The policy-making process for trans fat and sodium reduction strategies in Canada: exploring stakeholder influence through a decade of voluntary agreements with the food industry

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List of Acronyms and Abbreviations

ACF: Advocacy Coalition Framework
ATIP: Access to Information and Privacy
CDOH: Commercial determinants of health
CSPI: Centre for Science in the Public Interest
CPC: Conservative Party of Canada
CVD: Cardio-vascular disease
FCPC: Food and Consumer Products Canada
GOC: Government of Canada
HC: Health Canada
HES: Healthy Eating Strategy
HSF: Heart and Stroke Foundation of Canada
HOC: House of Commons
LPC: Liberal Party of Canada
NCD: Non-communicable disease
NDP: New Democratic Party of Canada
NGO: Non-governmental organization
PHO: Partially hydrogenated oils
PMB: Private Member's Bill
PMO: Prime Minister's Office
SWG: Sodium Work Group
TFTF: Trans Fat Task Force
WHO: World Health Organization

Declaration of own work

I, Lesley James confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signed on October 24, 2021

Lesley James

Abstract

Given the high consumption of trans fats and sodium in Canada, and the related impact on non-communicable diseases, the Government of Canada appointed multi-disciplinary stakeholder expert advisory groups to recommend actions to reduce trans fat and sodium consumption across the country. The advisory groups based their recommendations on the international evidence, which indicates that the most effective ways to reduce trans fats and sodium consumption are via mandatory policy measures. Yet the Government of Canada did not adopt the recommendations but rather implemented voluntary agreements with the food industry. Intakes among Canadians remained higher than the recommended levels. Between the early 2000s and the mid-2010s, public health groups made numerous unsuccessful attempts to influence the government and secure formal regulation of these two harmful ingredients.

This is a study of how stakeholder interests, dynamics and contextual factors shaped the trans fat and sodium reduction policy processes in Canada, from 2004 – 2014. The research comprised three complementary sub-studies to investigate how stakeholders operated within the policy subsystem: 1) a lobby registry analysis, 2) a media analysis and 3) interviews with key stakeholders and document review. Using the Advocacy Coalition Framework as the guiding framework for analysis, this research sets out to shed light on how stakeholders influenced both the trans fat and sodium reduction policy processes in Canada.

The findings depict a complex policy making process where the food industry and health community vied for influence on government decision making. The lobby analysis demonstrates that the food industry had far greater access (both in terms of frequency of communications with the government and access to higher government officials) compared to the health community. This finding was triangulated by the stakeholder interviews which reaffirmed that the food industry worked 'behind the scenes', via lobbying efforts, to block government regulation. The study also highlights the divide within the health community related to scientific evidence on sodium; this contributed to hindering policy progress, fracturing the health stakeholder coalition and also creating confusion within the media, which may have resulted in less public pressure on the government for action on the issue. Understanding the policy processes retrospectively can aid public health advocates in influencing future policy initiatives and be more attuned to the impacts of food industry interference in public policy making.

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Dedication

I would like to dedicate my thesis to my master's supervisor, the late Dr. Allen Backman from the University of Saskatchewan. Dr. Backman is the reason I pursued a doctorate and his unwavering support secured my spot at LSHTM. I am eternally grateful for the career path that you helped set me on and will always appreciate how you believed in me from an early stage.

1. Introduction

Nutrition-related diseases are among the leading causes of mortality and morbidity worldwide[1] and have become an increasing issue within high income countries where the latest burden of disease attributable to poor nutrition is estimated to be approximately 14% of the total disease burden, surpassing the tobacco use burden by nearly twofold.[2] In Canada, the burden of poor nutrition on population health is growing and can be attributed to 47,000 premature deaths annually, and more years spent managing non-communicable diseases (NCDs) than ever before.[3] Much of the issue stems from shifts in the food system, whereby processed and convenience food, high in fat, sugar and sodium has become more commonly consumed than whole unprocessed foods which are high in fibre and health-promoting nutrients.[4] In particular, two ingredients used in food processing have been deemed particularly harmful to health – trans fatty acids (trans fat) and sodium.[1]

Trans fat occur naturally in small quantities in some foods (dairy and meat), but industrially-produced trans fats began to be used in food processing in the 1960s as an inexpensive way to improve food texture and extend product shelf-life.[1, 5] Since the 1990s artificial trans fats have been associated with a range of health harms, most prominently cardiovascular disease.[6] This led to dietary advice from governments and international health organizations recommending consumers limit or avoid trans fat intake;[1] however, trans fats were still commonly used in the food supply and Canada had among the highest intake levels in the world.[6] As such, in the early 2000s health organizations in Canada advocated for government intervention to address high intake levels and urged for regulation and reduction of trans fat within the Canadian food supply.[6]

High levels of sodium consumption have been linked to hypertension, which is the number one risk factor for cardiovascular disease.[1, 7] Sodium is used in foods as a preservative and to improve food taste and texture.[8] As the Canadian diet moved away from home cooked meals prepared with fresh ingredients, and more towards convenience foods eaten out of the home, levels of sodium intake increased well over recommendation daily limits as set out by the World Health Organization among others.[9] Again, health organizations in Canada rallied for government intervention to address sodium consumption as a public health threat.[9, 10]

While the international evidence base highlighted that the most effective ways to reduce trans fats and sodium consumption were population-based policy measures such as changing the food environment and food supply through regulation of trans fat and sodium content in foods[1, 11, 12] or the elimination of trans fat in food processing,[1, 13] the Government of Canada did not adopt such recommendations as put forth by their appointed stakeholder expert advisory group on both nutrition issues.[14] These advisory groups, which included representation from the food industry,

health community and consumers, were brought together to develop a strategy and policy recommendations for the government, both of which resulted in stakeholder consensus for regulation, reduction targets and ongoing monitoring of the food supply.[6, 9] The consensus on policy measures to include upstream measures aimed to change the food system was unexpected because these types of interventions are often opposed by the food industry, in favour of individual and personal responsibility oriented solutions.[4, 15, 16] While the adoption of effective evidence-based and stakeholder-endorsed trans fat and sodium reduction measures seemed straightforward based on the consultative and engaging policy process established by the government[6] and the similar recommendations put forth by WHO and other health organizations,[1, 7] the government failed to implement such measures and instead choose voluntary agreements with the food industry.[14]

The policy processes from mid 2000s to mid-2010s in which the Canadian government adopted voluntary agreements with the food industry despite the calls for regulation from international and domestic health organizations provides an opportunity to assess and analyse how stakeholders influence government decision making in nutrition policy. While there is a growing body of research investigating food politics and how policy actors (stakeholders) work to influence nutrition policy systems, the literature related to the Canadian experience is limited and presents an opportunity for investigation.

