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Corresponding Author: Dr. Jeffrey Ray Masuda, PhD

Corresponding Author's Institution: University of Manitoba

First Author: Jeffrey Ray Masuda, PhD

Order of Authors: Jeffrey Ray Masuda, PhD; Cheryl Teelucksingh, PhD; Tara Zupancic, MPH; Alexis Crabtree, MSc; Rebecca Haber, MSc; Emily Skinner, BSc; Blake Poland, PhD; Jim Frankish, PhD; Mara Fridell, PhD

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Out of our inner city backyards: Re-scaling urban environmental health inequity assessment

Jeffrey R. Masuda^{1,2,a}, Cheryl Teelucksingh³, Tara Zupancic², Alexis Crabtree⁴, Rebecca Haber^{2,4}, Emily Skinner^{1,2}, Blake Poland⁵, Jim Frankish⁴, Mara Fridell^{1,2}

¹Department of Environment and Geography, University of Manitoba

²Centre for Environmental Health Equity

³Department of Sociology, Ryerson University

⁴School of Population and Public Health, University of British Columbia

⁵Dalla Lana School of Public Health, University of Toronto

^a Corresponding author: jeff_masuda@umanitoba.ca

Abstract

In this paper, we report the results of a three-year research project (2008 - 2011) that aimed to identify urban environmental health inequities using a photography-mediated qualitative approach adapted for comparative neighbourhood-level assessment. The project took place in Vancouver, Toronto, and Winnipeg, Canada and involved a total of 49 inner city community researchers who compared environmental health conditions in numerous neighbourhoods across each city. Using the social determinants of health as a guiding framework, community researchers observed a wide range of differences in health-influencing private and public spaces, including sanitation services, housing, parks and gardens, art displays, and community services. The comparative process enabled community researchers to articulate in five distinct ways how such observable conditions represented system level inequities. The findings inform efforts to shift environmental health intervention from constricted action within derelict urban districts to more coordinated mobilization for health equity in the city.

Keywords

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Highlights

A comparative adaptation of the Photovoice method provides a novel approach to assess health inequity at the scale of the city

Both positive and negative environmental conditions point to system level health inequities that are reported in perceptions and observations of stigmatization, exclusion, disdain, and disinvestment, and are resisted through affirmations of solidarity within affected communities

Health inequities in the city can be described as relational constructs, as seen through observable differences in environmental conditions between less and more affluent neighbourhoods

The research approach provides insight for community-driven policy action aimed at resolving health inequities in cities

Introduction

With the 50% of world's population now living in cities (United Nations Population Fund, 2007), the urban environment has come to the forefront of global public health priorities a key domain among determinants of population health (WHO Commission on the Social Determinants of Health, 2008). Yet, most indicators show that health inequities continue to widen in many cities despite concerted efforts by advocates, scholars, and policy makers working in the public health arena to address urban environmental problems (WHO (World Health Organization), 2003) (Wilkinson & Pickett, 2006). One study (Smith, Corvalán, & Kjellstrom, 1999) has estimated that up to one third of the global burden of ill health can be attributed to environmental factors. In Canadian cities, ever-widening socioeconomic polarization is threatening to undermine immense investments being made to mitigate emergent health threats caused by deteriorating environmental conditions in the city (Chen, Myles, & Picot, Online First). In this paper, the term “environmental health inequities” refers to the total configuration of inadequate, unresponsive, and/or discriminatory public and private sector programs and policies that result in uneven quality of environmental conditions and concomitant negative impacts on health and quality of life for people at the neighbourhood level (Bryant, Raphael, & Travers, 2007). For urban residents, environmental conditions encompass both the material geographies that constitute the built and physical environments of the city (e.g. buildings, parks, transportation infrastructure) as well as the social geographies (e.g. institutions, public services, community supports) which mediate the relationships between people and place. A persistent challenge to addressing environmental health inequities has been the inability to recognize, and therefore respond to, the root causes of uneven patterns of

environmental conditions between neighbourhoods with profoundly different histories, characteristics, populations, and community aspirations.

Since the beginning of the Canadian-inspired Healthy Cities movement over 20 years ago, there has been considerable effort to develop methods for assessing the mediating influence of the environment on the social determinants of health (Hancock, Labonte, & Edwards, 1999; O'Neill & Simard, 2006). For example, an empirical study in Japan (Takano & Nakamura, 2001) has found that over half of the variance in urban health can be explained by environmental factors that vary geographically at the city scale. Specific environmental characteristics known to affect health include: green space (Kuo, 2001), noxious land uses (Maantay, 2007), food deserts (Larsen & Gilliland, 2008), walkability (Cutts, Darby, Boone, & Brewis, 2009) air pollution (Burnett, Steib, Brook, Cakmak, Dales, Raizenne et al., 2004), soil contamination (Lambert, Boehmer, Feltham, Guyn, & Rizwan, 2011), local climate change impacts (Patz, Campbell-Lendrum, Holloway, & Foley, 2005), noise pollution (Evans & Marcynyszyn, 2004), and low quantity and quality of affordable housing (Sandel & Wright, 2006). Moreover, these studies consistently show that the pattern of conditions and impacts is not random, but is known to vary geographically alongside socioeconomic and ethnoracial distributions.

Ironically, while socioecological concepts of health owe a great deal to intellectual leadership by Canadian scholars, corresponding policy action in Canada on addressing their contribution to health inequities has been slow (Collins & Hayes, 2007; Masuda, Poland, & Baxter, 2010). Partly a consequence of an evidence deficit and partly an entrenched deference to biomedical reductionism in health policy, there remains a lack of widely agreed upon approaches to assessing and addressing the intersecting influences of

the built, physical, and social environments on health and quality of life. Crucially for research aimed at identifying the place-based root causes of health inequity, such approaches need to be capable of elucidating the power relations involved in determining the allocation of resources and risks within the city (O'Neill & Simard, 2006; WHO Commission on the Social Determinants of Health, 2008).

Part of the challenge in gaining understanding of system-level inequities within cities is that affected communities have not participated significantly in identifying research priorities (Hancock et al., 1999; Minkler, Breckwich Vasquez, Tajik, & Petersen, 2008). Communities that are affected by a disproportionate share of environmental burdens are often prevented from influencing change, in part because of a policy culture that privileges empirically quantifiable and reductionist evidence over forms of knowledge that come from deeply situated experiences in local contexts. Many have argued for robust participatory assessment approaches that can both deepen our contextual understanding of the influences of urban environments on population health, and support grassroots action for environmental health justice in urban and environmental policy (Masuda et al., 2010).

