



## Breast cancer care in the Canada and the United States: Ecological comparisons of extremely impoverished and affluent urban neighborhoods

Kevin M. Gorey<sup>a,\*</sup>, Isaac N. Luginaah<sup>b</sup>, Caroline Hamm<sup>c</sup>, Karen Y. Fung<sup>d</sup>, Eric J. Holowaty<sup>e</sup>

<sup>a</sup> School of Social Work, University of Windsor, 401 Sunset Avenue, Windsor, Ontario, Canada N9B 3P4

<sup>b</sup> Department of Geography, University of Western Ontario, London, ON, Canada

<sup>c</sup> Clinical Trials and Research, Windsor Regional Cancer Center, Windsor, ON, Canada

<sup>d</sup> Department of Mathematics and Statistics, University of Windsor, Windsor, ON, Canada

<sup>e</sup> Population Studies and Surveillance, Cancer Care Ontario, Toronto, ON, Canada

### ARTICLE INFO

#### Article history:

Received 4 June 2009

Received in revised form

18 September 2009

Accepted 23 September 2009

#### Keywords:

Breast cancer care

Poverty

Affluence

Survival

United States

Canada

### ABSTRACT

This study examined the differential effect of extreme impoverishment on breast cancer care in urban Canada and the United States. Ontario and California registry-based samples diagnosed between 1998 and 2000 were followed until 2006. Extremely poor and affluent neighborhoods were compared. Poverty was associated with non-localized disease, surgical and radiation therapy (RT) waits, non-receipt of breast conserving surgery, RT and hormonal therapy, and shorter survival in California, but not in Ontario. Extremely poor Ontario women were consistently advantaged on care indices over their California counterparts. More inclusive health insurance coverage in Canada seems the most plausible explanation for such Canadian breast cancer care advantages.

© 2009 Elsevier Ltd. All rights reserved.

### 1. Introduction

Social, political and economic forces converged in twentieth century America to produce extreme socioeconomic segregation in and around many urban places. Extremely poor neighborhoods tended to concentrate in inner-cities at the same time that extremely affluent neighborhoods were developing in suburban to exurban areas that tended to sprawl away from cities. Extremes of impoverishment and affluence and so relative socioeconomic inequities have fluctuated over recent generations, but distinct very low-income ghettos and well-to-do enclaves clearly persist in twenty-first century urban America. Such socioeconomic extremes are not unknown in Canada (Duncan et al., 1993; Gorey, 1998), but perhaps because of their greater prevalence and apparent virulence as well as their stronger association with race in America, they have been studied much more there. In particular, substantially increased risks of diverse population health problems in extremely poor neighborhoods have been well described in America, but not in Canada. One exemplary sentinel

indicator of population health—breast cancer care—has been consistently observed to be of much lower quality in low-income neighborhoods and communities in the United States and of relatively higher quality in similar Canadian places. Though probably similar on many risks and vulnerabilities, low-income Canadian women with breast cancer, indeed all low-income Canadians are relatively less deprived than their American counterparts on at least one potentially critical characteristic. Their access to medically necessary health care is guaranteed. Such is clearly not the case for Americans. This between-country health insurance difference, therefore, is at the heart of this study's theoretical context. The health insurance theory predicts that breast cancer care will be much more equitable in Canada and that Canadian patients who reside in extremely poor neighborhoods will receive much higher quality health care than do their counterparts in America.

William Julius Wilson's (1987) germinal work in the high poverty neighborhoods of 1960s Chicago began the description and analysis of so-called underclass neighborhoods where 30% or more of the households had annual incomes below the US Census Bureau's poverty criterion. Modestly advancing the predictive validity of such high poverty areas while greatly extending this field's external validity, Paul Jargowsky (1997); Jargowsky and Mary Jo Bane (1991) studied census tract-based areas of extreme impoverishment where 40% or more of the households were poor

\* Corresponding author. Tel.: +1 519 253 3000x3085; fax: +1 519 973 7036.

E-mail addresses: [gorey@uwindsor.ca](mailto:gorey@uwindsor.ca) (K.M. Gorey), [iluginaa@uwo.ca](mailto:iluginaa@uwo.ca) (I.N. Luginaah), [caroline\\_hamm@wrh.on.ca](mailto:caroline_hamm@wrh.on.ca) (C. Hamm), [kfung@uwindsor.ca](mailto:kfung@uwindsor.ca) (K.Y. Fung), [eric.holowaty@cancercare.on.ca](mailto:eric.holowaty@cancercare.on.ca) (E.J. Holowaty).

in 239 US metropolitan areas during the generational time frame of the 1970s through the 1990s. Together they described high to extreme poverty areas as places of prevalent demographic vulnerability, where all of the following people tended to be more concentrated: racial/ethnic minority group members, young adults without a high school diploma, single mothers, the unemployed and those who had withdrawn from the labor market altogether, and welfare recipients. Perhaps not surprisingly, analysts have since observed consistent and generally strong associations between extreme impoverishment and diverse indicators of familial, social and personal illness in America: child neglect and abuse, teen pregnancy, violent crime, low birth weight, obesity, hypertension, diabetes, heart disease, cancer, AIDS, depression and suicide (Drake and Pandey, 1996; Geronimus et al., 2006; Harding, 2003; Krieger et al., 2003; Krivo and Peterson, 1996; Pearl et al., 2001; Rehkopf and Buka, 2006; Robbins and Webb, 2004; Zierler et al., 2000). Similar poverty–illness associations have been observed in Canada, though Canadian analysts have tended to use less extreme poverty criteria (e.g., 20% or more poor) or to study the linear health affects of relatively low-income areas that are characterized by their median incomes (Dupere et al., 2009; Gorey et al., 1998; Hou and Chen, 2003; Lemstra et al., 2006; Mustard et al., 1999).

