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Abstract

Type II diabetes is a chronic condition that has earlier incidence and higher prevalence in the Canadian visible immigrant population as compared to Canadian born and European immigrants. This critical literature review sought to analyze causal theories and policy recommendations concerning the increased risk of diabetes among Canadian visible immigrants. Scholarly articles retrieved from the last 10 years revealed an emphasis on the biomedical and behavioural paradigms of health. The dominant approach for addressing diabetes was targeting behavioural change and offering ethno-specific healthcare based interventions. This review revealed the prevalence of a narrow view of risk factors as well as a gap in recognizing social and public policy determinants of immigrant health. Despite widespread evidence of the social determinants of health, ideological and political barriers prevent any concrete discourse and policy action on these fronts. Health research should emphasize the importance of economic and social integration for Canadian immigrant health.
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Introduction

Immigration constitutes a vital economic and social element of Canadian society, one that has helped form and define the nation's progress. Immigration has a long history in Canada and helps enhance Canada's otherwise low population growth; currently between 240,000 and 265,000 immigrants settle in Canada every year (Adhikari & Sanou, 2012). Most recent immigrants originate from developing nations, shifting from former trends of immigration from Europe to Asia and Africa, with the majority arriving from India and China (Adhikrai & Sanou, 2012). This has contributed to the rise of the visible minority population in Canada in the last two decades as immigrants contribute about 70%, of the current visible minority population (Grabb & Guppy, 2009). Their increasing population size places the health of immigrants as an important factor in the sustainability of Canadian health, social and economic institutions and overall wellbeing of the population. The healthcare system in particular is faced with difficult challenges that include increasing chronic health conditions, greater needs of an increasingly aging population and the rise of health inequities. Thus the characteristics of visible minority immigrants have significant influence on population health outcomes and are important to consider when designing public policy.

Literature Review

Diabetes among Canadian Immigrants

Type II diabetes is a chronic condition that claims one of the highest disease burdens on the Canadian population. Its prevalence has almost doubled in the past decade and over one in four Canadians have diabetes or are at risk for developing it (Canadian Diabetes Association, 2011). Type II diabetes develops when the body is unable to produce or use insulin for the uptake of glucose, resulting in excess blood glucose levels. Uncontrolled diabetes can lead to
further complications and disability, including kidney and eye disease, nerve and tissue damage and adverse cardiovascular events such as heart attacks and strokes. These are potentially life-threatening conditions that significantly impact an individual's full participation in society. Certain populations are at a higher risk for diabetes than others, in particular, low income, Indigenous Canadians and immigrants (Canadian Diabetes Association, 2011). Prevalence of diabetes across the population ranges from 1.3% to 12%, with immigrants from South Asia, the Caribbean, Latin America and Africa having higher rates of the disease than other groups (Adhikar & Sanou, 2012). Among immigrants, those of South Asian and African descent have two to four times higher type II diabetes rates than immigrants of European origin, and the disease also develops earlier in these groups (Creatore et al., 2010). As a condition that can lead to significant physical impairment if it is not appropriately and timely managed, and one that affects some groups disproportionately, diabetes prevention is an important health equity and public health priority.

The Healthy Immigrant Effect

One of the most established phenomena of immigrant health in Canada is the "Healthy Immigrant Effect". This concept describes the observation that immigrants initially display superior health status compared to residents of the host country. Their better health outcomes are seen in lower incidence and prevalence of chronic diseases as well as lower utilization of healthcare services (Gushulak, 2007). The "Healthy Immigrant Effect" is largely attributed to the self-selection and immigration screening processes which favour younger, healthier and more educated immigrants while those with chronic illness may not attempt to apply or are denied. The second component to this observation is that eventually, over time, immigrants' health declines, reaching the levels of the Canadian-born population or lower. This pattern is widely
supported by national health surveys and studies of self-assessed health status and the presence of chronic illness (De Maio, 2010). It is particularly evident by the higher prevalence of type II diabetes among visible minority immigrants in Canada as compared to that of the host population (Hyman, et al., 2012).

**Theories of Immigrant Health**

There are several theories ranging from behavioural to sociological and cultural that attempt to explain the general phenomenon of the healthy immigrant effect and the higher rates of type II diabetes among visible minority immigrants. Behavioural explanations tend to centre around the phenomenon of acculturation, which is the process of adapting to the culture of a host country (Pollard, 2011). This theory attributes negative behavioural choices to the prevalence of diabetes among immigrants. It is posited that immigrants’ health advantage may be due to cultural norms that discourage risky behaviours, but over time adaptations to Western norms such as smoking, inactivity and higher fat diets increase (Lesser, Gasevic & Lear, 2014). There are mixed findings among Canadian studies; some have found high fat diets and lower levels of physical activity among visible immigrant groups, while other studies have found that recent immigrants are more likely to engage in healthy behaviours which help mitigate diabetes risk and better control its management as compared to Canadian-born groups (Hyman et al., 2012). Support for the acculturation theory of the deterioration of immigrant health is inconclusive. Furthermore, relatively healthy immigrants’ health not only declines to the level of the host population upon settlement in Canada, but worsens further (Newbold, 2005). This key observation points to additional factors that adversely impact the health of immigrants in particular, compared to the health of the host population.
It is widely acknowledged that income, employment, housing, education and social factors are the most significant determinants of health and have a strong influence on the incidence and severity of type II diabetes (Pilkington et al., 2010; Raphael et al., 2012). Type II diabetes is a chronic condition in adults resulting from a defect in the body’s insulin uptake and production, which is essential for the use of glucose as energy. Type I diabetes generally develops in childhood or adolescence as a result of an autoimmune condition. The focus of this paper is on type II diabetes since its causes are multifactorial and strongly influenced by social conditions.