To contribute to this agenda, this paper reports on a study that developed a community-centered comparative approach to the assessment of environmental health inequities in three Canadian cities. The purpose of the study was to develop research approaches that: (1) acknowledge the differing needs, priorities, and capacities that exist within individual neighbourhoods negatively affected by environmental health inequities; and (2) inform more equitable urban planning and public health investments and interventions. Between 2007 and 2010, community research teams based in Vancouver,

British Columbia, Winnipeg, Manitoba, and Toronto, Ontario examined environmental health inequities from the perspective of people who live within low-income neighbourhoods often characterized as “the inner city”. The objectives of the study were:

- (1) To observe how the social determinants of health manifest through neighbourhood environmental conditions;
- (2) To compare and contrast differences in the social determinants of health between neighbourhoods of varying socioeconomic affluence; and
- (3) To ask questions about why such differences exist, who or what might be responsible for them, and what collective action might be taken to overcome them.

Our research teams used an adaptation of the popular Photovoice research approach (Wang, 1997; Wang, Yi, Tao, & Carovano, 1998) to examine the relationship between the social determinants of health and differences in neighbourhood-level environmental conditions. Informed by Freire, our approach was informed by a recognition of the role for research in collective consciousness-raising about the conditions that have circumscribed community action (Freire, 1972, 1973, 1993).

Literature Review

Urban environmental health assessment and its limitations

The literature on urban environmental health is vast, spanning numerous disciplines as well as quantitative and qualitative methodologies. However robust this knowledge is, the assessment of environmental health inequity has been limited, in part due to differences in the scale of analysis between methodological approaches. On the one hand,

there is mounting evidence at the city scale that highlights uneven patterns of exposure and health (in the case of risks) or access and health (in the case of benefits) relationships. However, this research belies an in-depth understanding of total environmental quality effects beyond available primary (e.g. passive air monitoring) or secondary (e.g. pollutant release inventories) data. Its focus on measurable physical health measures (e.g. asthma, cancer rates) also misses more nuanced and locally variable health-related outcomes of negative environmental conditions (e.g. mental health, quality of life) (Keller-Olaman, Eyles, Elliott, Wilson, Dostrovsky, & Jerrett, 2005; Masuda, Zupancic, Poland, & Cole, 2008). To-date, there is a shortage of effective research tools for monitoring conditions and impacts that are less amenable to quantitative measurement, including environmental benefits (such as opportunities for nutritious and dignified food procurement, adequate and safe public spaces, and non-discriminatory housing (Maller, Townsend, Pryor, Brown, & St. Leger, 2005). On the other hand, qualitative research has tended to valorize individual or small-group perspectives of local environmental health conditions, to the exclusion of comparative inter-neighbourhood and inter-city assessment that might reveal inequitable patterns of observable conditions between places (Heynen, 2003). Thus, there is a need for research approaches that can place qualitatively informed perspectives within a wider angle view that is capable of discerning difference, both within and across cities. Further, moving the assessment of environmental determinants of health inequity requires participatory forms of research that are informed by theories of social change, community empowerment, and environmental justice (Minkler et al., 2008).

The utility of Photovoice in assessing environmental health inequity

To resolve these identified knowledge gaps, we argue that the range of environmental influences on urban health must be ascertained through: (1) a means to include and support affected groups in articulating the interconnection between their lived environments and health; and (2) a mechanism to translate experiential knowledge into community responsive and actionable evidence for planning and policy. Photovoice is a grassroots-led methodology grounded in participatory action research that combines visual and narrative data to convey participant-photographers' sociocultural experiences to policy influencers. The method is based on Paulo Freire's theory of critical consciousness, which encourages oppressed people to question the historical and structural situations that lead to conditions of inequality, exclusion, and ultimately injustice (Carlson, Engebretson, & Chamberlain, 2006; Freire, 1973). The primary advantage of Photovoice is that it grounds abstract ideas through a visual medium, and, is suitable for the co-creation of knowledge among groups with various literacy-levels, first language backgrounds, and educational experiences (Jurkowski & Paul-Ward, 2007).

While Photovoice has proven useful in illuminating experiences of adverse or health promoting conditions, to our knowledge the method has not been employed in a comparative analysis to explore how and why such conditions are spatially distributed. Photovoice has evolved as an instrument for articulating the already-existing knowledge of those often excluded from the research process – that is, the intimate knowledge of places that people hold through their direct experiences. However, in the city, environmental health inequities are, by definition, spatially relational – constructed as 'difference' between places that appear to "have" and others that "have-not." One limitation of the method in terms of scrutinizing inequity is that research participants do not have a chance

to explore their own experiences in relation to spaces and places that are largely “unknown” or at least not directly visited or experienced. Without direct comparison, Photovoice is incapable of critically analyzing people’s experiences within the context of the wider urban system. While there is no shortage of critical commentary cast toward the inner city, this is less the case for more affluent neighbourhoods.

Methods

Research Settings and Recruitment

Our project began in 2008 in Vancouver and Toronto following a one-year pilot and extended to Winnipeg one year later. In each city, we partnered with numerous community organizations who provide services and supports to residents of inner city communities (see Acknowledgements). Three organizations in particular provided extensive supports in the form of office and meeting space and assistance in recruitment and project dissemination, including the Downtown Eastside Neighbourhood House (Vancouver), Ecuhome (Toronto), and the Circle of Life Thunderbird House (Winnipeg). Each of these organizations were chosen because they were located in neighbourhood that are illustrative of a long term pattern of inequitable urban planning that have materialized as social exclusion, economic deprivation, and material dispossession committed against successive vulnerable communities – including new immigrants, transient workers, First Nations people, and those with chronic mental health or addiction challenges (Blomley, 2004; Silver & Toews, 2009; Whitzman, 2009).