### 1.1. North American health care policy laboratory

Sharing a 5000 km border and having many social, cultural, lifestyle and physical environmental similarities, it seems that the myriad risks associated with extremely poor neighborhoods probably operate similarly to cause diverse diseases in the United States and Canada. The factors that are ultimately causally related to disease occurrences, however, are not necessarily the same as the factors that are related to their effective care and outcomes. For instance, though common coronary heart disease and cancer morbidities are well known to be strongly associated with poverty in both the US and Canada, their mortalities and survival rates remain strongly associated with poverty in the US, while such associations seem null to nil in Canada (Gorey et al., 1998; Pilote et al., 2007). This pattern may be most parsimoniously explained by between-country health insurance differences. Their social–cultural–lifestyle–environmental similarities notwithstanding, all Canadians, be they extremely poor or affluent, employed, unemployed or having withdrawn from the labor market are distinctly advantaged as compared with their American counterparts. They universally enjoy access to a single payer system of health care. Low-income Americans are essentially much more prevalently exposed to various under- or uninsured statuses that greatly increase their risk of experiencing substandard health care or no health care at all (DeNavas-Walt et al., 2006; Gorey, 1999).

#### 1.1.1. Breast cancer care in Canada and the US

Breast cancer care is one sentinel indicator of a health care system's performance. The most common type of cancer among North American women, its prognosis is typically excellent with early diagnosis and timely access to the best available treatments (Canadian Cancer Society, 2006; Ries et al., 2008). Moreover, for a number of reasons breast cancer seems particularly instructive for Canada–US cancer care comparisons. First, though the US and Canada, respectively, rank number one and two at the top of the world's breast cancer survival distribution, the overall difference between them is miniscule (RR=1.02; Coleman et al., 2008). Second, Canada–US comparative studies of breast cancer survival that accounted for socioeconomic factors consistently observed income by country interactions (Gorey, in press; Gorey et al., 1997, 2000a, 2000b, 2003, 2009c; Zhang-Salomons et al., 2006).

Moderate to strong inverse income–survival associations were consistently observed among US cohorts, but not among Canadian cohorts. Within-country social forces then seemed to operate so that low-income Canadian women experienced moderate to large survival advantages compared with their counterparts in the US, but between-country differences among, respective, middle- and high-income groups were consistently null. All of these studies used census tract-based US poverty measures and analogous low-income measures in Canada, but these did not measure the construct of extreme poverty areas as defined by either Wilson (1987) or Jargowsky and Bane (1991). Most of the low-income area comparisons, for example, were of lowest income third to fifths that typically only approached prevalence estimates of 20% poor. Third and finally, breast cancer diagnosis and treatments (screening, stage at diagnosis, waits for care, access to surgery, chemotherapy and radiation therapy) seem very sensitive to poverty in the US and have demonstrated similar poverty by country interactions in Canada–US comparisons that have been observed for breast cancer survival (Gold et al., 2008; Gorey et al., in press, 2009d; Polednak, 2002, 2004; Schootman et al., 2009). But again, their lowest income areas typically only ranged from 10% to 20% poor.

#### 1.1.2. Hypotheses

We are unaware of any previous study that compared cancer care in high poverty urban areas of the United States and Canada. Focusing on breast cancer, this one will do so. Placing a greater emphasis on the “haves and have nots” than previous of this field's studies have, its findings could perhaps be of incrementally greater practical-policy significance. Consistent with health insurance theoretical explanations we hypothesized the following. Within-country comparisons: (1) extremely poor urban neighborhoods will be significantly disadvantaged as compared with extremely affluent urban neighborhoods on breast cancer stage at diagnosis, waits for surgical and adjuvant treatments, receipt of surgical and adjuvant treatments and survival in the US, but not in Canada. Between-country comparisons: (2) women with breast cancer in extremely poor urban Canadian neighborhoods will be significantly advantaged on all of the cancer care and outcome measures as compared with their American counterparts. A hypothetical addendum predicts such Canadian advantages among the extremely poor to be qualitatively larger than those previously observed among the poor. (3) In contrast, extremely affluent Canadian and American urban neighborhoods are not expected to differ significantly on any measure of cancer care or outcome.

## 2. Methods

### 2.1. Samples

This historical cohort study is one of a series of analyses of cancer care in diverse urban and rural places in Ontario and California. For the present urban analysis, the Ontario Cancer Registry (OCR) and the California Cancer Registry (CCR), respectively, provided 624 and 660 primary, invasive, adult (25 or older) female breast cancer cases diagnosed between January 1, 1998 and December 31, 2000 in comparable urban areas. The OCR and CCR comprehensively surveille the most populace Canadian province and state in America with demonstrated validity. They have both been estimated to ascertain nearly all breast cancer cases (greater than 98%) with nearly perfect rates of microscopic confirmation and nearly nil rates of autopsy or death certificate only identification (Hall et al., 2006; North American Association of Central Cancer Registries, 2009; Walter et al., 1994; Zippin et al.,

Download English Version:

<https://daneshyari.com/en/article/1048686>

Download Persian Version:

<https://daneshyari.com/article/1048686>

[Daneshyari.com](https://daneshyari.com)