1.1. Study rationale

This research addresses the current knowledge gap by exploring whether and how stakeholder interests, dynamics and contextual factors shaped the trans fat and sodium reduction policy processes. The study employs the Advocacy Coalition Framework (ACF) as a theoretical foundation guiding data collection and analysis and included three complementary sub-studies to investigate how stakeholders operated within the policy subsystem: 1) an analysis of the Registry of Lobbyists, 2) a media analysis and 3) interviews with key stakeholders. The rationale for these sub-studies is presented below.

In public health, stakeholders are actors (individuals or groups) who can affect or are affected by an issue and as such have a vested interest in the policy or issue at hand.[17] The interested parties can include regional, national and international legislators and governments, donors and funding agencies, labour organizations (unions, professional associations), commercial/private for-profit organizations, non-profit groups (non-governmental organizations, foundations, charities), media outlets, civil society and consumers.[17]

The thesis is rooted in the ever growing literature on the commercial determinants of health (CDOH) which are defined as "actions and omissions by corporate actors that affect health… and arise in the context of the provision of goods or services for payment and include commercial activities, as well as the environment in which commerce takes place."[18] The CDOH are often related to unhealthy commodity industries (food, tobacco, alcohol, drugs, fossil fuels, etc.) and can have positive or negative impacts on population health through the engineering of social, cultural, and physical environments.[18, 19]

1.1.1. Rationale for analysing the Registry of Lobbyists

First, an analysis of the federal Registry of Lobbyists (the lobby registry) during the policy negotiations provided an opportunity to illustrate and compare the influence of various stakeholder groups on the government. Political science and public policy theories explain that stakeholder access to and communications with decision makers are linked with shaping policy adoption.[20, 21] The rationale for the lobby registry analysis is the following: to the best of my knowledge, there have only been two peer reviewed studies of food industry lobbying in Canada. Both of those studies focus on the more recent 2016 Healthy Eating Strategy (HES).[22] One study used the government's transparency policy - Health Canada's Openness and Transparency website which tracked communications between stakeholders and bureaucrats. The study looked at the various components of the HES (one of which was sodium reduction) during the policy development phase of 2015-2017 and did not look at the specific trans fat and sodium reduction strategies and policy processes from the early 2000s, which is where this investigation will begin. A second research study did leverage the Lobby Registry to examine lobbying around the proposed legislation to restrict marketing of food and beverages to children.[23] In addition, the trans fat and sodium reduction cases were studied as part of a UK Health Forum produced report entitled *Public health and the food and drinks industry: The governance and ethics of interaction, Lessons from research, policy and practice.*[14] However, this report did not employ any specific methods for investigation, and instead relied on the expert account from an involved civil society stakeholder. Due to the limited research assessing lobbying on nutrition policy in Canada, lack of research looking specifically at the trans fat and sodium reduction lobbying, and questions left unanswered about why the government choose to ignore the consensus recommendations of the Trans Fat Task Force (TFTF) and Sodium Work Group (SWG) there is a key opportunity to fill research gaps and utilize the Registry of Lobbyists to examine how stakeholders interacted and influenced the government over the course of investigation.

1.1.2. Rationale for conducting a media analysis

Second, a media analysis analysed how stakeholders used the news media as a communications tool to share their perspectives, shape public opinion and influence political discourse on the sodium and trans fat issues. The news media is a key stakeholder in the policy process and is defined as the collective of all the diverse communication forms (radio, television, internet, magazines, print and digital newspapers, and podcasts) who share information on public issues to the heterogeneous population while having a "huge impact on the public's knowledge, beliefs, perceptions, attitudes and behaviours, not only as individuals but also as families, communities and wider society."[24] A media analysis assesses framing of issues and depicts policy various solutions which, according to public health media literature, are largely influential in advancing policy.[25] The media is thought to play a key role in not only in the sharing of health information to educate the public and facilitate behaviour change among individuals, but also in influencing healthy public policy. [26] A wealth of literature shows that what and how the media reports on health issues pivotally shapes the public perceptions of public health debates.[25, 27] Research shows that "the news media can also be instrumental in framing how the public thinks about who in society is responsible for solving important public health problems."[25, 28] Dorfman and colleagues explain that when public health issues are described in the media, they need to "be rooted in a framework of values which suit public health goals".[25, 29] Framing of public health issues is thought to tap into "complex moral structures that trigger how people react to a whole constellation of social and public policy issues in our society."[28] It is further suggested by Dorfman et al that there are two types of frames, 1) conceptual frames (those that operate inside our minds and help make sense of the information cues we get from the outside world) and 2) news frames (those that organize the meaning in stories and information which differentiate what is and what is not important).[28] Content and elements of news story are considered to be "within the frame" whereas those aspects and details excluded from the news are thought to be "outside the frame" and therefore believed to be less important or worthy.[28] Dorfman expands on this concept by explaining that "frames" are also used by a wide range of stakeholders in advocacy communications to persuade the audience (government, reporter, or public) to buy into a public health issue and the stakeholders' proposed policy solution.[25] Public health media research is considered to be a highly important field of investigation that can help the public health community better understand how to most effectively use media as a strategy and tactic to advance policy issues.[25] There is a moderate amount of literature depicting how the media influences the public policy cycle. A 2017 integrative systematic review on the topic found only 21 published research studies. All but one study found that media advocacy was beneficial to the advancement of public health policy, with one study suggesting that media advocacy tipped off the

opposition advocacy coalition which then blocked public health progress.[30] Since the 2017 review, there has been more research conducted assessing the connection between media and public health policy. Studies have looked at the role of traditional media as well as the impact of social media in the Web 2.0 era.[27] A limited number of studies have assessed the impact of media on the policy making process in Canada with focuses on clinical authority,[31] tobacco control policies,[32] mandatory nutrition menu labeling,[33] and climate change policies among others. These studies have illustrated that mainstream Canadian media tends to include a range of stakeholder perspectives[32, 33] and that public health and health policy advocates attribute some of their policy wins to media coverage and supportive framing of the issues.[31]