In Vancouver, community researchers (N=16) were residents of the Downtown Eastside (DTES). Recruitment was through several community partners, each of whom was

asked to recommend one or two individuals that would help to satisfy our efforts to include a broad spectrum of the community while also best representing the particular perspectives and identities of their clientele. For over a century, the Downtown Eastside has seen successive communities including Coast Salish First Nations, early 20th century Japanese-Canadian immigrants, and a present-day heterogeneous population of socially marginalized low-income residents, many of whom face challenges associated with mental illness and addictions. Over successive periods, each of these communities faced similar experiences of officially sanctioned persecution, dispossession, and displacement forced upon them by colonialist, racist, and other discriminatory attitudes and patterns of development that form the backdrop of the contemporary “unjust” city (Fainstein, 2010). For decades, economic disinvestment, poorly maintained and inadequate housing, and an infamous open drug market have contributed to the degradation of the built and social environment in the area. Yet many residents are attracted to the neighbourhood because of the concentration of services focusing on physical and mental health, addiction, shelter, sex work, and food, as well as the solidarity they find within many progressive community organizations. While these service organizations provide support to residents and visitors, the focus of their support work also attaches a stigma to the DTES that is embedded in the worst preconceptions of naïve and ignorant outsiders, and distorts the well-meaning sentiments of those who wish to intervene in the neighbourhood through research and planning. This stigmatized image is further perpetuated through a long tradition of predatory media reportage that creates a public spectacle of people’s personal lives and everyday challenges (Masuda & Crabtree, 2010). At the same time, residents are being

placed at ever-higher risk as a result of largely unrestrained gentrification and development-oriented planning in the neighbourhood (Blomley, 2004).

In Toronto, community researchers (N=16) were residents who belonged to several key community-based organizations located in the neighbourhood of Parkdale. Efforts were made to recruit participants who were representative of the historical circumstances that have constituted this very diverse neighbourhood, including Canadian newcomers, those who have experienced homelessness, addiction and/or mental health challenges, and front line local service providers. Parkdale is a west-end Toronto neighbourhood located on the north shore of Lake Ontario that has undergone considerable transitions over the past 150 years. The neighbourhood's beginnings as an exclusive lakefront village at the turn of the 20th century changed after its separation from the lake by the Gardiner Expressway; a large commuting freeway that was one consequence of changing economic circumstances and rapid suburbanization after World War II. What resulted was a series of transitions that would see once stately Victorian houses subdivided into rooming houses and a demographic shift from middle class homeowners to a refuge for de-institutionalized psychiatric patients and a staging ground for new immigrant settlement (Whitzman, 2009). Recently, gentrification of architecturally attractive residential areas has displaced many lower income residents, and also bifurcated the neighbourhood through tensions between more affluent (predominantly north of Queen Street) and poorer (south of Queen Street) areas (Teelucksingh, 2002). Today, Parkdale residents are socioeconomically diverse, but the neighbourhood is still stigmatized by mainstream Torontonians. Yet, many of its most marginalized groups are also among the most committed to positive change, with

countless community organizations advocating for the arts, social justice, and improved environmental conditions.

In Winnipeg, community researchers (N=17) were drawn from three regional clusters of neighbourhoods that constitute Winnipeg's highly dispersed and diverse "core-area." These include West Broadway and Spence to the south, West Alexander and Centennial adjacent to the city's central business district, and several so-called "North End" neighbourhoods north of the historic CN rail yard. In all cases, community partners were asked to recommend staff or clientele who would be well positioned to represent the identity and priorities of these specific neighbourhood areas. Historically, several founding communities of largely Eastern European immigrants made up much of Winnipeg's working class North End and originally settled in these neighbourhoods during the early 20th century. In contrast, West End neighbourhoods were once home to middle and upper classes, as particularly evident from the stately Victorian homes that exist in West Broadway. After World War II and the evolution toward the contemporary sprawling automobile-dependent city, wealthier and established residents began to withdraw to the rapidly expanding suburbs, being replaced by a steady influx of Aboriginal people in search of employment opportunities and escape from increasingly deplorable living conditions on reserves. Unfortunately, their arrival was met with consistently inadequate or misdirected governmental responses to increasingly severe infrastructure degradation and rising poverty (Silver & Toews, 2009). In recent years, a growing immigrant and refugee population has come to the city, largely in the high density Centennial and surrounding neighbourhoods in the immediate city core, seeking the benefits of concentrated health, family, and social services and supports, as well as affordable

housing. Despite the obstacles that these highly diverse but racialized communities face as a result of ongoing prejudice, socioeconomic marginalization, and ineffective institutional management, many residents express a remarkable sense of pride in place and solidarity with neighbours to the point that Winnipeg's inner city boasts a nationally reputed, if subaltern, urban multi-ethnic organization and culture.

Prior to undertaking the fieldwork, we obtained ethics approval at all participating universities, including the University of British Columbia, the University of Manitoba, the University of Toronto, and Ryerson University. At each study site, community partners (see acknowledgements) generously welcomed, hosted, and in many cases mentored research investigators and graduate students. Partners also informed the design and implementation of the research process through specific forms of assistance, including letters of support to funders, recruitment, the provision of research space, help with neighbourhood walking tours and other fieldwork, feedback on interview guides, contributions to draft reports, and knowledge translation activities including photo gallery displays, conversation cafés, and research posters. A neighbourhood assessment protocol was developed through pilot studies conducted in 2007 and 2008 at the Vancouver and Toronto sites respectively (Masuda & Crabtree, 2010).

A basic procedural template for neighbourhood assessment was created for all sites, with each team having freedom to adapt their protocols, neighbourhood selection criteria, and discussion topics according to local preferences. To carry out the assessments, community researchers in each city were organized into three teams of approximately five residents and one to two research staff members. As we adhered to a philosophy of collective knowledge production, information about the community researchers was

collected anonymously and pooled for each study site (Table 1). It is not possible to quantify demographic information as questions were asked in an open-ended format (e.g. what would you like to say about your age, your gender, your income sources, your education, your place of residence, your health, and anything else?). Across sites, collective demographic information that was reported represented a wide spectrum of lifestyles (18 – 72 years), genders, income (\$285-\$4167/month), education (grade 6 to graduate degrees), lengths of residence (five months to 25+ years), ethnicities, and health experiences. More detailed site-specific pooled participant information can be found in the study final report (Masuda, Teelucksingh, Crabtree, Frankish, Poland, Haber et al., 2011).

To select neighbourhoods, we used a GIS based population health mapping approach in which we overlaid neighbourhood boundaries onto a map of Census Tract level socioeconomic deprivation (Figure 1). Following the methodology of Odoi et al (Odoi, Wray, Emo, Birch, Hutchison, Eyles et al., 2005), the deprivation mapping was based on a cluster analysis of 18 variables from the 2006 Census selected to represent a combination of ethnoracial (e.g. Aboriginal status, visible minority, language), socioeconomic (e.g. income, social assistance, housing), and demographic (e.g. age, marital status) variables known to correlate with differences in health. Cluster analysis was based on all Census Tracts within the City of Winnipeg (167 CTs covering 230 neighbourhoods; 2006 population 636,177), the City of Vancouver (105 CTs covering 23 neighbourhoods; 2006 population 578,041), and Metropolitan Toronto (153 CTs covering 140 neighbourhoods, 2006 population 2,503,281). For consistency, five clusters were specified for each city and the analysis followed a k-means partitioning methodology in

which each cluster was formed iteratively with each assigned observation (Table 2). By overlaying neighbourhoods boundaries onto Census Tract level clusters, research teams made independent decisions, based on a combination of pragmatic (e.g. distance and public transit accessibility) and strategic (e.g. reputation, maximum variation of cluster characteristics) factors, on the number and types of neighbourhoods they would compare in follow-up assessments (Table 3).