While there is a growing field of academia examining the causal and socioeconomic conditions that influence immigrant health, critical analysis of the framing and representation of the issue and its recommended solutions are generally lacking in current discourse. An examination of ideological and political underpinnings driving the discourse on immigrant health is required. The work of Chaufan and Weitz (2009) examined how the health research community attributes the high rates of adult-onset diabetes among the visible minority poor in the United States, and found it was largely ascribed to personal behavioural and cultural characteristics. Such an examination of the public health discourse on diabetes among immigrants in Canada is limited and merits further exploration. This review will use a critical lens to enable critique of socio-economic, political and structural factors in hopes to identify effective policies that mitigate the negative influence of structural barriers on immigrant health.

The fair distribution of the social determinants (i.e. education, employment, social capital), which are preconditions of good health, is influenced by prevalent socio-political forces and their underlying ideologies which have profound implications for health. As argued by Bambra et al., (2005) politics and health are intertwined in numerous ways; determinants of health are
influenced by political interventions and thereby dependent on political decisions. Ultimately, health is political because as a commodity, it is part of the broader social and economic system. Critical examination of the role of political ideologies as they relate to the incidence of type II diabetes in the Canadian immigrant population presents a gap in the literature (Shahidi, 2011) and will be a focus of this paper.

**Theoretical Background**

A critical social science approach was employed for identification and analysis of themes within the literature search. This analytic approach enables examination of the interplay of social, political, economic, ethnic and gender processes that interact and change over time to influence the health of individuals (Ashcroft, 2010). Critical social science theory is advantageous over other theoretical approaches in the study of immigrants because it allows for a critique of structural and systemic influences on health. Furthermore this approach helps identify and promote conditions for the empowerment of the individual to transcend the constraints placed upon by race, class and gender which are significant factors implicated in immigrant health outcomes. Analytically, a critical social science approach allows for the unpacking of prevalent discourse on immigrant health to help reveal the structural, political and interpersonal root causes of immigrant health disparities. Such an approach uncovers unequal power relations that deny fairness for some groups and not others and allows for assumptions and dominant health narratives to be to be challenged.

This paper will conduct a critical review of the literature on diabetes among immigrants in Canada and will analyse the findings to explore the relationship between three aspects of current discourses on immigrant health: (i) the socioeconomic and structural determinants of immigrant health that contribute to the disproportionate burden of disease among this population;
(ii) the characteristics of primarily status-quo policy recommendations that prevail; and (iii) the role of values and ideology in framing discourse that serves some interests over others. This paper will utilize the methodology of Bacchi (2009) to enable study of the framing of diabetes’ causes, explanations and policy recommendations put forward by health researchers. The analysis will address whether the problem of diabetes is framed as a biomedical or social issue, followed by whether the prevention is presented as a biomedical or social problem that falls within individual or social/environmental responsibility. The framing of an issue helps create the definition of the problem, its likely causes and solutions and can alter public perceptions based on the views of its proponents; thus it represents an essential dimension of analysis.

Methods

A critical literature review was conducted for peer-reviewed articles retrieved from the PubMed and SCOPUS electronic databases. These databases were chosen because of their prominence in medical, public health and interdisciplinary research respectively. The search terms entered into the electronic databases were: diabetes and (immigrant OR minority OR ethnic), and Canada.

The following inclusion criteria were applied to database searches. Studies included in this review were limited to scholarly journal articles written in English and published within the last ten years. Articles were excluded if they were not Canadian studies or did not mention Canadian data and population analysis. Articles that did not discuss immigrant or visible minority populations in their analysis were also excluded. Articles that did not mention prevalence of diabetes directly but still discussed general chronic health outcome analysis of Canadian immigrants and visible minorities (excluding Aboriginal populations) were considered. Strictly statistical studies of survey results of immigrant health status that did not present an
analysis of the interactions between ethnicity, immigration and health were excluded. Empirical studies including both quantitative and qualitative methods were retained, while review articles, commentaries and other non-scholarly sources were excluded.

Primary screening was based on the article title and associated key words, while secondary screening included a review of the article abstract to assess relevancy. The results of the article search from the electronic databases are summarised below. The PubMed database yielded a total of 124 results after the search was filtered for articles within the last ten years and the preliminary search with key words. Of the 124, 20 articles were relevant to this study based on the primary inclusion criteria. The SCOPUS article search resulted in 172 results of which 27 were relevant based on the preliminary screening. Several articles were found in both database searches. Secondary screening consisted of reading the article abstracts and article if necessary to determine whether the subjects and objectives of the studies matched the purpose of this paper which is to conduct a review of the discourses within academic literature on diabetes among immigrants and the framing of its causal factors. Articles were included in the secondary phase if they discussed immigrant or minority populations in Canada and the incidence or prevalence of diabetes or other chronic diseases. Articles that did not explore the relationship between immigrant and minority status and health as a central theme were not included. Articles that relied heavily on statistical survey data and technical medical or genetic analysis were also excluded. A total of 21 articles met both primary and secondary inclusion criteria and were included this review. A summary of the results is presented below.
Search Results Identified through initial search terms:
Scopus n= 172

Potentially Relevant Studies identified by primary screening strategy
Scopus n= 27
Pubmed n=20

Retrieved for secondary screening of abstract content
n=26

Articles included for review n=21

15 Removed
- subject was neither immigrant, minority health or diabetes
- study was largely statistical or survey based
- technical medical associations discussed
- study not in English

15 overlapping studies

Figure 1: Article Retrieval Procedure
Results

The articles' methodology was reviewed and its content evaluated on the attribution of risk factors associated with incidence of diabetes among immigrant populations. Articles were characterized based on the predominant ideological framework of health that was endorsed both for their identification of causal factors of diabetes and the recommendations of policy to curb its incidence.

Study Characteristics

A total of 21 articles were included in the review. All but one of the studies had quantitative methodological designs and used statistical data analysis techniques, while one article used a mixed method approach. Seven of the studies had as their data source the Canadian Community Health or the National Population Health surveys examined over successive cycles. Six of the articles used cohort studies, including historic and prospective methods. The remaining articles used cross-sectional methodology. Content analysis found that nine articles discussed diabetes among immigrants directly. Four of the articles discussed general immigrant health and another four discussed cardiovascular health among immigrants. Finally, two articles were about diabetes among general disadvantaged populations while another two articles focused on diet, food insecurity and immigrant health.