1.1.3. Rationale for conducting stakeholder interviews

Lastly, semi-structured key informant interviews were conducted. Key informants are defined as individuals who are a source of primary information with knowledge and insight on a topic of interest, such as an organization, event, economic system or political structure, and are consulted (often via interview) for the purpose of providing as complete a description and explanation as possible of the issue in question.[34] Interviews were held with stakeholders involved in the trans fat and sodium policy processes including those who sat on the expert advisory committees representing the food industry, health organizations, consumer groups and government. As with existing literature on the barriers and facilitators on influencing nutrition policy,[11, 15, 35, 36] thematic analysis of the interviews depicted the important role of evidence and its application by stakeholders in both advancing and hindering trans fat and sodium reduction policies in Canada. The rationale for this sub-study is that stakeholder influence on government decision making is in part rooted in how stakeholder beliefs and values shape their views of the public health issue. These beliefs can influence how stakeholders work together or in opposition, how they frame the problem, and the solutions they propose.[21, 37] While the evidence interpretations and policy recommendations from the SWG and TFTF provided a sense of stakeholder consensus, the political science and public health literature suggest that additional factors can drive how science and knowledge are utilized in a the policy making process.[38-40] Exploring the use of evidence by various stakeholders can help explain influencing policy and policy decision making and particularly understand why the government pursued voluntary approaches for both public health nutrition issue. When considering the CDOH, the generation of research and evidence is also a political and public relations tactic undertaken by unhealthy commodity industries to suit their corporate interests.[18] The various uses of evidence and monitoring can also explain the effectiveness of each voluntary approach in terms of changing the food supply and reducing consumer intake of sodium and trans fat. According to French, evidence is the “product of research: organized knowledge

produced in accord with the standards of the relevant academic disciplines."[41] For the purposes of this study, evidence can extend beyond peer-reviewed articles, and can include the data, analysis, interpretation, information messages and knowledge generated and shared between stakeholders. Evidence and how it is used, interpreted and generated by each stakeholder underpin most of the thematic analysis and therefore will be used for an overall illustration and assessment of the trans fat and sodium reduction policy making processes. As such, an additional framework by Malekinjad et al. which focuses specifically on evidence use by stakeholders in health policy was applied and enabled further analysis and insight on how evidence as a factor impacted (both facilitating and hindering) the development of trans fat and sodium reduction policies.

1.2. The non-communicable disease (NCDs) context

This chapter summarizes the magnitude of nutrition related NCDs along with the health harms of the ingredients (trans fat and sodium) being explored and an overview of the findings from a literature review assessing interventions to address trans fat and sodium intake, along with highlights from the evidence base describing the policy process on trans fat and sodium reduction elsewhere in the world. There is a summary of the trans fat and sodium reduction policy processes in Canada, starting with how the issues made their way onto the political agenda, then descriptions of the expert advisory committees convened by the government to address the nutrition issues, which concludes with an illustration of the measures adopted by the government. This leads into the aims and objectives of the thesis, followed by the scope and overview of the thesis.

1.2.1. The global burden of NCDs

Non-communicable diseases (NCDs) also known as chronic diseases account for approximately 70% of global mortality with the main causes being cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.[42] While in the past NCDs were most often associated with older age groups, premature disease has become more common in younger populations and across all countries regardless of income due to risk factors such as physical inactivity, unhealthy eating, alcohol abuse and tobacco use. [42] NCDs disproportionally burden marginalized and disadvantaged groups in all countries.[43]

Unhealthy eating is a leading modifiable risk factor that increases the risk of NCDs and the leading cause of mortality worldwide.[42, 44] More specifically, poor diet is the main (or second greatest) driver of NCD disease burden around the world as indicated in all World Health Organization sub-regions.[4, 45] Unhealthy eating patterns (consuming too much sugar, fat, sodium and calories) and a reliance on processed and convenience foods have increased in the past few decades, whereas health

protective eating patterns like consuming calories from fibre-rich foods such as wholegrains, pulses, fruits and vegetables and roots have decreased.[4] Shifts in food systems as related to the CDOH have meant that energy-dense and nutrient poor foods have infiltrated all marketplaces around the world and often the most vulnerable and lowest-income populations within a country are the highest consumers of these foods and suffer the most related harm in NCDs.[4] Literature highlights that the food environment is increasingly engineered by the private sector to promote unhealthy foods and as such, the CDOH are found to be associated with NCDs.[18, 19]

1.2.2. NCDs in Canada

Canada suffers from a high prevalence of NCDs, such as cardiovascular disease (6.1%), diabetes (8.8%), and cancer (7.3%),[46] many of which are increasing in prevalence and occurring at younger ages.[47, 48] Cancer and cardiovascular disease have remained the leading causes of disability adjusted life years however, cancer had overtaken cardiovascular disease as the leading cause by 2016.[3] Life expectancy in Canada increased from 81 years in 2006 to 82 years in 2016 ranking 10th among global comparator countries.[3] However, as life expectancy increases, trends over time show that Canadians are living more years with NCDs – from 2006 to 2016 there was a 17% increase in the number of all-age years lived with disability due to NCDs.[3] As with similar high income countries, the burden of disease in Canada is shifting from premature mortality, to a greater burden of years lived with disability, which creates additional burden on the public universal health care system.[3] A modelling study estimates that poor nutrition among the Canadian population causes CAD $13.8 billion/year in indirect and indirect costs.[49] It is believed that poor nutrition caused approximately 47,000 deaths in Canada during 2017.[44]

1.2.3. Nutrients of focus for NCD prevention and management

Due to the rise in NCDs and growing evidence base demonstrating a connection between poor nutrition and chronic disease, the World Health Organization (WHO) has called upon member states to develop effective food and nutrition policies to reduce the consumption of unhealthy foods.[1] In particular, there has been historical emphasis on reducing consumption of two nutrients– trans fat and sodium. [50] These two nutrients have been highlighted as contributing to the shifting burden from communicable to non-communicable diseases around the world.[1, 4]

1.3. Trans fats

1.3.1. Trans fats and their relevance to the burden of disease

Trans fatty acids (hereafter referred to as trans fats) are unsaturated fats which in low levels naturally occur in some meat and dairy products,[51] but they are present in higher quantities and

consumed more often in industrially produced partially hydrogenated vegetable oils (p-HVO).[6] Naturally occurring trans fat (which make up 2-5% of fat content) are produced by animals and the consumption of such through meat and animal dairy is not considered worrisome to human health. [6] Artificial trans fats, which became commonly used in the 1960s, are created by adding hydrogen to liquid vegetable oils which makes them more solid.[13] Artificial trans fats are added to processed foods and can represent as much as 45% of fat content in a product.[6] They are a low-cost way for the food manufacturers to lengthen shelf-life and improve the taste and texture of food products.[52] As national and international food systems shifted towards processed and convenience foods in the later part of the 20th century, trans fats became an increasingly common ingredient used by the food industry to keep food prices low and palatability high.[4]

