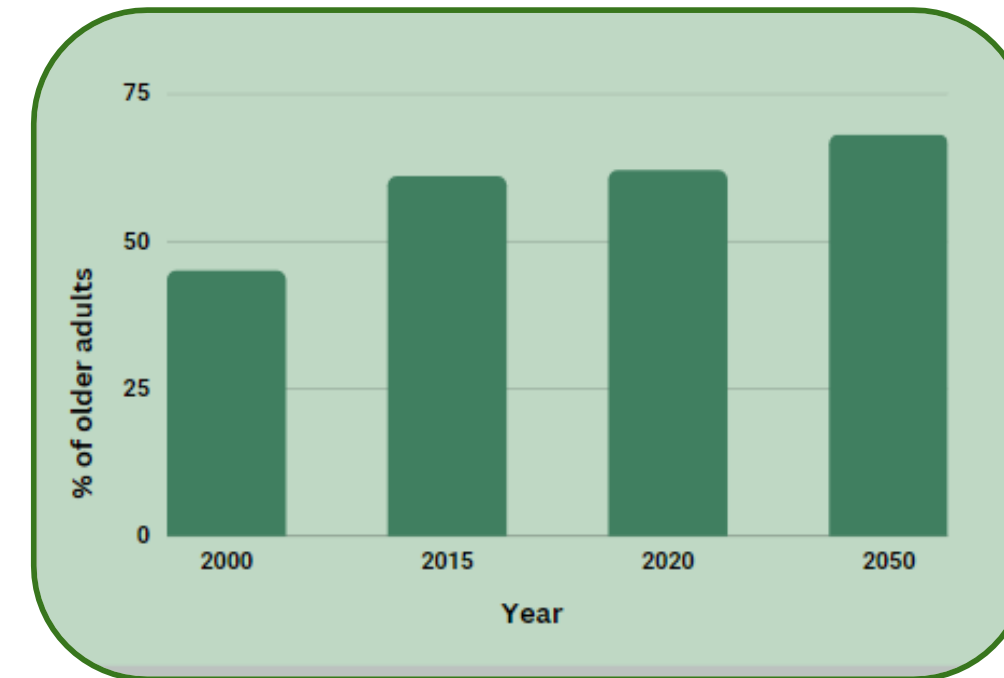
Quality of Urban Greenspace (UGS) and Older Adults' Physical Activity: A Systematic Review

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Introduction

- Regular physical activity (PA) is crucial for healthy aging, yet global inactivity rates are alarming.
- Older adults' lack of PA often results from the (a) lack of greenspaces, or (b) the difficulty of accessing the existing greenspaces, or (c) the lack of age-friendly facilities in the greenspaces.



Older adults living in urban areas projected to reach 68% by 2050.

Figure 1. Projection of urban older adults: 2000 to 2050 (UN, 2021).

- With the aging population projected to rise, enhancing built environment for their well-being deserves policy attention.
- Urban greenspaces (UGS) has been recognized as an intervention with manifold benefits: Promoting PA, mental well-being, and social connections
- Recognizing UGS qualities influencing usage is vital.

Goal: This systematic review paper aims to fill in the evidence and knowledge gap in evaluating the relationship between the quality of UGS and urban older adults' PA behavior.

Methods

- A systematic search was performed in two electronic databases, PubMed and CINAHL. The review was limited to the articles that were published within the last ten years (2013 to 2022).
- The search terms were constructed using the PICOS (participants, interventions, comparisons, outcomes, and studies) framework.

Search Strategy and Search Terms

Domains	Search Terms
Population	Aged, Elderly, Older adults, and Senior/s
Intervention	Park, Play ground, Green space, Sport field, Recreation area, Public ground, Public park, Outdoor, and Greenway and Green infrastructure
Comparison	-
Outcomes	Exercise, Physical activity, Physical health, Walking, Moderate-to-vigorous exercise, Cycling, Biking, Bicycling, Active play, Leisure, Sports
Study design	Quantitative studies only

Methods cont.