Attribution of Risk

Attribution of risk factors for diabetes among the articles ranged from ethnicity and acculturation related behavioural changes to differential health care access and social and environmental determinants of health. Of the 21 articles reviewed, six (29%) identified detrimental lifestyle and behavioural choices as a result of acculturation as a primary causal factor for increased rates of diabetes among immigrants. For example, the article by Alangh,
Chiu & Shah (2013) analysed the rise of type II diabetes among Chinese Canadians and found a 15-fold increase in age and sex standardized incidence of diabetes from 1996 to 2005 compared to only a 24% increase in Canadians of European origins. The researchers theorized that increases in acculturation, the adoption of unhealthy lifestyle habits could possibly explain these findings. Socioeconomic determinants of diabetes were presented as major causes in five articles (24%) in which decreased socioeconomic and political status were considered significant risk factors. Hyman et al., (2014) identified precarious employment as a leading cause of health inequities among immigrant groups. Barriers to accessing appropriate health care was a causal factor cited in three articles (14%). For example, Shah (2008) found that South Asian and Black ethnic minorities had a significantly higher prevalence of diabetes and also had lower rates of eye examinations compared to other ethnic groups with diabetes, indicating differences in diabetes incidence and its management.

Time since immigration was seen as contributing to diabetes and heart disease among immigrants in two articles (10%). The study by Booth et al., (2013) showed that recent immigrants in low-income neighbourhoods characterized by lack of walkability, had an increased risk of developing diabetes compared with longer term residents living in similar neighbourhood conditions. Their research showed that in addition to the significant association between neighborhood walkability and income on diabetes, immigration status (i.e. recent immigrant or long term resident) was also a risk factor for diabetes incidence. Two articles identified genetic or ethnic factors as major contributors to the development of diabetes among immigrants. Khan et al., (2011) showed that diabetes incidence varied by ethnic origin; they found that South Asian patients had the highest age-adjusted incidence of diabetes and were 4.6 years younger on average than Chinese and white patients at diagnosis of diabetes. The authors reference evidence
of rapid increases in diabetes incidence in developing nations and posit that immigrants from these nations are predisposed to insulin resistance when they move to Western countries and encounter an environment of inactivity and unhealthy diets.

Only one article considered the role of chronic racism and discrimination and its consequent psychological impacts as the primary causal factor in immigrants’ deterioration in health (Veenstra, 2009). The study by Veenstra utilized the Canadian Community Health Survey to analyse the influence of racial identity on health. The researchers examined three variables of health: self-rated health, diabetes and hypertension prevalence. Statistical models were conducted on each of the three health variables while controlling for gender, age, immigration status, education level and income and geographic setting. The findings showed that no racial-cultural identification was associated with significantly better health outcomes than those respondents identifying as White. The findings also demonstrated that none of the statistical models were able to explain the statistically significant risks of diabetes and hypertension for respondents identifying as ethnic minorities (Black, Filipino, South Asian, Aboriginal and Chinese) compared to White respondents. The author suggests that biological explanations of health disparities are therefore unsupported and a more reasonable hypothesis to explain the differences is as a result of years of racism and discrimination faced by members of ethnic minority groups.

Lastly, two articles considered environmental and ecological factors as significant causes of diabetes (10%). Their research supported the importance of interactions between the built environment and individual-level factors in impacting the health of immigrants. One study explored the effects of neighbourhood deprivation on the health of adults with diabetes. The researchers sought to examine whether there was an association between neighborhood
deprivation and self-reported disability for people with type II diabetes and whether neighbourhood characteristics were independently associated to health. Participants living in advantaged neighborhoods were shown to have lower levels of disability than participants living in disadvantaged neighborhoods (Schmitz et al., 2009). The findings indicated an independent effect and strong influence of neighbourhood context on the incidence of disability of people with diabetes.

Table 1: Primary Cause Attributed for Explanation of Diabetes Among Immigrants, as Identified in 21 Scholarly Articles on Diabetes among Canadian Immigrants

<table>
<thead>
<tr>
<th>Primary Cause</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acculturation: Lifestyle and Behavioural</td>
<td>6</td>
<td>29%</td>
</tr>
<tr>
<td>Social Determinants of Health</td>
<td>5</td>
<td>24%</td>
</tr>
<tr>
<td>Healthcare system and Access</td>
<td>3</td>
<td>14%</td>
</tr>
<tr>
<td>Genetics</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Immigration/Settlement Issues</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Physical Environment</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Psycho-social</td>
<td>1</td>
<td>5%</td>
</tr>
</tbody>
</table>

Table 2: Health Paradigm Adopted for explanation of Diabetes among immigrants, as Identified in 21 Scholarly Articles on Diabetes among Canadian Immigrants

<table>
<thead>
<tr>
<th>Health Paradigm</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical/Behavioural</td>
<td>11</td>
<td>52%</td>
</tr>
<tr>
<td>Holistic</td>
<td>5</td>
<td>24%</td>
</tr>
<tr>
<td>Psycho-Social</td>
<td>3</td>
<td>14%</td>
</tr>
<tr>
<td>Ecological</td>
<td>2</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
Table one outlines the primary cause attribution for diabetes found within the literature while Table two categorizes articles into the broader approach taken to understand and frame the causes, management and prevention efforts of diabetes among Canadian immigrants. Over half the articles in this review attributed the higher risk of diabetes to individual biological predisposition and behavioural changes adopted in the process of immigration and settlement in Canada. The holistic health paradigm was the second most common, and considered the influence of socioeconomic determinants along with barriers to accessing the health care system. A psycho-social view of health was adopted in three articles which underscored the impact of psychological distress due to discrimination and social isolation as having the most significant impact on diabetes outcomes. Lastly two articles adopted an ecological paradigm which highlighted environmental and physical contexts as important causes of diabetes among immigrants.