By the 1990s, research quickly emerged linking trans fat to serious health consequences,[6] such as increased LDL (bad cholesterol)[53] and heart attacks.[54] Since then, incontrovertible evidence demonstrates that trans fats are associated with adverse health outcomes, such as increased risk of CVD,[55] Alzheimer's disease, diabetes and some cancers.[13] More specifically, trans fats increase low density lipoprotein (LDL) (unhealthy cholesterol) levels and decrease high density lipoprotein (HDL) (healthy cholesterol) levels and create inflammation in the body which contributes to the onset of chronic disease[56] Overall, the evidence indicates that high levels of trans fat consumption increases the risk all-cause mortality by "34%, coronary heart disease deaths by 28%, and coronary heart disease by 21%."[57] Estimates from 2010 suggest that approximately 540,000 global coronary heart disease deaths each year are due to trans fat intake, a number which is represented by increased rates of trans fat consumption in low and middle income countries.[58]

1.3.2. Trans fats consumption

There is limited information available to illustrate the scope of trans fat intake around the world.[59, 60] An assessment of the trans fat consumption from 1990 to 2010 estimates that the average global intake of trans fat to be approximately 1.4% of total energy with overall intake remaining stable over the two decades.[60] For 2010, the assessment found a total energy intake range of trans fats to be 0.2% (Barbados) to 6.5% (Egypt) across countries.[60] The highest intake levels were found in North America, Latin America and North Africa/Middle East countries and among younger age groups.[60]

In the 1990's it was reported that Canada had some of the greatest quantities of trans fat consumption worldwide [61] due to our heavy reliance on vegetable oils (e.g., Canadian produced canola oil).[6] In the early 2000s assessment of the food supply indicated high levels of trans fat in many food categories, but lack of population health surveys meant that there was no current baseline data to depict the levels of intake among Canadians.[6] Instead, modeling was used to

determine that the average daily consumption of trans fats was 3-9 grams, lower than the previous estimates of 5-13 grams in the 1990s.[6] However, this was still considered more than twice the recommended daily limit as set out out by the WHO, which suggested trans fat intake not exceed 1% of energy intake.[6]

1.3.3. Trans fat reduction policies around the world

Over the late 1990s and early 2000s, national dietary guidelines recommended consumers reduce their intake of trans fat.[62] And by 2009, health bodies including the WHO and Institute of Medicine (IOM) had called for countries to reduce trans fat in the food environment and signaled trans fat consumption should represent no more than 1% of daily caloric intake.[63] In 2011, WHO and the UN developed a global framework to address non-communicable diseases with one focus being the "adoption of national policies that virtually eliminate partially hydrogenated vegetable oils in the food supply and replace [them] with polyunsaturated fatty acids."[64] Then in 2018 WHO released a detailed plan entitled REPLACE (review, promote, legislate, assess, create, enforce) to remove industrial produced trans fat from the global food supply by 2023 indicating there was no safe level of intake.[65]

In a 2017 systematic review assessing the effectiveness of approaches to reduce dietary trans fat, findings showed a wide variety of policy measures in use across the globe including self-regulation (Costa Rica, Netherlands and the Americas), national mandatory labelling (South Korea and the United States), mandatory trans fat labelling and voluntary limits (Canada), mandatory trans fat limits in restaurants (New York City), mandatory trans fat limits in partially hydrogenated oils(Iran) and total ban of trans fats in food (Denmark).[66]

From the review, Canada represents the only jurisdiction whose policy action on trans fat reduction was to instil mandatory nutrition labelling along with government –industry set voluntary limits.[13] This hybrid policy approach differs from the advice of the World Health Organization and expert research groups whose recommendations include trans fat bans or mandatory limits as the most effective reduction intervention.[13, 52, 66] In assessing the effectiveness of the various trans fat reduction measures, the systematic review found that limits or bans on trans fat content were the most impactful and virtually eliminated all trans fat from the food supply.[66] Voluntary approaches showed reductions in trans fat intake ranging from 20% to 38% and labelling approaches were slightly more effective with reductions in consumption between 30% and 74%.[66] However, it was warned that while labelling policies demonstrated some benefit, the reductions in trans fat content were not consistent across all product categories and trans fat remained in cheaper foods, raising concerns about consumption in low-income populations who are more price sensitive.[66] Similarly,

another systematic review looking at trans fat reduction interventions found that legislation to remove trans fat was the most effective and interventions targeted at individuals (food labelling and dietary counselling and education) demonstrated smaller reductions in trans fat intake and were deemed least effective.[67]

The systematic reviews were not able to assess all trans fat reduction interventions around the world because of some jurisdictions have poor data collection or assessment of measures had not yet been published. A more recent overview of trans fat reduction measures developed for the Centres for Disease Control (CDC) found that as of 2019, 40 countries (mainly high-income and upper-middle–income) implemented limits/restrictions of trans fat content, restricted the use of partially-hydrogenated oils (PHOs), and/or mandated labelling trans fat content on packaged foods.[68]

While there is growing research around the effectiveness of trans fat approaches, there is limited literature explaining the policy process and response to trans fats around the world. Colon-Ramos et al conducted a case study of policy action on trans fats in Costa Rica and found a complex dynamic between the translation of scientific evidence into action within which specific factors were found to impede or promote policy action.[15] Barriers to policy action included lack of information/awareness of scientific studies focused on a specific region; lack of information/consensus about policy solutions; competing interests, beliefs and attitudes between sectors, all of which resulted in limited collaboration across sectors. [15] Facilitators to policy action "included supportive organizational infrastructures with commissioned expert task forces which can review scientific and policy literature," as well as coordinated arenas which overcome the disconnect between sectors.[15] These factors enabled partnership between stakeholders such as government, food industry and researchers, and were considered essential for policy action in Costa Rica.[15]

In a broader regional investigation Colon-Ramos looked at government policy action as a result of WHO trans fat recommendations in Latin America and the Caribbean.[69] It was found that policy action was uncoordinated or poorly implemented with a lack of consistency in trans fatty acid definitions, a wide range of reduction strategies, limited surveillance on food system and eating patterns, lack of consumer awareness and poor understanding of trans fats.[69] Facilitating factors for trans fat reduction were government collaboration with industry, mandatory labelling regulation as well as increased global and regional visibility on the issue of trans fat.[69]

Downs et al examined the policy process involved in regulating trans fats in India along with implementation challenges and found many complexities similar to those in other studies such as lack of awareness on the issue, a large and unorganized retail sector, and additional barriers such as

consumer's taste and value preferences, and lack of public health capacity. [35] Another study investigating the Mexico trans fat regulation identified barriers and opportunities around trans fat policy development and summarized existing literature on the topic citing factors for effective trans fat reduction as awareness among the public and policy makers about of the adverse health effects associated with trans fats and the importance of champion consumer and civil society organizations. [70] Using a stakeholder analysis, the researchers explored contextual factors influencing trans fat policy action and found that the issue lacked legitimacy and support for health and regulatory intervention because of gaps in public engagement and advocacy.[70]