All community researchers received a project orientation and participated in an initial group dialogue, facilitated by a project investigator or graduate student, about the social determinants of health (e.g. what makes people healthy?), neighbourhood settings for health (e.g. what makes your neighbourhood healthy?), and perceived inequity (e.g. what is missing in your neighbourhood?). In a second meeting, community researchers received training in photography as well as the safe and ethical conduct of community-based research. Community researchers then took part in a series of neighbourhood assessments. Alongside research staff, community researchers conducted walking tours of their own neighbourhood plus at least two others (most often a mid- and low-deprivation) on separate visits, approximately one week apart.

Prior to each neighbourhood visit, teams would conduct preliminary background research involving Internet searches (e.g. City websites, Google maps, Wikipedia) and Census data to construct a neighbourhood profile in the context of previously discussed social determinants of health and plan their routes to locate comparative features of specific sites (e.g. public spaces, health care services, businesses, residential areas). After walking through and photographing the neighbourhood for two to four hours, teams reconvened to review their photos and discuss significant observations. Following all

neighbourhood tours, community researchers met individually with project staff to select and name key photographs they deemed as most important about their observations and perceived experiences of difference in relation to the initial group discussion. In a final group discussion, again facilitated by project investigators and graduate students, community researchers reviewed, compared, categorized, and discussed the selected photographs. To distill main themes, community researchers grouped common images and ideas together to foreground discussions on why such perceived differences and subsequent inequities exist. The analysis that follows is based on a thematic analysis of transcripts from these group discussions (N = 9). Data analysis was conducted independently at each site using a cross-comparative approach to identify core meanings using a coding scheme to index, search, and analyze the data (Patton, 2002).

Results

Our analysis of the final group discussions resulted in several themes that speak to community researchers' perspectives on environmental health inequities in their respective cities. Close comparison across cities allowed us to organize the site-specific data into five cross-site themes that characterize similar dimensions of environmental health inequities (see Table 4). We summarize these cross-site themes, citing examples to highlight similarities as well as differences. The full analysis of site-specific themes can be found in Masuda et al (2011), available online.

CYCLES OF STIGMATIZATION

Community researchers in all three cities observed a common pattern of perceived stigmatization that they felt was imposed by outsiders that limited the ability of their communities to achieve positive neighbourhood change. In Toronto, observed differences between neighbourhoods in public environmental services suggested inferior waste management and park services (e.g. grass maintenance, tree plantings, and washroom facilities) in Parkdale. Community researchers attributed these differences to a complex dynamic between patterns of residential use and city services. One community researcher commented:

We see the discrimination in Parkdale from the waste management people... [in wealthier neighbourhoods] the garbage truck comes and after he is done his job he leaves everything nice and organized... They come [to Parkdale] and we see what they are like here [referring to photo of a garbage strewn alley].

In Parkdale (and similarly in Winnipeg's core and Vancouver's DTES), higher population density and pedestrian traffic were perceived to be the cause of the larger volumes of garbage and more intensive wear found in relatively smaller park areas. Community researchers felt that the City failed to allocate sufficient resources for more intensive uses of public space. They felt that the appearance of neglect contributed to inferior service delivery by workers who would attribute overflowing trash bins to disrespectful individuals.

'GATED' INNER CITIES

The segregated city was not only a function of invisible boundaries between rich and poor areas, but also the social exclusion of inner city residents even within their own neighbourhoods. In Vancouver, community researchers spoke of universal human needs,

like a home, nutritious food, healthcare, and dignified places to visit, eat, and shop. Yet they reported that DTES services often do not meet these needs. For example: many DTES residents are homeless and there are few places to access healthy food; doctors' offices have excessive wait-times; and, single room occupancy (SRO) hotel rooms (a common accommodation in the DTES) do not have private kitchens or bathrooms. Community researchers pointed to the ability of prejudiced individuals to anonymously impose discriminatory practices onto residents through visible signs such as the gates, barred windows, and derelict buildings they observed at many of these sites. This form of inward discrimination became particularly clear when compared to the inviting, well-maintained service locales found in other neighbourhoods. One community researcher described how fences in the DTES undermines the community by criminalizing public spaces and their occupants:

[The gates] make me kind of feel like a criminal, even though I'm not a criminal, right. Like, it-- all these things are there to keep people out. Why do they want to keep us out? What have we done so wrong that we deserve this kind of attention, right? And why don't they have this in other neighbourhoods, like I say, over in Yaletown or Riley Park area, right?

Feelings of exclusion even permeated into personal spaces; community researchers reported first-hand experiences where people living in social housing avoided their own rooms because of pests and filthy conditions.

DISDAIN FOR THE COMMONS

In all study sites, community researchers felt that efforts to improve the city were undermined by a disdain for investment in public spaces, particularly within the inner city.

In Winnipeg, community researchers contrasted individualistic uses of space in more affluent neighbourhoods with a more functional approach to community-used space in their own. For example, the West Broadway and North End teams both observed ample instances of clearly demarcated but underutilized public and private spaces in wealthier neighbourhoods that they felt represented a conspicuous sense of property entitlement. One West Broadway community researcher expressed how such wasted spaces might be used in her neighbourhood:

That [photo] is showing the green space in Tuxedo but it is kind of for private use [note: there were several private property signs surrounding the perimeter of the space in this photo]. Well, they prefer that nobody uses it, just to look at it. [In another example], I found in Tuxedo, in the middle of a cul-de-sac, there was just a bunch of grass and just a lamp post and we were thinking that if this would have been in West Broadway, there would have been a community garden or something else.

Researchers contrasted their perceptions of feeling unwelcome in these public spaces to the sparse but often well-used spaces, including empty lots and small playgrounds, in their own neighbourhoods.