**Policy Recommendations**

In alignment with the attribution of risk factors for diabetes, half the articles reviewed largely conform to the behavioural approach to population health and the recommended policy and program actions reflect this paradigm. For example, research by Creatore et al. (2010), found that recent immigrants of South Asian and African origin are at much higher risk for diabetes than long-term residents of Ontario and recent immigrants from European nations. The authors posit that the increased risk for these populations stems from acculturation and transition to a “Westernized” diet and lifestyle. Recommended interventions include programs and policies aimed at visibly ethnic specific risk prevention, community level education programs and strategies that aim for behavioural changes and the promotion of physical activity. Biomedical interventions, such as earlier screening of high risk groups, regularly at a younger age were
suggested in articles that followed a biomedical health paradigm (Creatore et al., 2012). The article by Chiu, Austin, Manual & Tu (2012) concludes that the central goal of preventing the incidence of disease among immigrants is the mitigation of the negative impact of acculturation through healthy behavioural and lifestyle change.

A broader view of diabetes prevalence was considered in 5 articles (24%). Diabetes prevention strategies were directed at the social determinants of health, particularly employment which is highly associated with health outcomes and access to care. Hyman et al., (2012) showed that a significant gap between recent immigrants and Canadian-born adults with diabetes was type of employment and underemployment. They also found that racialized Canadians regardless of immigration status were less likely to be unemployed and have permanent employment compared with non-racialized Canadians. The researchers reference that precarious job status can have a negative impact on health through preventing access to non-insured services, however they do not discuss what impact racialization has on ability to secure quality employment. Hyman et al., (2012) also found that compared with the Canadian-born respondents, recent immigrants were significantly less likely to use clinical resources for advice on diabetes management (nurses, dieticians) and much more likely to use family and friends as sources of information. The authors suggest that community level formal and informal supports be the base of chronic disease prevention and health promotion strategies, since immigrant communities rely strongly on family and friends for diabetes related information. The authors do not discuss the importance of social networks in the context of mitigating the negative effects of exclusion and stress but rather a mechanism for knowledge transmission. Determinants of health such as access to education, income, and social and gender inequity were considered essential for diabetes prevention strategies in the article by Dasgupta, Khan & Ross, (2010). Their findings
demonstrated an inverse relationship between education and incidence of type 2 diabetes and a similar effect was found for the association of income and diabetes. The highest risk of diabetes was among the lowest educational and income groups with women being at a higher risk than men. The authors point out that the inverse socioeconomic gradient effect on diabetes could not be entirely explained by known risk factors such as obesity and physical inactivity, given that adjusting the findings for these variables still resulted in persistent inverse gradients on diabetes incidence. Their findings lead them to recommend support for policies that improve access to education and reduce inequalities to enable better economic outcomes and allow more people to experience greater health benefits associated with higher income and educational attainment.

A psycho-social view of health was adopted by 3 articles (14%). The article by Veenstra (2009) argues that communities distinguished by race (a concept with social importance) fundamentally denote differences in power and inequality and therefore have repercussions for health. The manifestations of racism and discrimination through social institutions limit the opportunities for individuals to improve their socioeconomic conditions and concentrate their socioeconomic, political and cultural disadvantages. The article suggests that the inequalities documented in immigrant and minority health outcomes may be explained by the processes of discrimination and recommends further investigation into its effects.

The ecological and environmental paradigm, adopted in two articles, recommends consideration of the way communities are designed and the impact of where one lives on their health (Booth et al., 2013). The study found that neighbourhood walkability was a strong predictor of diabetes incidence particularly among recent immigrants compared to long-term residents. This research supports the notion that the environment plays an important role in
reducing barriers to and enabling healthy behaviours. Thus the authors suggest that neighborhood design should be considered when planning diabetes prevention strategies.

A important finding was that policy directives across the literature were predominantly recommended to be embedded at the community level. For example, Hyman et al., (2014) view community or local level interventions as having the greatest impact because of their significance in the health promotion of marginalized groups. Their recommendation is for local Community Health Centres (CHCs) to be explored further as a model for improving the health outcomes of immigrant populations. The notion of locally targeted interventions being the most appropriate to treat the high rates of diabetes among immigrant communities is problematic in several ways and will be discussed in more detail in this review.

**Analysis**

This review revealed that recommendations for policy and program improvements to reduce the burden of diabetes among the Canadian immigrant population were primarily clinical and behaviour oriented and reflect the dominance of the biomedical paradigm. There is an emphasis on behavioural risk factors and cultural differences in propensity for the disease, while diabetes is presented as a preventable illness through alteration of individual behaviours. The recommendations for prevention are also behavioural in nature as they cite changing of unhealthy lifestyle patterns as the primary intervention. This form of prevention is presented as an individual responsibility rather than a population or societal one that is the concern of individuals to ensure they adopt healthy lifestyles. This moves the definition of health further away from the broader socioeconomic factors to the ability of individuals to adapt and respond to challenges (Bacchi, 2009). The biomedical paradigm shifts attention away from the nature of the challenges, their causes and how they impact different aspects of society, and towards the
individual. There is a notion of "equality in capability" that assumes individual responsibility for health and self-regulation which is the dominant way of thinking in many population and public health discourses (Bacchi, 2009). The articles call for better and earlier screening that is targeted for at risk groups which are examples of medical technology based interventions commonly proorted in the biomedical health paradigm. Interestingly, studies have shown that immigrants tend to eat better diets, be more physically active, have lower rates of smoking and engage in better self-management practices than their Canadian counterparts (Hyman et al., 2012; Hyman, 2014). As such, clinical and behavioural based interventions do not adequately address the excess prevalence and poor diabetes related health outcomes among immigrants, particularly among those lower on the socioeconomic scale (Hill, Nielson & Fox, 2013). Therefore the emphasis on lifestyle interventions and explaining the high levels of diabetes among immigrant populations is misplaced and ineffective.