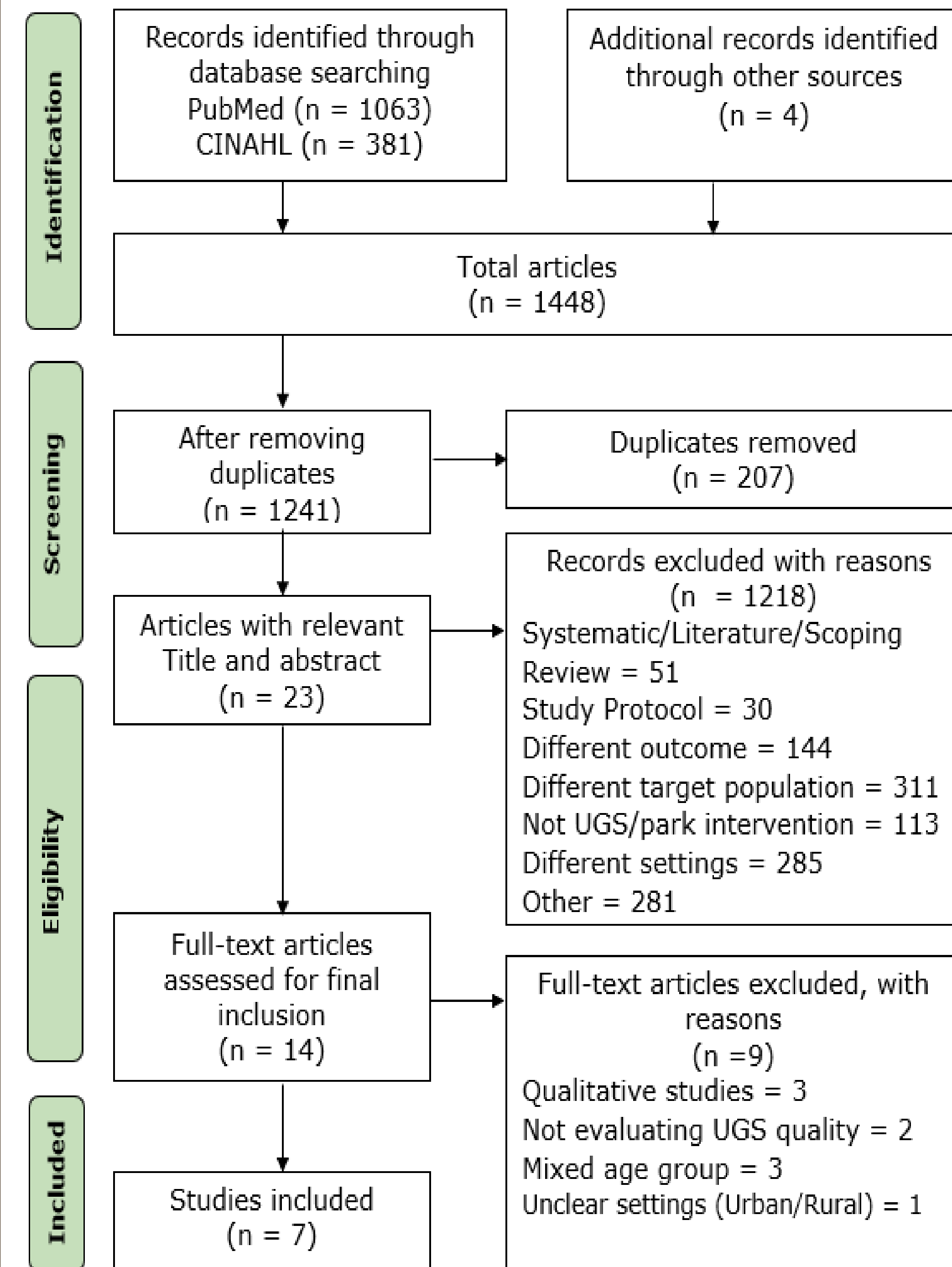


Figure 2. Study selection process

Findings

Article Summaries

Study reference, Location	Population	Age range, Means age, % of Female	SES
Chong et al., 2019; New South Wales, Australia	Residents of the city with T2D	≥45, 59.5, 52	Majority of the participants country of birth is in English speaking countries, 1/4 did not complete high school
Miralles-Guasch et al., 2019; Barcelona, Spain	Residents of the senior housing	Elderly, age not mentioned, 54% between 65 and 75, 44	High- and low-income neighborhood
Zandieh et al., 2019; Birmingham, United Kingdom	From Social centers of selected wards	≥65, 74.2, 57	High and low deprivation areas
Zhang et al., 2019; Hong Kong, China and Leipzig, Germany	Park users	≥60, 69.96, 42 ≥60, 72, 47.2	na
Zhai et al., 2020; Shanghai, China	Park users	≥60, 60, 43.7	na
Liu et al., 2021; Dalian, China	From inner city, the fringe of the city and the area between the inner city and the fringe	>60, Equally distributed, 49.7	na
Zhang et al., 2021; Guangzhou, China	Residents, more than 6 months	>60, 79% between 60 to 75, 56.3	na

***All studies had cross-sectional study design

Findings cont.