A 2009 review which looked at interventions aimed to rid the food supply of trans fat found several common factors which appeared to be central to successful trans fat reduction approaches.[61] Similar to other studies, science and information in the form of expert national panels were considered key in making concrete recommendations which were appropriate to the local environment.[61] Also of great importance was "the role of the media in facilitating food supply change" which acted to increase "consumer awareness and pressure the industry to meet the challenges of trans fat reduction."[61] The media was demonstrated to play an important role in Denmark, Canada, NYC and in Argentina with increased public awareness motivating shifts in consumer demand, food industry changes as well as government action to facilitate and set targets for product reformulation.[61]

1.3.4. Canada's decade-long approach to reduce trans fats intake – labeling, voluntary agreements and monitoring followed by elimination

In 2003, Canada was among the initial countries to mandate trans fat labeling of trans fat on food products, a policy which went into effect in 2005.[5] However, it was deemed that labeling may not be enough to reduce trans fat intake among Canadians. The government's pursuit of additional trans fat reduction in Canada officially began in 2004 under a centrist Liberal Party of Canada (LPC) minority government, with a Private Member's Bill (PMB), Bill C-220 sponsored by Pat Martin, New Democratic Party (left of centre) and supported by the right-winged Conservative Party of Canada (CPC) Member of Parliament.[71] The bill which aimed to ban the use of trans fats did not pass into law.[71] However, it acted as a catalyst for the passage of an Opposition Day motion in November 2004, which recommended that Health Canada and the Heart and Stroke Foundation of Canada collaborate to co-chair a multi-stakeholder committee mandated to "provide the Minister of Health with concrete recommendations and strategies to effectively eliminate or reduce processed *trans* fats in Canadian foods to the lowest level possible".[6] The motion was approved with strong support in a vote of 193 to 73, because of the mounting public pressure, media attention and criticism in

Parliament of the government's approach to label TF instead of ban them.[61, 71] The Canadian Government established the Trans Fat Task Force (TFTF) through Health Canada (the department of health), a closed expert advisory panel tasked with the development of a strategy to eliminate or reduce Canada's high levels of processed trans fat.[6] The TFTF was made up of academics, health organizations, health professionals, food and industry representatives and associations, consumer groups and government civil servants.[6] A list of TFTF membership is included in Appendix 1.

The TFTF submitted their final report and recommendations entitled *TRANSforming the Food Supply* to the Minister of Health under a new CPC government in June 2006.[6] The report included consensus recommendations including formal regulations and targets signed off on by all the TFTF members - food industry (manufacturers and food service sector), health organizations, researchers/scientists, and civil society/consumer groups.[6]

TRANSforming the Food Supply: Trans Fat Task Force recommendations:[6]

> 1. *Foods purchased by retailers or food service establishments from a manufacturer for direct sale to consumers be regulated on a finished product or output basis and foods prepared on site by retailers or food service establishments be regulated on an ingredient or input basis.*
>
> *2. For all vegetable oils and soft, spreadable (tub-type) margarines sold to consumers or for use as an ingredient in the preparation of foods on site by retailers or food service establishments, the total trans fat content be limited by regulation to 2% of total fat content. For all other foods purchased by a retail or food service establishment for sale to consumers or for use as an ingredient in the preparation of foods on site, the total trans fat content be limited by regulation to 5% of total fat content. This limit does not apply to food products for which the fat originates exclusively from ruminant meat or dairy products.*
>
> *3. Regulations be finalized by June 2008. A basic phase-in period be set at one year from the date of entry into force of the final regulations. Extended phase-in periods be specified for certain applications (e.g., baking) and for small and medium-sized firms, recognizing that in most cases the transition could be made within two years of the date of entry into force of the final regulations.*
>
> *4. The Government of Canada and all concerned food industry associations urge companies affected to use the most healthful oils for their food applications.*
>
> *5. The Government of Canada encourage the relevant federal granting councils and/or federal departments to support research on trans fats in the areas of clinical nutrition, food and agriculture, and population and public health. The Government should help ensure that*

the research results are transferred to relevant decision-makers.[6]

Within a few months of the TFTF report being published, a new CPC minority government replaced the prior Liberal government as the party in power. Although the report was submitted to the Minister of Health in 2006, a year later, the new CPC government had still not adopted the recommendations from the report.[61] Once the government did respond to the report in 2007, they did not follow the specific and formal regulatory recommendations or timelines to finalize regulations by June 2008 as set out by the TFTF, and instead set voluntary goals for the food industry which aligned with the task force targets.[61, 72] The government's voluntary approach suggested a total trans fat content of no more than 2% in cooking oils and soft margarines and no more than 5% in other food products.[61] Health Canada already required that food products display trans fat levels on the Nutrition Facts table with the hope this would promote product reformulation.[61] In 2007, the government further expanded its voluntary approach with a monitoring program.[61] In this program, food manufacturers and Health Canada would test food products and report on the levels of trans fat within various food products and categories.[61] This information would be made public via a Health Canada webpage on a regular basis.[61] The voluntary approach and monitoring included a warning to industry that the government would impose hard regulation should reductions not be made within a two-year monitoring period from December 2007- December 2009.[61, 73]

Although all 25 members of the TFTF agreed to the report consensus recommendations when the report was released in 2006, the 2007 decision by the government to adopt a voluntary approach with extended timelines was praised by the food industry including the Canadian Restaurant and Food Service Association.[74] This raises questions about whether the food industry members of the TFTF truly supported the regulatory recommendations of the TFTF report, or they were merely giving the impression of consensus.[14] Monitoring of the food supply continued until December 2009 when the government announced that trans fats reductions in the Canadian food supply were sufficient, monitoring would likely halt, and regulations would not be introduced.[75] In 2009, when the monitoring program ended the government stated, "Health Canada may monitor some food categories in the future. Currently the department is analyzing the impact of the two year monitoring program on the average trans fat intake of Canadians to determine what the best approach would be to reach the targets recommended by the Trans Fat Task Force".[75]

From the highest levels in the 1990s through to the end of the trans fat monitoring program in 2009, average trans fat consumption levels in Canada went from 8.4 to 3.5 grams per day.[6] However, Canada had not reach the trans fat levels recommended by the World Health Organization and the

last monitoring report indicated that 25% of the food products tested contained high levels of trans fat with the baked good category being among the worst.[6] Since 2008, public health organizations have been vocal in stating that although the food industry had considerably reduced trans fat content, the food supply has not yet reached the targets as recommended by the TFTF.[6, 14] The government's decision to abandon formal regulation occurred despite advice from Health Canada and health stakeholders along with criticism from parliamentarians that regulation would address the remaining trans fat content in the food supply.[76] As put by Bill Jeffrey national coordinator, Centre for Science in the Public Interest (CSPI) and member of the TFTF he, "was quite disappointed that the trans fat task force recommendations that were made more than three years ago… haven't been implemented. Health Canada has already missed a self-imposed deadline for the ultimatum it gave to the food industry to reduce the amount of trans fats to acceptable levels or face regulations. That deadline passed in June and Health Canada hasn't even released the most recent round of monitoring data."[77]