DISINVESTMENT

In all study sites, participants felt that misdirected public and private investments were observable in the appearance of the physical and social environment of the city's neighbourhoods. In Parkdale, images of abandoned, boarded up, and burned out storefronts were the backdrop for discussions of neighbourhood transition and gentrification. Researchers noted how gentrification was pushing lower-income residents from the neighbourhood in more subtle ways than the often-cited conversion of market

housing. For instance, the case of the evolving food landscape reveals how the neighbourhood becomes much harder to live in:

[T]he development has come all the way to the bridge and now with the new restaurants and galleries it is coming. They are going to push all the poor people out again... You forget about the poor people that need to go [to existing] places [to buy food]. The No Frills [a discount grocer], closed down and they put in a Sobeys [a higher end grocer] because more rich people were there. Then the poor might have to commute to another neighbourhood to get food.

In contrast to other neighbourhoods, Parkdale was recognized as a setting for people with particular needs (a relatively larger population relying on social assistance, in need of rental housing, coping with addiction and/or mental health issues, and in need of employment, affordable food and services) as well as specific assets (rich artistic and cultural endowments). Yet they felt that neither these needs nor assets were adequately recognized and protected.

SOLIDARITY AMIDST EXCLUSION

In the face of stigma, social exclusion, disdain, and disinvestment perpetuated against low-income neighbourhoods, community researchers were nearly unanimous in their belief that the inner city provided a sense of internal cohesion and solidarity not observed in other parts of the city. In Winnipeg, community researchers admired the amenities available in wealthier neighbourhoods, but were not envious of the lifestyle they perceived through their observations of public and private spaces. They felt that inner city neighbourhoods, despite their derelict outer appearances, were more receptive to those with financial hardship, alternative behaviours, or social marginalization. These neighbourhoods offer a variety of community-based organizations that assist in making

ends meet and connecting friends and families. One community researcher discussed how services helped to define a sense of community:

When you talk about community what comes to mind for me is that people actually gathering together and sharing resources with each other and just being part of the community and not hiding. These spaces and these facilities are places to come together and are essential.

Service provisions often cited included education, childcare, support networks, food and cooking support, employment training, counseling, immigrant and refugee services, community art, gardening, recreation and youth programming; all essential for living well while experiencing poverty. In these types of discussions, all groups recounted supportive and caring relationships that tied the community together, partly as a consequence of higher-density living in an often-criminalized environment.

In Toronto, Parkdale is recognized for having vibrant, diverse and creative social networks. Parkdale was seen as a distinct ‘melting pot’ where a greater diversity of people has an opportunity to belong in comparison to neighbourhoods that were viewed as internally homogeneous yet more spatially segmented by virtue of clearly delineated property boundaries. One community researcher felt this sense of belonging contrasted with the prevailing culture of affluent neighbourhoods:

...in these other neighbourhoods, where everyone is sort of “me and mine”, they decide on what terms they’ll co-exist, where I think, in Parkdale, we’re forced to come up with these creative solutions and that makes us more vibrant ...things that are so different in Parkdale because people have had to cobble together solutions for themselves.

However, community researchers recognized that these creative social systems are often born out of deprivation (lack of adequate income, employment, housing). Many agreed that Parkdale's community strength developed through shared needs and a lack of supports, which forces communities to 'cobble' together solutions that create an environment of sharing. The recognition of this creativity and resourcefulness was used to underline the importance of accessing local knowledge when planning and investing in community development.

Finally, in Vancouver, participants felt that there are many community involvement opportunities, but that always depended on the establishment of trust with others. One community researcher reflected on a photo of a garden as being indicative of a sense of community:

Community is where, like, in [the] picture, [a woman's] daughter can have plants growing on her doorstep without someone taking them...and work together and try to keep [the area] clean. Like, if you see someone vandalizing, you're, like, 'Hey, stop, I live here.'

Community researchers expressed that such forms of trust and community solidarity may be challenged by: individual struggles of addiction and poverty, divisions between low-income residents and new condo owners, lack of unity among local organizations, and concerns for personal safety. Overall, the solidarity felt in all three cities was perceived to be a strength overlooked by decision-makers in urban and public health planning focused on "deficit" oriented interventions.

Discussion

We believe that our exploratory, comparative use of Photovoice has proven useful in re-scaling the assessment of environmental health inequities from a constricted, deficit-oriented view of the inner city to a relational view of neighbourhood level environmental health inequity in the city. Our approach confirms and deepens identity-based and outcomes-oriented inequity analyses as found in urban risk and population health mapping (Buzzelli & Jerrett, 2004; Odoi et al., 2005) by adding a layer of place-based experiential and observational knowledge that builds upon the inherent capability of community residents to articulate their perspectives on the social determinants of health. In moving beyond the quantitative 'bird's eye' view of relative socioeconomic deprivation through in depth qualitative neighbourhood assessment, we are able to both observe the spatially uneven patterns of inequity impacts (i.e. socioeconomic deprivation) and to articulate factors that might account for such differences.

Within each city, our community researchers found neighbourhoods to be diverse in their observations of the relationship between people and place. Through the use of our comparative Photovoice approach, community researchers were enabled to make connections between their knowledge of the city and its systemic inequities by connecting their observations to thematic perspectives about stigma, exclusion, disdain, and disinvestment. The methodology also helped community researchers to identify a perceived sense of solidarity found within marginalized communities that, if nurtured, might form important levers of resistance against such forces. Most importantly, community researchers helped discover how symptoms of inequity are best understood only when the city's derelict districts are viewed in relation to more affluent neighbourhoods (where, notably, many of the research investigators and staff reside).

Community researchers helped us to see how an urban culture of “creative individualism” visibly predominates in privileged areas, which undermines a sense of collective citizenship as people focus inward on their personal interests and private properties. The advertisement in Figure 2 is illustrative of the individualizing agenda of revitalization – taken on the east end of Parkdale, the image valorizes removing the colourless curtain of an old bakery and bookstore to reveal a bright new cappuccino café. For urban scholars, planners, and public health officials whose motivations may be biased by ‘creative class’ preferences, our community researchers propose a fundamentally different vision – they suggest that inner city residents may not aspire to look ‘like’ more affluent neighbourhoods. Nor are their aspirations merely a matter of recognizing inherent assets that presently exist within the neighbourhood as advocated, for instance, in community asset approaches (Sharpe & Greaney, 2000). Rather, community researchers emphasized a relational perspective in choosing neighbourhood features that distinguished them from others, whether such features were perceived as health enhancing or not. This perspective offers a different way of thinking about environmental determinants of health than what is conventionally found in public policies and planning documents. It suggests that the person sleeping on the public bench in the inner city is not inherently different from the sunbather on the beach; while each experiences social regulation related to the specific claims they are making about public space, only the latter experiences officially sanctioned police scrutiny and social disenfranchisement as a consequence of their “out of place” behaviour (Cresswell, 1996). From this we suggest that efforts to resolve systemic inequities and their real and perceived effects requires the dismantling of attitudes and behaviours that are imposed on inner city neighbourhoods, even by those who wish to

ameliorate negative conditions through public health intervention and urban revitalization schemes.