Within the social determinants of health approach, there is a divide between those who place an emphasis on individual behaviours and those who promote a more critical view that examines the role of structural and institutional factors in creating conditions that make people healthy or ill. The limited discussion of socioeconomic risk factors for developing type II diabetes are found has a tendency to hold individuals responsible for putting themselves in a position of compromising their health by their behavioural choices. The risk here is individualized and has the effect of dividing populations into active and responsible citizens versus at risk and vulnerable populations (Bacchi, 2009). The latter group is seen as unable to manage their lifestyles, thereby requiring targeted interventions and tailored programs. The singling out of specific groups is damaging as it leads to perceptions of stigma and discrimination on the part of public health promotion policies and interventions. The articles that
consider the social nature of the diabetes and the consequences of the decreased socioeconomic standing of immigrants do not incorporate these factors into their recommended changes to policies and programs, suggesting a disconnect in what researchers view as significant risk factors and what they believe is actually implementable. There is widespread evidence that both the incidence and management of diabetes is highly correlated with socioeconomic factors and the associated material and psychosocial stress (Pilkington et al., 2010); yet these are not points of policy research, change or implementation. This suggests that researchers may find their role and scope of influence limited to behavioural and biomedical oriented interventions or believe that their efforts will be more productive within this approach.

**Discussion**

This review helps to shed light on the prominent forms of framing type II diabetes among immigrants of colour in Canada within the academic literature. Despite the growing evidence of the importance of socioeconomic conditions on diabetes prevalence, this study found that the literature side-steps any substantive discussion on these structural causes and engages in an individualistic discourse of disease attribution, which focused on individuals’ behaviours, culture and biology. Similarly, the preferred interventions were medical and behavioural, considered modifiable through educational and clinically driven efforts. Interestingly, despite heavily focussing on lifestyle factors, the articles neglected to consider the role the social determinants play in healthy behavioural outcomes, in particular adequate disposable income, educational attainment, employment security and healthy living conditions (Raphael et al. 2012). The prevalent discourse downplays the role of structural and systemic inequalities on immigrant health and shifts attention away from the role of public policy in reducing inequalities (Bryant, Raphael, Schrecker & Labonte, 2011). This in turn moves the public health and policy discussion
towards local level attempts for change that can only offer surface level, band-aid solutions, rather than the social changes required for long-term reversal of the burden of diabetes and other illnesses in immigrant populations. The lack of recognition of the intersectional composition of immigrant health which is influenced by an array of socioeconomic factors as well as immigration status and racism and discrimination, reveals that it is far from mainstream acceptance within health and policy research circles.

Ideology and Issue Framing

The authors’ representation of diabetes and their suggestions are based on their preferred health paradigm and values. The framing of issues reflects the values authors hold, as they serve as the underlying mechanisms for the formation of attitudes, behaviours and decision making (Hoffman & Slater, 2007). Framing is the process by which information is presented in a way that highlights the aspects of an issue or subject that makes the selected aspects more salient while reducing others (Entman, 1993). Thus the characterization of an issue has a large influence on how it is perceived and understood, which has important implications for public opinions and policy formation.

The primary analytic question in this paper was how scholarly articles frame the issue of diabetes among immigrants, and in particular, what values underlie their attribution of causal factors to individual or social forces. The central argument is that framing helps to shape the public policy debate around an issue, helping to enhance and expand the debate or to limit it. The overwhelming form of framing of the high rates of diabetes among immigrants points to liberal values of individual responsibility for health, and obscures the role of structural contributions to the development of disease. This framing paints the issue in the light of weakness or failure on
the part of individuals and groups to rise above challenges, rather than including a perspective on the social, economic and immigrant intersections that may render health goals as unattainable.

As diabetes becomes more prevalent in the Canadian population and among immigrants, there is growing concern in the policy community around where the responsibility lies for reducing its incidence. Determining the realm of responsibility for reducing the prevalence of diabetes is crucial for how the issue is approached through policy (Salmon, Post & Christensen 2003). The central crux of the debate in public and population health is how much relative accountability the individual and society have in preventing and managing diabetes epidemic. The individualist view holds that health and social issues are shortcomings in personal behaviour. It follows that individual behaviours are the cause of ill health outcomes and therefore are the main targets of interventions and awareness. The alternate view is that health inequalities result from unequal distribution of damaging social, economic and environmental conditions and that effective change must come from changes in social and economic policies. This societal view places the responsibility on public systems and how well they manage and mitigate social inequalities.

It is also important to consider the interests at play which maintain short-sighted visions, especially of those in positions of power and control who would be effected if large scale structural changes were singled out as causes of preventable diseases. Considering the prominence of Canadian contribution to social determinants of health conceptualization and literature, the lack of policies addressing them is concerning. It is critical to analyse where the disconnect between words and action takes place, and what can be done to improve the chances of health taking a central stage in public policy action.
Understanding the policy development process is critical to creating beneficial and
effective change. Policy formation can be classified having either a pluralistic or materialistic
foundation. The pluralistic approach understands policy to result from the quality of ideas; with
the most beneficial of them being adapted; while the materialistic view of policy is one that sees
policy controlled by those in dominant positions in society (Raphael, Curry-Stevens & Bryant,
2008). If the pluralist approach to health policy is applied to diabetes, then the biomedical
paradigm of health that emphasizes the "holy trinity of risk", tobacco, diet and physical activity
would not be as ubiquitous, since evidence is stacked against this theory (Raphael, Curry-
Stevens & Bryant, 2008). Rather the substantial evidence pointing to the influence of the social
determinants (income, education, employment security, housing, social supports) on health
would be universally accepted and championed, leading one to believe that the pluralist approach
to policy is the less relevant method of policy creation in Canada. Therefore the materialist
approach to policy seems to hold more weight in the Canadian context and investigations into the
reasons for its preference should be prioritized in health promotion discourse to determine the
roots of policy stagnation.