Opponents of the decision were concerned that Canada had not yet met Task Force targets for levels of trans fat in the food system.[78] Critics included health care organizations, health professionals, public health nutrition leaders and media with the later expressing that the government was "putting the interest of industry before the health of the public".[78] The evidence continued to mount on the harms associated with trans fat and the WHO requested the removal of trans fats from the global food supply.[50] In January 2010, concerned health groups in Canada including those who were part of the task force advocated for the adoption of a regulatory approach.[79] The Heart and Stroke Foundation urged Canadians to "write to the federal minister of health to request that the federal government live up to its commitment and introduce trans fat regulations."[79]

Public health stakeholders continued to call for regulation as a more effective approach but the government did not respond, although it acknowledges that levels of trans fat remain high in some categories, such as baked good and foods in institutional settings.[80] It wasn't until a change of government in 2014, from CPC to LPC, that the new government announced intentions to ban trans fat giving the food industry over a 3 year period to prepare for the elimination.[81] In September 2018, HC banned artificial trans fat from the Canadian food supply. However, from 2004 – 2014 trans fat remained in the food supply in spite of numerous attempts for formal regulation by Members of Parliament and health organizations.[62]

1.4. Sodium

1.4.1. Sodium and its relevance to the burden of disease

While the body requires a certain level for sodium to function, excessive sodium intake is a driver of poor health outcomes. [82] Sodium is used as a flavour enhancer, as a preservative and a component of food production.[83] Although often used interchangeably, sodium and salt are technically different. Salt is the crystal-like chemical compound sodium chloride that we often sprinkle in food from a shaker.[82] Sodium is the dietary mineral which is found in food either naturally or added during processing.[82] Table salt is approximately 40% sodium.[82]

The body does not produce sodium naturally but requires its intake for vital bodily functions like conducting nerve impulses, contracting and relaxing muscles, along with balancing water and minerals.[82] To do this, a person needs about 500 mg of sodium per day.[82] Excessive sodium intake is associated with health risks including CVD, hypertension, stomach cancer, osteoporosis, obesity, kidney stones and symptoms of asthma.[84]

The main health concern with excess sodium consumption is hypertension (high blood pressure), which is a result of high levels of sodium in the blood leading to water retention and more fluid around the cells and a greater volume of blood throughout the body.[85] Higher blood volume puts more pressure on the heart and blood vessels creating stiffening which leads to hypertension. [85] Hypertension is a leading risk factor for heart disease and stroke. [7] About 1/4 of Canadians 20 years of age and older are hypertensive, of which 30% is attributed to excess sodium intake.[12]

The leading global metabolic risk factor is hypertension of which 19% of total deaths are attributed.[44] More specifically, in relation to diet related disease, the majority of nutrition related mortality and two-thirds of diet-related Disability Adjusted Life-Years (DALYs) were linked to unhealthy eating patterns including excess sodium intake.[42] A 2007 analysis concluded that approximately 8.5 million deaths worldwide could be avoided in a decade through population initiatives to reduce dietary sodium.[86] In 2017, high intake of sodium was attributed to 3 million deaths globally.[44]

1.4.2. Sodium consumption

The most comprehensive assessment of global sodium consumption found that in 2010, average intake was 3.95 g/day which was nearly twice the WHO recommended limit of 2 g/day.[87] In fact, over 99% of adults worldwide consume sodium in excess of the WHO daily recommendation.[87] When looking at high-income Western regions, sodium consumption was lowest in Australia/New Zealand, moderate in USA/Canada and highest in Western Europe. Over time, from 1990 to 2010,

global sodium intake has increased modestly which is a result of a diet more heavily concentrated in processed foods. [87] Since the 2010 assessment of global sodium intakes, a 2019 review found that a few countries (including Canada) may have achieved decreases in sodium consumption in connection to recent sodium reduction strategies, however, there is caution in such findings as data collection tools often differ over time. [88]

In 2004, mean daily sodium intake among Canadians was reported to be around 3400 mg/day which was significantly higher than the than target of 2300 mg/day as set out by Health Canada and other regulatory bodies.[8] As of 2015, average sodium intake had declined to 2760 mg/day.[8] While the past decade has seen progress, the majority of Canadians (58%) and 72% of children (age 4 and 13 years) exceed the daily sodium intake limits.[8] High sodium intake in Canada has remained an issue for the past few decades and similar to trans fat, is linked with changes in the food system where foods became more processed, and there was a reliance on ready to eat and convenience products.[89] An overwhelming majority (80%) of sodium intake in Canada comes from pre-packaged food, as opposed to being added during the home cooking process.[8] This heavy consumption of high sodium content processed foods, combined with more Canadians eating outside of the home meant that in the 1990s sodium intake may have peaked with an average low of 2310 mg/day for some groups of females (50-64 years of age) to an average high of 4030 mg/day for males 18 – 24 years of age.[90]

1.4.3. Sodium reduction policies around the world

Similarly to trans fat, many international health organizations and public health groups have called on jurisdictions to address sodium intake as a contributor to chronic disease. The push to reduce sodium intake dates back as far as the 1960s.[91] Governments have recommended individual reductions in sodium intake for decades with some of the first coming from the United States in 1969. [11]

More recently, WHO has recommended reductions in population sodium intake since 2003 and put forth specific guidelines in 2007 around reducing lowering intake to reduce risk for CVD.[7] Between 2011 and 2012, a WHO expert technical group assessed the evidence base related to sodium and chronic disease as a result of member state inquires and requests for evidence synthesis.[7] Their assessment reaffirmed a strong positive link between sodium consumption and hypertension, which had impacts on stroke incidence and mortality, as well as coronary heart disease mortality.[7] As such, WHO made a strong recommendation that adults reduce their sodium to no more than 2000 mg/day and also recommended that children reduce sodium intake.[7] Then in 2013, WHO embedded this recommendation with a goal of a "30% reduction in sodium intake across the population" as 1 of the 9 key global targets necessary "to premature mortality from NCDs by 25% by 2025."[92]