Across cities, we found many common experiences and observations among three very diverse teams of community researchers. While garbage strewn alleys and barbed wire can be found in Vancouver's DTES, Winnipeg's core areas, and Toronto's Parkdale, so too can community gardens as interventions to transform derelict properties. Likewise, manicured public parks and quiet residential streets are typical of more affluent districts in all three cities, as are drive-thrus, vast under-utilized public spaces, and sidewalk-less residential boulevards. That community members at each study site would critique similar characteristics, even within such vastly different settings, suggests that 'root causes' – a shortfall of institutional responses to poverty, criminality, and environmental degradation as deeply embedded within the Canadian social fabric – have common 'root effects' in their material manifestations. That said, while reports of stigma, disinvestment, disrespect, and solidarity were reported by all three teams of community researchers, our findings suggest that they manifest in subtly distinct ways from city to city. The contextual nature of inequity therefore suggests that 'one-size-fits-all' interventions such as major policy initiatives in sustainability (Gillyat, No Date), housing (Mental Health Commission of Canada, 2010), and transportation (Canadian Urban Transit Association, 2011) are at best ineffective, and at worst counterproductive, if they do not factor in the distinct circumstances of the places in which they wish to intervene.

Finally, it is important to recognize the limitations of this exploratory study. There are at least three. First, the limited scope of our study in terms of time and resources prevented community researchers from gaining a thoroughly in-depth, historical

perspective of neighbourhoods. An historical determination of neighbourhood conditions is critical to gaining a complete picture of the slow-acting nature of inequity formation, as a deep understanding of historical influences such as public policies in housing, mental health, immigration can deepen our understand of how inequities materialize (Cruikshank & Bouchier, 2004; Teelucksingh, 2002). Second, our use of photography, while useful in making the research easy, personal, and fun, is also limited in its static and one-dimensional representation of place that valorizes the observable present. While community researchers were remarkably adept at using photos as embarking points in discussions about the past, present, and future of their lives, the photos themselves have little meaning in terms of informing specific intervention. Moreover, where we find the methodology most speculative is when it is operationalized in the exploratory context - perceptions of neighbourhoods that are largely unknown to community researchers (that is, those of more affluent neighbourhoods, often never visited previously) are limited in their ability to make determinations of actual conditions and lifestyles within those places. Our visits were of short duration and only include publicly accessible routes. We did not speak to residents of these neighbourhoods, nor evaluate to any extent the conditions of indoor environments or private spaces. Third, we were limited in our ability to ascertain the broader institutions responsible for root causes of environmental health inequities as they contribute to similar or different outcomes between cities. While one-day knowledge translation workshops helped our teams to compare and contrast our findings among rooms of key stakeholders in each city, there were no provisions for an inter-city dialogue to take place among such stakeholders. Such a dialogue will be crucial, not only for bolstering the arguments made here in regard to the need for contextualized approaches,

but also for establishing new partnerships across jurisdictions in leveraging local knowledge for systemic action to address environmental health equity for cities.

To conclude, our comparative photography-mediated assessments highlighted how inequities symptomized as visible differences in environmental conditions across city settings may be understood as a relational construct – manifestations of deprivation within inner cities only reveal systemic inequities when they are contrasted to environmental conditions in other parts of the city. It is through these observations that root causes might be identified and mechanisms ascertained. In this sense, our study points to the opportunity for further research that appropriately values the role of community members in identifying opportunities to re-constitute urban environments that support the health of all residents.

Table 1. Pooled participant demographics.

Category	Vancouver	Toronto	Winnipeg
<i>Age and Gender</i>	Ages range from 19 to 65 years old. Most (10) are over 50, three are in their 20s, and the remaining three are 19, 46, and 47 years old. The group was comprised of 7 females, 5 males, 1 transgendered, and 3 who preferred not to say.	The age range of the group fell between 20 and 72 years old with the most (n=13) between the age of 30 and 60. There were 11 male participants and 5 female participants.	Ages range from 18 to 65 years old. Most (12) are under 40, three are in their 40's, and the remaining are 55, and 65 years old. The groups were comprised of 8 females and 9 males.
<i>Income</i>	Incomes ranges from about \$580 to \$2250 per month. This income comes from disability or social assistance, Pension and Old Age and Guaranteed Income Supplements, child tax benefits, part-time jobs, freelance piece and craft work, boyfriends, and volunteer stipends.	The monthly income of participants ranged from \$530 to \$ 4167 with the largest group (7 or 46.7%) earning less than \$1000/month. Income sources included social assistance programs (Ontario Works and Ontario Disability Support Program) part time, temporary and casual labour opportunities, fulltime employment and self employment.	Incomes range from about \$285 to \$2000 per month. This income comes from disability or social assistance, family, foster parenting, full-time & part-time employment, First Nations Band, recycling, freelance work, and selling artwork.
<i>Education</i>	Most (9) obtained up to Grade 10 or 11 and one has a GED, and two completed up to grades 6 and 8. Six have completed some college, two completed professional programs (Early Childhood Education and Nursing), and 2 others are currently finishing Grade 12.	Education levels ranged from less than grade 12 (n=4) to graduate level studies (n=1), six earned a high school diploma or technical degree, one earned a professional designation and four earned an undergraduate degree.	Most (8) obtained up to Grade 11 or 12, some (6) had post secondary education with 2 currently completing degrees and one person with a Bachelor of Science and two completed up to grades 8 and 9.
<i>Residence</i>	All have lived in the DTES for at least three years, three have lived in the area for their entire lives or since their early childhood, and six have lived in the neighbourhood for ten to twenty years.	Most (n=13) have lived or worked in Parkdale for 9 years or less. One person has lived in the neighbourhood between 10 and 14 years and one person has lived in the neighbourhood for over 20 years (one person chose not to answer).	One person had only been living in Winnipeg for 5 months but the majority had lived in Winnipeg for at least 2-4 years. One person has lived in Winnipeg for over 25 years, another their whole life and 5 people between 8-19 years.
<i>Health issues</i>	Most (11) identified one or more health issues they are living with. Four have Hepatitis C, two have or have had cancer, one is living with HIV, and two have mental health issues.	Health issues included physical disabilities, addiction and mental health issues such as post traumatic stress disorder,	Most (9) identified one or more health issues they are living with. Some of the conditions mentioned were arthritis, asthma, fatty liver disease, diabetes, back aches, psycho affective bipolar disorder, and high blood pressure.
<i>Anything else</i>	Three said they have children; a few let us know they love the DTES. One has been alcohol and drug free for 5 years, one likes doing craft work, and another is a proud Native woman.	N/A	Four people said that they either identify as artists, hip hop dancer singers or musicians. Two people said they like working with people and another enjoys new challenges, and two are single parents.

