

2015-11

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Fiolka, R. "Park Quality and its Relationship with Neighbourhood Socioeconomic Status and Urban Form". 10th Annual Students' Union Undergraduate Research Symposium, November 26, 2015. University of Calgary, Calgary, AB.

<http://hdl.handle.net/1880/51007>

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Park Quality and its Relationship with Neighbourhood Socioeconomic Status and Urban Form

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Background

- Physical inactivity is responsible for an estimated \$6.8 billion of direct and indirect health care costs in Canada¹. Parks offer a free and public opportunity to encourage physical activity.
- Urban form and socioeconomic status (SES) are social determinants of health that can influence park use and physical activity^{2,3}.
- Little is known about whether park quality differs according to neighbourhood SES and urban form, and the impact this has on a population's health.

Objective

- To understand park quality and its relationship with neighbourhood SES and urban form.

Methods

- The City of Calgary Community Parks and Playgrounds list was used to select 65 parks within a sample of 9 neighbourhoods differing in socioeconomic status (low, low-medium, high-medium, and high) and urban form (grid-pattern, warped-grid, and curvilinear).
- Parks were systematically audited using the Public Open Space Tool (POST⁴; adapted to the Canadian context) through Google Street View to measure park quality.
- Spearman rank correlation were taken between all park quality scores (total park, functional amenities, feature amenities, safety, and walking quality score) as well as park size (sq/m).
- A one-way analysis of variance and post-hoc Least Significant Difference (LSD) test was used to compare all park quality scores between the neighbourhood types.

Methods



Figure 1. Example neighbourhood – audited parks outlined in red.

Results

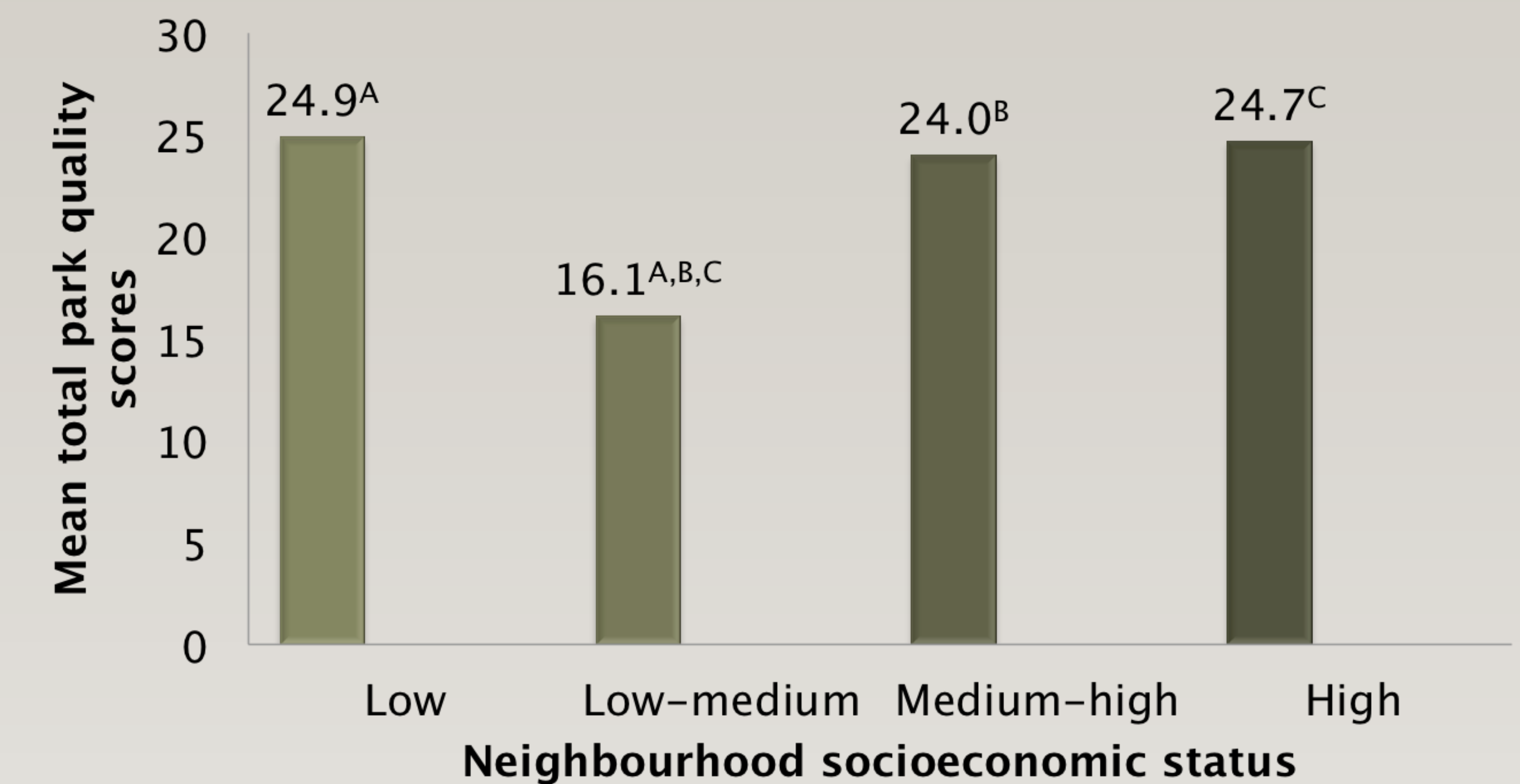
- Most park quality scores and the park sizes were significantly correlated with each other (Table 1).
- All park quality scores compared at differing SES strata levels showed significance between low-medium SES neighbourhoods and all other strata, the only exceptions were the safety and functional amenities score, and park size (e.g., Figure 2).

Table 1. Spearman rank correlations between park quality scores and size (sq/m) (n=65)*

	Total park score	Functional amenities score	Feature amenities score	Safety score	Walking quality score	Size
Total park score	1.00					
Functional amenities score	0.80*	1.00				
Feature amenities score	0.59*	0.55*	1.00			
Safety score	0.22	0.16	-0.06	1.00		
Walking quality score	0.96*	0.79*	0.49*	0.19	1.00	
Size	0.47*	0.39*	0.35*	-0.02	0.47*	1.00

* = Correlation is significant (p<0.05)

Results



- * = higher scores represent higher levels of park quality
- Means with same superscripts are significantly different (p<0.05) based on one-way ANOVA and post-hoc LSD test

Figure 2. Mean total park quality score by neighbourhood socioeconomic status*

- Safety score was significantly different between urban form types. This difference was found between curvilinear and grid type urban form neighbourhoods.
- Parks in grid neighbourhoods had more playgrounds, but fewer amenities that promote physical activity, compared to parks in other neighbourhood types.

Conclusions

- We found park quality to differ between neighbourhoods of different SES and urban form. More research is needed to see whether this influences park use, physical activity and health inequalities.
- This research has the opportunity to guide municipal park planners and policy surrounding open space in the urban setting – specifically around which features help to promote physical activity and park redevelopment.

Acknowledgment

- This project was undertaken as part of Rhianne H. Fiolka's practicum for the Health and Society 408 course as part of the O'Brien Center Bachelor of Health Sciences program. Peter Peller is also acknowledged for his contribution to the data collection.

- For more information contact Rhianne Fiolka at rhfiolka@ucalgary.ca

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