WHO recognizes that most countries consume excess sodium and has suggested a variety of policy measures to reduce consumption including reducing sodium content in manufactured food through reformulation, nutrition information labelling on food products, consumer education and awareness as well as the establishment of food-based dietary guidelines. [7] Most recently, in 2021, WHO released benchmarks for sodium levels in foods across different food categories, a strategy and call for action that builds upon the lessons learned from regional and national initiatives to reduce population sodium consumption.[93] The overarching aim of the recommendations is "to reduce the burden of NCDs attributable to poor nutrition" with a 30% relative reduction in average sodium intake by meeting the dietary sodium intake limit of 2000 mg/day.[93]

While WHO now recommends sodium content benchmarks for foods to reduce intake levels, countries have moved through a variety of policy approaches in the past few decades starting with consumer education, nutrition labeling to inform consumers as well as encourage product reformulation, to voluntary or mandatory sodium reductions in the food supply.[11] In a 2011 review Webster et al identified that out of 32 countries with salt reduction strategies in place only 2 used regulation/legislation.[94] By 2014 the number of countries with sodium reduction strategies increased twofold (75) and the majority of the initiatives were multifaceted with 33 countries using legislative action. [95] In a 2019 review the number of national sodium reduction strategies had grown to 96 with 90% of the of the strategies including multiple measures and 60% including a regulatory/legislative aspect.[91] Between 2014 and 2021 more countries have reported the adoption of each measure with the exception of consumer education.[91] The most commonly featured measures were interventions in settings (from 52 in 2014 to 74 in 2019 – 44 which were mandatory polices and 29 were nutrition guidelines), followed by food reformulation/content reductions (61 to 68 – 19 of which were mandatory and 48 were voluntary), consumer education (71 to 50), front-of-pack food labelling (31 to 48 – 12 of which were mandatory and 41 were voluntary), taxation of food products high in sodium content (3 to 5).[91] While many countries have reported reductions in population sodium intake (including Canada), no country has reached the 30% reduction target.[91] In order to reach the WHO target of 30% reduction, it is recommended that countries adopt the most effective measures which based on systematic reviews and modelling studies are suggested to be mandatory or regulatory/legislative approaches as they produce greater reductions in population sodium intake compared to voluntary, dietary guidelines and consumer education approaches. [91, 96-98]

There is a moderate amount of research looking at the policy process to influence sodium related nutrition policy. Appel et al considered the evidence base and types of evidence related to sodium reduction through the policy process for dietary salt intake in a variety of countries with particular focus on the United States.[11] In most research, there was also a strong focus on the instrumental

role and impact of key stakeholders including civil society, professional health related organizations, scientists, government, and industry in the policy process.[11, 36, 99] Civil society has been shown to be essential in pushing the salt reduction agenda with both government and the food industry in a number of countries such as the US and UK.[11, 94] In most countries, and in particular the US and Finland, epidemiologic surveillance data was key to getting sodium on the political agenda and for tracking progress.[11] Further lessons from the US experience relate to the existence of conflicts of interest with industry funded scientists influencing policy-making.[11] Within government, there are a variety of departments who have interest in sodium reduction policy including health, agriculture and trade.[11] There are also multiple levels of government involved in both local and national decision making on food policy.[11] Additional lessons learned from research on the policy and decision making process around sodium reduction include the crucial role of epidemiologists in evaluating and synthesizing evidence, the need for multi-disciplinary and modelling (cost effectiveness) research, as well as the importance of understanding the topic and the many possible arguments both scientific and philosophical.[11, 100]

1.4.4. Canada's voluntary approach to reduce sodium intake

Similarly to the pursuit of trans fat reductions, in 2006, recognizing that sodium intake in Canada was high and putting people at increased risk for NCDs, a number of concerned of health organizations whose focus was chronic disease prevention, and the Canadian Institutes of Health Research (government funding body) created a joint mandate and funding scheme to appoint the first Canadian Research Chair in Hypertension Prevention and Control to advance research and policy action around sodium reduction.[101]

In October 2007, a coalition of 17 health groups and professional organizations held a press conference calling for federal commitment to address the high levels of sodium intake among the Canadian population.[102] At that time, average daily consumption levels were around 3500 mg of sodium, higher than the upper limit of 2,300 mg and well over the recommended 1200 mg.[103] More specifically, 85 per cent of males, and 60 per cent of females, consumed too much sodium putting them above their daily recommended limit. [102]

By late 2007, the Canadian government established the Sodium Working Group (SWG), a closed panel of representatives from a variety of stakeholders groups such as food industry, health organizations, civil society, health and scientific researchers, health professionals and government with an aim to explore options for reducing sodium intake among Canadians.[102] Minister of Health, Tony Clement called the establishment of the SWG a "major step in helping Canadians improve their health."[77]

However, the development of recommendations and agreement on a strategy for sodium reduction was not without challenges.[77] During the time of discussion and creation, the SWG was criticized for becoming bogged down in a time consuming process, without displaying concrete measures.[77] A member of the SWG privately said the process was "at loggerheads... we're at a total impasse."[77] There was indication that different stakeholder groups had a range of interpretations of the evidence base. Bill Jeffery, of CSPI a member of the SWG stated "There's a diversity of interests and with all of these consultations that I've seen and participated in the past, on this issue and other issues, all of the constituency groups argue their positions on their hind legs. In the end, I expect it is a forum in which facts and arguments will matter and not parochial interest groups."[77]

During the time of the SWG deliberations, the government also consulted with a wider range of stakeholders through a consultation process. The resulting *Stakeholder and Expert Perspectives on Dietary Sodium Reduction in Canada*, summarized the findings and found that the "overall enthusiasm for sodium alternatives is not high"[104] and about half of food industry participants indicated that sodium alternatives were not a feasible solution because "they do not yet offer replacements for the functional roles salt plays."[77, 104] The report illustrated polarized views between stakeholder groups saying "support for mandatory sodium reduction targets is concentrated among health and disease groups as well as health professionals. Industry feels strongly that targets should be voluntary."[77, 104]

In July 2010, over 2 years after its inception, the SWG's report entitled a *Sodium Reduction Strategy For Canada* was released.[9] The opening summary of the report stated that "despite such a wide and varied representation in its membership, the Sodium Working Group was able to reach consensus on the recommendations contained in the report."[9] The SWG had a clear mandate from the government that a sodium reduction strategy must be multi-pronged. The resulting recommendations included 4 pillars: [9]

1. *voluntary reduction of sodium levels in processed food products and foods sold in food services establishments*
2. *education and awareness of consumers, industry, health professionals and other key stakeholders;*
3. *research;*
4. *and monitoring and evaluation which was said to cut across the above three prongs.*[9]

The SWG's report had numerous recommendations, which were summarized into the 6 points below.[9]