Table 2. Comparison of deprivation for study cities. Cluster based analysis of 18 sociodemographic variables at Census Tract level from the 2006 Census (Statistics Canada, 2006) results in the following 5 neighbourhood types (see Odoi et al, 2005 for details on the cluster analysis methodology).

	Cluster Deprivation ^a				
	1 Lowest	2 Lower	3 Moderate	4 Higher	5 Highest
Vancouver	-7.0	-3.9	2.5	22.8	90.5
Winnipeg	-6.0	-0.8	6.8	7.4	23.0
Toronto	-9.4	-3.1	0.9	1.1	9.9

^a Averages of the 18 standardized variables were summed to yield cluster deprivation scores (variables standardized to mean zero. Variables include Aboriginal Ancestry, Dwelling Value (reversed), Governmental transfer income, Internal migrant mobility, Less than high school education, Persons living alone, Low income, Married (reversed), Median income, New immigrants, Non-official language at home, Over 65, Owner-occupied dwelling (reversed), population density, single-parent families, Under 20, Unemployment, Visible minority. Values were reversed for 'Average dwelling value', 'Median income', '% Legally married')

Table 3. Selected neighbourhoods, by deprivation cluster and number of team visits.

Neighbourhood	Cluster(s) ^a	# Visits
Vancouver		
1. DTES/Strathcona ^b	4,5	3
2. Downtown	2,5	1
3. Kitsilano	1,2	1
4. Kerrisdale	1	1
5. Riley Park	1,3	1
6. Sunset	3	1
7. Kensington	3	1
Toronto		
1. Parkdale ^b	4,5	3
2. High Park-Swansea ^c	1,4	3
3. Longbranch	3	3
Winnipeg		
1. North End/Pt. Douglas ^{b,d}	5,3,2	1
2. Downtown ^{b,e}	5,2	1
3. West Broadway ^b	4	1
4. Seven Oaks	2	1
5. Daniel McIntyre	5,3	1
6. Crescentwood	1	1
7. River-Osborne	4	1
8. St. Boniface	2	1
9. Tuxedo	1	1

^a In some cases, neighbourhood boundaries encompassed Census Tracts from more than one cluster. In these cases, the predominant cluster (covers the largest area) is bolded.

^b Neighbourhoods where community researchers resided

^c Research teams visited only the area known as Bloor West Village

^d Refers to neighbourhoods of Lord Selkirk Park, Dufferin, William Whyte, North Point Douglas

^e Refers to neighbourhoods of Centennial, Old Financial District, Main Street

Fig. 1a. Winnipeg neighbourhood-level deprivation and study visits. The five clusters of relative deprivation are indicated by shaded Census Tracts (see Table 2). Areas assessed by community researchers are delineated by solid and dashed lines and numbered in accordance with neighbourhoods listed in Table 3. Dashed lines indicate neighbourhoods of residence of community researchers.

Fig. 1b. Toronto neighbourhood-level deprivation and study visits.

Fig. 1c. Vancouver neighbourhood-level deprivation and study visits.

Table 4. Selected site-specific themes categorized for cross-site thematic analysis.

Cross-site themes	Vancouver	Toronto	Winnipeg
<i>CYCLES OF STIGMATIZATION</i>	Intruding outsiders	Delivery of public environmental services	Living in fear Healthy child development and safety
<i>GATED' INNER CITIES</i>	Exclusionary and inaccessible spaces Deservedness	Exclusionary housing Social status and access to therapeutic landscapes	Housing insecurity Health services
<i>DISDAIN FOR THE COMMONS</i>	Beautiful and artistic aspects of a neighbourhood	Public congregation space	Use of space
<i>DISINVESTMENT</i>	Visible effects of capitalism Conspicuous inequality	Free-market vs. Community-driven development	Criminalization and disinvestment
<i>SOLIDARITY AMIDST EXCLUSION</i>	The importance of community	Social support networks	Local services support the community Connections and supports

Fig. 2. Photo taken by the first author of a bank advertisement taken in a bus stop at the east end of Parkdale on Queen Street, 2009.