Why do health researchers downplay the role of socioeconomic causes of ill-health? One
explanation is the dominance of the medical culture which typically stresses individual level
factors on the maintenance of health (Chaufan & Weitz, 2009). This helps explain the emphasis
on medical-oriented, individually tailored interventions proposed in half of the articles reviewed.
The individualistic view of health that bases personal behaviours at the centre of health outcomes
is the dominant view in North American society. The emphasis on the individual responsibility
for health stems from the nature of the medical and health professions’ history of emphasizing
biomedical and behavioural causes of illness and disease (Salmon, Post & Christensen 2003).
Western culture also requires immediate results and is unable to consider societal changes that are too long term or drastic. In all domains of Western society, those who can deliver visible results in the shortest timeframe are rewarded over those who envision and promote strategies whose results can take years to make an impact. The supreme value of the free market and competition in Western neoliberal states helps to further the prevalence of short term fixes rather than sustainable downstream proposals. This is reflected in the political and economic systems that are arranged to value and produce short term changes (Salmon, Post & Christensen 2003).

The biomedical paradigm views health as the absence of disease and the goal of healthcare to reduce risk factors for ill health through measurable physiological indicators. This notion of health is depoliticized and decontextualized, contributing to the epistemological barriers to implementation of social determinants of health in policy discourse and action (Brassolotto, Raphael & Baldeo, 2014). It does not recognize the political and social structures as modifiable conditions to reduce inequities in health, rather as the confines within which the health system must work (Brassolotto, Raphael & Baldeo, 2014). This approach is complicated further because of it does not take into consideration the impacts of intersecting spheres of inequality such as racism, sexism, classism, ageism, homophobia and other forms of systemic discrimination. This is particularly harmful for the health of the growing visible minority populations in Canada, who have plural identities that put them at further disadvantages.

Another possible explanation is that addressing social inequalities and structural causes of ill-health seems too intangible and overwhelming a task to have any impact. Researchers may conclude that their research is better used to propose incremental changes that target the individuals most affected. This frame of thinking devalues the importance of inequalities and structural determinants that are widely known to have a bigger influence on population health.
than medical interventions. Additionally, the avoidance of addressing sociopolitical, economic and structural dynamics may also be a product of the health and social sciences fear of seeming unscientific or lacking objectivity, leading them to bypass their impact completely (Chaufan & Weitz, 2009). These ideological underpinnings within scholarly work hold strength to shape not only future academic discourse but have a significant impact on public perceptions and the support for policy changes. The downplaying of the role of socioeconomics on health of immigrants allows policy makers, researchers and health providers to maintain their “status quo” and continue with the way things are to avoid addressing uncomfortable realities. The relative lack of value ascribed to socioeconomic inequalities in scholarly literature can help further justify the inaction on developing progressive social and economic policies.

Other scholars have identified weak support and understanding from the general public and by health and community workers, lack of coverage in the media, sociopolitical barriers preventing action, and the limited scope of the public health profession as factors in the minimization of the social aspects of health (McIntyre et al., 2013). Thus a problematic cycle exists; the lack of visibility and credibility given to socioeconomic factors leads to the public's apathy on these issues which then reinforces health researchers and policy makers to undermine their importance.

The important linkages between policy environments and the incidence and management of diabetes have been formulated in the literature. Starfield articulates the relation between the policy context of a region and individual and population health, as mediated through four pathways; material and social resources, the physiological effects of chronic stress, health behaviours and the health system (Raphael et al., 2012). The policy context is described as influencing three broad areas that have a major impact on the socioeconomic resources of people.
experiencing diabetes and low income: health care, social assistance and housing. The retrenchment of policies and programs that mitigate adverse determinants of health (unemployment and low income) cause environments of high stress, loss of social support and material deprivation, ultimately producing poor health outcomes. Thus the prevalence of diabetes and its management are shaped by the social determinants of health, the distribution of which are determined by the implementation of public policy. As Chaufan & Weitz (2009) point out in their paper, politics, policies and population health are interconnected; following a hierarchy that dictates from political culture and policy traditions and results in population health outcomes (not the other way around). Therefore the framing and analysis of an important population health concern within academic literature and the proposals that stem from these analyses have long-reaching impacts. The next section of this paper focuses on the pathways through which policy action and inaction has strong implications for visible immigrant health.

**The Social Determinants of Health**

Socio-economic status (SES) denotes an individual's income or their family’s income, education and occupation levels in relation to others. It is often used interchangeably with social class, which refers to classification of groups based on prestige of economic position and accumulation of wealth. There is a well-established positive relationship between socioeconomic status and health status. The social gradient of health displays this relationship; every level of SES (measured by income, education and employment class) is associated with a change of health status (Dunn & Dyck, 2000). This suggests a general vulnerability of the lower SES groups to lower health status, and has significant implications for the health of immigrant populations who are more likely to be low income. It has been found that socioeconomic status is a stronger determinant of health for immigrants than non-immigrants and amongst immigrants
more important to the health of non-European immigrants (Dunn & Dyck, 2000). This finding suggests that social position among visible minority immigrants is a crucial factor in their health outcomes as compared to non-immigrants or even non-minority immigrants. Socioeconomic status is of utmost importance because it acts as a gatekeeper to other determinants of health such as housing, higher education and social supports.