Summary of Findings

- | UGS types studied | PA measured |
|---|---|
| <ul style="list-style-type: none"> Parks and gardens Neighborhood greenspaces Neighborhood parks | <ul style="list-style-type: none"> Walking Active time in the park Moderate to vigorous physical activity (MVPA) |

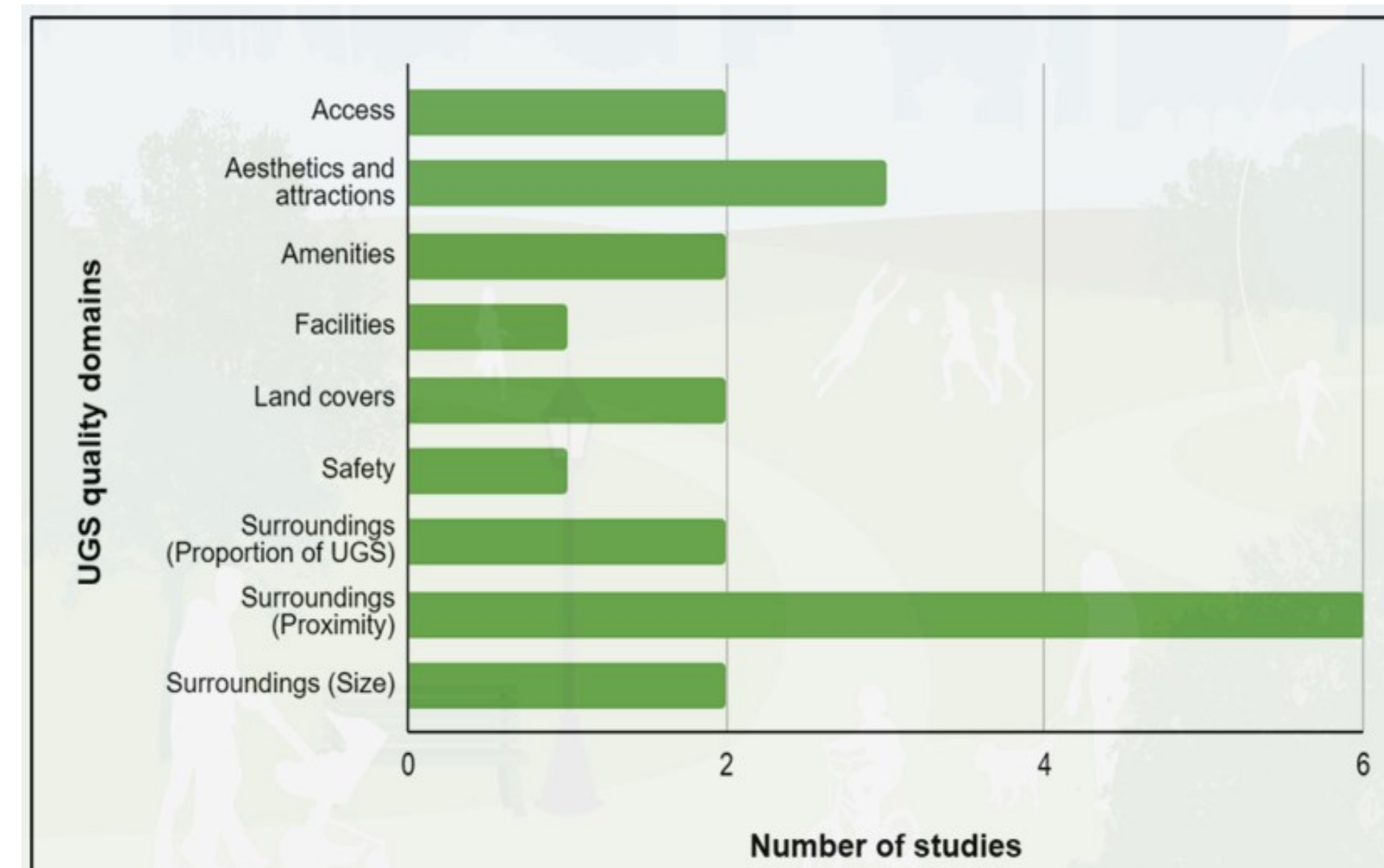


Figure 3. UGS quality studied in the 7 selected articles

UGS Qualities that Enhance PA

- Long and barrier-free pathways
- Presence of natural area
- Presence of outdoor fitness equipment
- Presence of activity areas (playgrounds, sports fields, and fitness areas)
- Surface easy to walk on
- Close proximity to UGS
- Large size of UGS

UGS Qualities whose impacts on PA was inconclusive

- Amenities (Park features)
- Attractiveness (Measured by presence of café, toilet, and so on)
- Safety in the park

Limitations

- All studies included cross-sectional study design
 - susceptible to selection, measurement, and confounding bias
 - have limitations in terms of establishing causality
- Heterogeneity in data collection
 - data was collected in 2 different time points
- Perceived measurement
- Limited number of articles on UGS quality
 - none from USA

Implications

Findings from this review would be helpful/crucial in designing more inclusive and age-friendly urban parks and greenspaces that should meet older adults' needs and expectations and encourage them to engage in more active lifestyle.

Future Directions

- More scientific studies need to be conducted to support the unique need of the aging population.
- Qualitative studies could be helpful in addition to quantitative ones.
- Pre-post evaluation of a newly designed or renovated park could be helpful.
- Measures of both PA and UGS quality need to be standardized to get comparable outcomes.
- Multidisciplinary collaboration on (multiple levels of government)

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