Bibliography

- Blomley, N. (2004). *Unsettling the City: Urban Land and the Politics of Property*. New York: Routledge.
- Bryant, T., Raphael, D., & Travers, R. (2007). Identifying and strengthening the structural roots of urban health in Canada: participatory policy research and the urban health agenda. *Promotion and Education*, XIV(1), 6-11.
- Burnett, R. T., Steib, D., Brook, J. R., Cakmak, S., Dales, R., Raizenne, M., et al. (2004). Associations between short-term changes in nitrogen dioxide and mortality in Canadian cities. *Archives of Environmental Health*, 59(5), 228-236.
- Canadian Urban Transit Association. (2011). A National Transit Strategy for Canada: Issue Paper 22. Toronto.
- Carlson, E. D., Engebretson, J., & Chamberlain, R. M. (2006). Photovoice as a social process of critical consciousness. *Qualitative Health Research*, 16, 836-852.
- Chen, W. H., Myles, J., & Picot, G. (Online First). Why have poorer neighbourhoods stagnated economically while the richer have flourished?: Neighbourhood income inequality in Canadian cities. *Urban Studies*, 1-32.
- Collins, P. A., & Hayes, M. V. (2007). Twenty years since Ottawa and Epp: researchers' reflections on challenges, gains and future prospects for reducing health inequities in Canada. *Health Promotion International*, 22(4), 337-345.
- Cresswell, T. (1996). *In Place/Out of Place: Geography, Ideology, and Transgression*. Minneapolis: University of Minnesota Press.
- Cruikshank, K., & Bouchier, N. B. (2004). Blighted Areas And Obnoxious Industries Constructing Environmental Inequality On An Industrial Waterfront, Hamilton, Ontario, 1890-1960. *Environmental History*, 9(3), 464-496.
- Cutts, B. B., Darby, K. J., Boone, C. G., & Brewis, A. (2009). City structure, obesity, and environmental justice: An integrated analysis of physical and social barriers to walkable streets and park access. *Social Science & Medicine*, 69(9), 1314-1322.
- Evans, G. W., & Marcynyszyn, L. A. (2004). Environmental justice, cumulative environmental risk, and health among low- and middle-income children in upstate New York. *American Journal of Public Health*, 94(11), 1942-1944.
- Fainstein, S. (2010). *The Just City*. New York: Cornell University Press.
- Freire, P. (1972). *Pedagogy of the Oppressed*. New York: Continuum.
- Freire, P. (1973). *Education for Critical Consciousness*. New York: Seabury.
- Freire, P. (1993). *Pedagogy of the City*. New York: Continuum.
- Gillyat, R. (No Date). Global challenges and city networks: Canada's Sustainable Cities Initiative. Industry Canada.
- Hancock, T., Labonte, R., & Edwards, R. (1999). Indicators that count! Measuring population health at the community level. *Canadian Journal of Public Health*, 90(S1), S22-26.
- Heynen, N. C. (2003). The scalar production of injustice within the urban forest. *Antipode*, 35(5), 980-998.
- Jurkowski, J. M., & Paul-Ward, A. (2007). Photovoice with vulnerable populations: Addressing disparities in health promotion among people with intellectual disabilities. *Health Promotion Practice*, 8(4), 358-365.
- Keller-Olaman, S. J., Eyles, J. D., Elliott, S. J., Wilson, K., Dostrovsky, N., & Jerrett, M. (2005). Individual and neighbourhood characteristics associated with environmental exposure: Exploring relationships at home and work in a Canadian city. *Environment and Behavior*, 37(4), 441-464.
- Kuo, F. E. (2001). Impacts of environment and attention in the inner city. *Environment and Behavior*, 33(1), 5-34.
- Lambert, T. W., Boehmer, J., Feltham, J., Guyn, L., & Rizwan, S. (2011). Spatial mapping of lead, arsenic, iron, and polycyclic aromatic hydrocarbon soil contamination in Sydney, Nova Scotia: Community impact from the coke ovens and steel plant. *Archives of Environmental and Occupational Health*, 66(3), 128-145.
- Larsen, K., & Gilliland, J. (2008). Mapping the evolution of 'food deserts' in a Canadian city: Supermarket accessibility in London, Ontario, 1961-2005. *International Journal of Health Geographics*, 7(1), 16.
- Maantay, J. (2007). Asthma and air pollution in the Bronx: Methodological and data considerations in using GIS for environmental justice and health research. *Health and Place*, 13, 32-56.
- Maller, C., Townsend, M., Pryor, A., Brown, P., & St. Leger, L. (2005). Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for populations. *Health Promotion International*, 21(1), 45-54.
- Masuda, J. R., & Crabtree, A. (2010). Environmental justice in the therapeutic inner city. *Health and Place*, 16, 656-665.
- Masuda, J. R., Poland, B., & Baxter, J. (2010). Reaching for environmental health justice: Canadian experiences for a comprehensive research, policy and advocacy agenda in health promotion. *Health Promotion International*, 25(4), 453-463.
- Masuda, J. R., Teelucksingh, C., Crabtree, A., Frankish, J., Poland, B., Haber, R., et al. (2011). Where everyone is sort of, 'Me and Mine': Relocating environmental health inequity into the city through the photos of inner city residents in Vancouver, Winnipeg, and Toronto. Winnipeg: University of Manitoba.
- Masuda, J. R., Zupancic, T., Poland, B., & Cole, D. (2008). Environmental health and vulnerable populations in Canada: Mapping an integrated equity-focused research agenda. *Canadian Geographer*, 54(4), 427-450.
- Mental Health Commission of Canada. (2010). On Our Way: Annual Report, 2009-2010.

Minkler, M., Breckwich Vasquez, V., Tajik, M., & Petersen, D. (2008). Promoting environmental justice through community-based participatory research: The role of community and partnership capacity. *Health Education and Behavior*, 35, 119-137.

O'Neill, M., & Simard, P. (2006). Choosing indicators to evaluate Healthy Cities projects: a political task. *Health Promotion International*, 21(2), 145-152.

Odoi, A., Wray, R., Emo, M., Birch, S., Hutchison, B., Eyles, J. D., et al. (2005). Inequalities in neighbourhood socioeconomic characteristics: potential evidence-base for neighbourhood health planning. *International Journal of Health Geographics*, 4(20).

Patz, J. A., Campbell-Lendrum, D., Holloway, T., & Foley, J. A. (2005). Impact of regional climate change on human health. *Nature*, 438(7066), 310-317.

Sandel, M., & Wright, J. R. (2006). When home is where the stress is: expanding the dimensions of housing that influence asthma morbidity. *Archives of Disease in Childhood*, 91(11), 942-948.

Silver, J., & Toews, O. (2009). Combating poverty in Winnipeg's inner city, 1960s-1990s: Thirty years of hard-earned lessons. *Canadian Journal of Urban Research*, 18(1), 98-122.

Smith, K. R., Corvalán, K. T., & Kjellstrom, T. (1999). How much global ill health is attributable to environmental factors? *Epidemiology*, 10(5), 573-584.

Takano, T., & Nakamura, K. (2001). An analysis of health levels and various indicators of urban environments for Healthy Cities projects. *Journal of Epidemiology and Community Health*, 55(263-270).

Teelucksingh, C. (2002). Spatiality and environmental justice in Parkdale (Toronto). *Ethnologies*, 24(1), 119-141.

United Nations Population Fund. (2007). UNFPA State of the World Population 2007: Unleashing the Potential of Urban Growth. United Nations.

Wang, C. (1997). Photovoice: Concept, methodology, and use for participatory needs assessment. *Health Education and Behavior*, 24(3), 369-387.

Wang, C., Yi, W., Tao, Z., & Carovano, K. (1998). Photovoice as a participatory health promotion strategy. *Health Promotion International*, 13, 75-86.

Whitzman, C. (2009). *Suburb, Slum, Urban Village: Transformations in Toronto's Parkdale Neighbourhood, 1875-2002*. Vancouver: UBC Press.

WHO (World Health Organization). (2003). Belfast Declaration. Copenhagen.

WHO Commission on the Social Determinants of Health. (2008). Closing the gap in a generation: Health equity through action on the social determinants of health. (p. 256): World Health Organization.

Wilkinson, R. G., & Pickett, K. E. (2006). Income inequality and population health: A review and explanation of the evidence. *Social Science and Medicine*, 62, 1768-1784.