Recent immigrants to Canada are largely visible minorities that are often underemployed relative to their occupational status in their country of origin, increasing their representation in low socioeconomic groups (Hyman et al., 2012; Galabuzi, 2004). The labour market integration of new immigrants to Canada has declined considerably in the decades since the 1970s. Beginning in the 1980s, economic outcomes deteriorated for new Canadians. Comparative earnings of immigrants decreased from 85-90% of native born Canadians, to 60-70% by 2006 (Picot & Sweetman, 2012). This trend aligns with the higher rates of poverty among immigrants between 1980 and 2005; increasing from 1.4 to 2.5 times greater than the Canadian born (Oreopolous & Dechief, 2011). Whereas this wage gap would shrink and eventually reach the level of Canadian born residents within 10-15 years for immigrants who arrived prior to the 1970s, wages of immigrants from the 1990s remain significantly lower even after 2005; this points to a cohort effect on immigrants’ health. Most recent immigrants experienced more drastic declines in health compared to cohorts who arrived earlier, despite arriving at a younger age. The decline in health to the level of the native born population was more rapid for the post 1970 cohort, while the pre 1970 cohort were less likely to have their health decline (Newbold, 2005). This finding supports the structural changes in the social support, economic and public services in Canada in the 1990s; a time of retrenchment that contributed to the social and health inequities present today.
Unemployment rates for recent immigrants are twice as high compared to non-immigrants of similar age (Picot & Sweetman, 2012). Based on the economic evidence, the effect has been termed the "chronically poor immigrant" phenomenon (Picot & Hou, 2007). Furthermore, visible minority immigrants not only have higher rates of unemployment and inequality of wages, they also have jobs that have lower socioeconomic status than European immigrants. Their higher representation in the lower income labour force places them at increased risk of negative health outcomes and diabetes incidence. The higher rate of poverty among immigrants is difficult to explain because of the higher educational attainment rates among new immigrants. The majority of recently immigrants to Canada, 60%, hold an undergraduate degree, compared to 20% for the Canadian born population. Generally, second generation immigrant children (those born in Canada) have positive educational and economic outcomes; they fare as well as or better than children of Canadian-born parents, however, some data suggests that this group is also encountering greater employment difficulties (Picot & Sweetman, 2012).

Some explanations for this observation include the change in immigrant demographics, with the shift from European immigration to most new comers originating from Asia and Africa. Factors such as language barriers, cultural differences, racial discrimination, and the lack of recognition of foreign education and work experience contribute to the problem (Picot & Sweetman, 2012). Language skills also prove to be crucial in economic outcomes of immigrants; those with French or English skills are able to receive income in accordance with their educational level and experience. The poor economic integration of immigrants in the Canadian labour market can be attributed to increasing racialization of the labour market, indicated by high representation of racialized groups in low income sectors and occupations. The racialization of
the Canadian labour market is embedded within the global economic trend towards neoliberalism, which includes deregulation, welfare state retrenchment and privatization of public services (Galabuzi, 2004). The restructuring of the global economy to neoliberal forms of economic policies and increasing prevalence of casual and precarious work has disproportionately affected racialized groups, a significant proportion of which are immigrants to Canada.

The loss of socioeconomic status associated with lower income, and greater likelihood of precarious employment among immigrants limits their exposure to health promoting conditions (Newbold, 2006). Low income is an established predictor and determinant of diabetes incidence. Higher prevalence of diabetes in low-income groups has been documented in across a range of populations and is shown to have a graded association with higher likelihood of diabetes among low income groups than high income (Dinca-Panaitescu et al., 2011). Type II diabetes prevalence and mortality is higher in low income groups, even in countries with a universal healthcare system (Lysy et al., 2013). This finding is important because it reveals the impact of the social determinants of health beyond the provision of essential healthcare, as is the case in Canada. The role of low income and poverty is cumulative and multi-factorial, limiting social and economic opportunities for new immigrants and increasing their likelihood of engaging in risk factors for ill health (Halli & Anchan, 2005). The socioeconomic disadvantages and labour market structure play a significant role in the health and incidence of diabetes among immigrants, and a critical analysis of the policies and systemic unequal economic arrangements are required in immigrant health discourse.
Psychological Stress and Mental Health

Immigration and the subsequent processes of integration and adaptation are sources of significant stress and emotional insecurity that can render new immigrants psychologically at risk. The new environment immigrants find themselves in, particularly those from the non-majority source countries in Asia and Africa, can present stark differences in values and culture, often opposed to their native culture (Kalanga Wa Tshisekedi, 2008). Pre-immigration and post-immigration experiences are critical to social and economic integration success. Pre-immigration experiences can be difficult especially for those coming from traumatic circumstances, whereas post migration experiences include the re-building of most social, occupational, cultural and institutional connections that have been lost in the migration process. Evidently, this transitory period is associated with prevalence of emotional vulnerability and stress.

The increased risk for mental health issues among recent immigrants is important for type II diabetes incidence because of the hypothesized relationship between elevated stress levels and its physiological impact on type II diabetes incidence and management. Research has shown that stressful experiences may be related to the onset of type II diabetes, and hinder management of the disease (Lloyd, Smith & Weinger, 2005). The body has an ability to anticipate stressful situations and sets in motion physiological mechanism in response. When a situation is perceived as threatening and potentially dangerous, the body engages in the physiological response known as "fight or flight". Chemicals such as adrenaline and cortisol prepare the body for action and lead to an increase in the availability of usable energy; by means of breakdown of fats, carbohydrates and proteins (Lloyd, Smith & Weinger, 2005). The release of cortisol also increases available glucose in the blood and enhances the brain's use of glucose. This process acts as a natural alarm system, however, if stress levels remain constant, the presence of cortisol
and other stress hormones can lead to disruption of normal body processes, putting an individual at high risk for many health conditions including increasing risk of diabetes development (Lloyd, Smith & Weinger, 2005).

The socioeconomic, cultural and structural conditions new immigrants find themselves in upon arriving to Canada may be major contributors and sources of stress, and warrant significant attention in by any attempts to address the high prevalence of type II diabetes in this group. The stress associated with immigration and integration into a new society may have a role in the earlier onset of diabetes among immigrants as compared to the general population (Creatore, 2010). Negative mental health and sustained elevation of stress levels leading to stemming from the immigration process are potential risk factors for diabetes incidence. Immigration and settlement should therefore be identified as a significant determinant of health given its influence is broad and impacts the quality of other health determinants and risk factors for diabetes.

Racialization and Discrimination

The racialization theory of health states that it is likely that adverse health outcomes such as prevalence of diabetes among visible minority immigrants stem from the negative physiological impacts of the experiences of discrimination in everyday interpersonal and institutional encounters. Race is a social construct that leads to racialization; the social and political distinction made between groups by means of unequal power and resources and racial inequalities exist in health outcomes, access and quality of healthcare received in Canada (Veenstra, 2009). Racialization occurs through all facets of society, from economic and social institutions to education and personal interactions. Institutional racism, which can be defined as the practices and policies used to put ethnic minorities at a disadvantage can limit the social, educational and employment opportunities for people of colour; impacting their socioeconomic
status and consequently their health status. The direct impact of discrimination on health is often physiological, manifested by high levels of stress (Veenstra, 2009). The indirect and longer term impact of discrimination on health is through unequal access to higher education and employment opportunities that stunt the ability to climb the social ladder and concentrate racialized groups disadvantaged socioeconomic classes. The impact of discrimination represents an additional dimension of disadvantage for immigrant populations and more research is required to uncover the physiological mechanisms through which discrimination impacts diabetes outcomes and overall health and wellbeing.

Social Capital

Immigrants’ ability to navigate their way in a new country, find employment and housing, access appropriate healthcare and participate in civic life is directly impacted by their level of social networks and social capital. Social capital is a term that combines the theoretical and empirical evidence that posits the relationship between social ties and well-being (Zhao, Xue & Gilkinson, 2010). Employment, as documented earlier is a key determinant of health, and social networks, formal and informal act as information channels for seeking employment opportunities. Social relations have an important impact on whether immigrants will have a job four years after immigrating, even more so than individual human capital (Nakhaie & Kazemipur, 2012). At a basic level social capital is the idea that individuals benefit from interpersonal and social networks that carry value and provide them with beneficial resources (Staber, 2006). A component of social capital is social inclusion, which involves the basic notions of belonging, acceptance and recognition (Omidvar & Richmond, 2003).

Social capital and social inclusion are important determinants of health, particularly immigrant health (Van Kemenade, Roy & Bouchard, 2006). Social capital and social networks
have been connected to better health outcomes as well improving the determinants of health themselves, such as employment and educational rates. Social networks can serve as tools to improve awareness of health information, improve access to health services, reinforce healthy behaviours such as physical activity, and provide emotional support, reducing stress. It is also a tool through which provision of material determinants of health are accessible such as financial assistance, transportation, child care and a general safety net (Simich, Mawani, Wu, & Noor, 2004). The presence of high social capital influences health through a psychological mechanism of better coping with and buffering of stress. Interpersonal networks are also important as they promote a sense of belonging and reduce feelings of isolation, improving emotional health.

Many newcomers arrive in Canada, having to rebuild social networks and experiencing periods of isolation and unfamiliarity with a system different from what they are accustomed to. Sparse personal and social resources have been shown to be an impediment to coping with the challenges associated with integration and settlement (Stewart et al., 2008). Newcomers face systemic barriers in their attempts to seek social resources and existing policies aimed at providing support to newcomers are inadequate. Social supports have been shown to be critical in reducing stress, maintaining health and achieving self-sufficiency (Stewart et al., 2008). Research by Zhao, Xue & Gilkinson (2010) further supports the influence of social, organizational and group networks on the health of recent immigrants. Social support is critical to maintaining the prerequisites of health such as income, shelter, and access to opportunities and an important component for mitigating the socioeconomic and cultural changes immigrants encounter when arriving in Canada. Social support aids in successful transitions and helping reduce adverse effects of the settlement experience. Without appropriate social networks, the
The psychological effects of settling in a new country can have lasting negative physiological impacts.

**Conclusion**

The results of this analysis concur with previous research that shows that there is an overabundance of initiatives based on lifestyle and environmental approaches to health over those addressing socioeconomic determinants (Gore & Kothari, 2012). This study further strengthens the notion that despite wide recognition of the impact of structural and economic conditions in creating health inequalities, the theoretical understanding has yet to translate into practical policy change.

Policies and programs pertaining to social, health and employment services need to be of central concern when discussing the health trajectories of Canadian immigrants. These policies shape the dynamics of immigrant integration, inclusion or exclusion and success in society. Immigrants' lives are closely tied to domestic policies and deserve attention from health and social researchers and policy makers. While Canada was once highly regarded internationally for its quality of immigrant services, the economic restructuring and priority shifts of the 1980s negatively impacted the scale and effectiveness of programs for immigrants (Stewart et al., 2006). Canadian programs and policies continue to focus on downstream determinants rather than upstream (broader structures, policies and institutions) which set the boundaries of how far immigrants can progress and integrate in Canadian society. Overall the impact has been a reduction in the social safety net for new immigrants and reflects the power of neoliberal ideology to both influence public policy and discourse.

The lack of federal responsibility to ensure that policies reflect the changing demographics of Canadian society with regards to socioeconomic realities for new immigrants,
coupled with the inability of municipal and regional governments to influence income security, employment and educational policy have resulted in a patchwork of community based, behavioural-centric initiatives as a default for addressing diabetes among immigrants in Canada. To make meaningful impact on the health immigrants in Canada, the causal role of public policy needs to be addressed with an advocacy perspective. Further research needs to be done on the role of systemic and everyday racism and its psychological and material impacts (limits to higher education, employment and strong social capital and networks) on perpetuating health inequalities. The first step is to widely acknowledge and address the systemic drivers of immigrant health and diabetes within academic literature, research and public policy discourse. Bringing to the forefront the role that socioeconomic barriers and racial discrimination play on health outcomes will help re-frame the issue of diabetes to reflect more accurately the nature of its incidence and subsequently develop more effective policy recommendations to reduce the burden of disease.
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Cardiovascular complications and mortality after diabetes diagnosis for South Asian and


### Appendix

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