1. *The Working Group has established an interim sodium intake goal of a population average of 2,300 mg of sodium per day to be achieved by 2016. The ultimate goal of the Sodium Reduction Strategy is to lower sodium intakes to a population mean whereby as many individuals as possible (greater than 95% of the population) have a daily intake that is below the Tolerable Upper Intake Level (UL).*

2. *The Working Group recommends collaboration across all levels of government, health professional organizations, non-governmental organizations (NGOs), media, industry and academia to implement the specific recommendations in a coordinated, systematic and timely fashion.*

3. *The Working Group recommends that federal, provincial and territorial governments provide adequate funding to support the successful implementation of the Sodium Reduction Strategy.*

4. *The Working Group recommends that all levels of government and stakeholders develop and integrate sodium reduction into their nutrition programs, guidelines and policies.*

5. *The Working Group recommends that the implementation process include outlining the individual steps required for each recommendation, specifying timelines and monitoring the completion of each step.*

6. *The Working Group recommends that all Canadians take personal steps to reduce sodium consumption as part of an overall healthy diet.*[9]

Similar to the target setting, monitoring and public reporting used for trans fat reduction, the SWG called for a structured voluntary approach to be applied to the Canadian food supply for sodium reduction.[9] The "voluntary approach envisaged by the SWG is a structured one involving published sodium reduction targets for foods, defined timelines, a mechanism for public commitment by industry to the targets, a plan for monitoring progress by a body other than the food industry, and a plan for independent evaluation of the success of the program with the option of taking stronger measures as necessary depending on progress."[9] Modeling suggested that with this strategy and the specific measures recommended, the population sodium intake among Canadians would be reduced by approximately 32% within five years.[14]

The government, however, did not adopt the recommendations of the report and by December 2010, Health Canada had disbanded the Sodium Working Group, despite the Working Group believing they would be included in setting targets, monitoring the food supply an on-going surveillance.[105] Instead, the government developed a new committee, the Food Advisory Committee

which was mainly comprised of industry representatives.[102] In June 2012, the government "quietly released sodium reduction guidelines for the food industry" which health stakeholders worried was heavily influenced by the food industry, lacked transparency and would not go far enough to change the food supply and better population health.[102] Recognizing the Canadian current average daily intake of sodium was around 3400 mg and that majority of the sodium intake comes from processed food the government focused on getting consumers to change their dietary habits and saw some merit in encouraging reduction among food manufacturers.[106, 107] According to the document the government's "guidance is based on a gradual and phased reduction approach which will help contribute to bringing average sodium intakes closer to the goal of 2300 mg per day by 2016. The guidance included proposed sodium reduction levels for processed foods as guiding benchmarks."[108] The government planned to assess progress using population self-reported nutrition intake.[108] The *Guidance for the Food Industry on Reducing Sodium in Processed Food* highlighted the government's role in the strategy:

- *To help create conditions that promote the healthier choice as the easier choice for consumers. Sodium reduction is an important part of healthy living and FPT governments have and will continue to work together towards supporting Canadians in their sodium reduction efforts.*
- *To support the reduction of Canadians' average sodium intake to 2300 mg per day by 2016, through an awareness and education campaign to inform Canadians on sodium as part of healthy eating.*
- *To provide guidance to the food industry to safely lower the amount of sodium in processed foods.*
- *To support research related to sodium reduction in the areas of food science and food technology, health and human physiology, and evaluation and monitoring*.[108]

Shortly after, in November 2012 a federal PMB forth by the NDP, Bill C-460, calling for the full implementation of the SWG report was introduced into the HOC (House of Commons).[102] It also included a proposal to mandate nutrition tables with sodium content of food on all menus at chain restaurants.[109] In June 2013, the bill was struck down on second reading in the HOC with a vote of 122 yeas and 147 nays.[109] Food and Consumer Products of Canada (FCPC) a member of the SWG who agreed to the consensus report recommendations expressed appreciation and took credit the bill's defeat in their annual report. It was stated "FCPC launched a pro-active campaign to ensure an NDP

sodium bill, which called for misguided regulations and sodium warning labels on products, was defeated."[110]

While the industry guidance on sodium reduction in foods set out targets for the food industry, there was no frequent government monitoring and public reporting as was the case with the trans fat reduction strategy. From 2012 onwards, there was little discussion about how the GOC was working to reduce sodium intake. Then in 2015, under a new LPC government a platform mandate to address sodium reduction was introduced.[111] The new government assessed progress made under the 2012 voluntary sodium reduction approach. The evaluation of the food industry's efforts found that only 14% of food categories achieved the all target reductions, 38% made some progress, and 48% showed no progress (and some increase) on sodium levels.[8] Without major changes in the food supply, it was not expected that Canadians would have met the 2016 target of 2,300 mg of sodium intake per day on average. [8] The assessment did find reductions in population sodium intake levels, which were down to an average of 2430 mg/day, but still more than half of the population consumed more than recommended healthy limits.[8] It was also suggested by the government that various LPC platform commitments within the new Health Eating Strategy would support sodium reduction efforts.[8] These commitments included a revised food guide that focused on whole unprocessed foods (adopted and implemented in 2019), restrictions on unhealthy food and beverage marketing to children (as of fall 2021, an unfulfilled commitment), and mandatory front of package nutrition labelling (also not fulfilled as of fall 2021).

1.5. Canadian federalism and public health

Canada is a Westminster parliamentary democracy rooted in federalism (dualism) which enables the country to operate in a way that accommodates its vast diversity through reflection on the language, geographic, economic, and cultural differences of the population in each region.[112] Canadian federalism divides powers between the federal and provincial/territorial governments, and the Constitution of 1867 outlines which areas are governed by each level. [112] The federal government generates revenue and disperses funding to the provinces/territories for social programs (education, health care, etc.) which operate under regional jurisdiction. [113] Often funding for these programs have strings attached in the form of federal legislation which set standards and requirements for the provincially/regionally run programs. The legislation for health care, the Canada Health Act, sets five principles (public administration, accessibility, comprehensiveness, portability and, universality) that define the provision of health care service delivery across the country.[114] The Constitution however, indicates there is shared jurisdiction over "health" but in more recent years, judicial review has stated that the federal government has more of an indirect role in health.[115]

Similarly, there is overlap with both levels of government – and even municipal levels - having the purview for public health.[113] More specifically the federal government maintains legislative authority in public health through its power over criminal law as set out in the Constitution which "allows Parliament to pass legislation to prevent the transmission of a 'public evil' that is a danger to public health."[113] Under this mandate, the federal government can make legislation "to control transmission of health risks, including the Food and Drugs Act and the Hazardous Products Act, and in the area of environmental protection."[113] Furthermore, the federal government exerts authority and control over public health through its spending power and mass reach including funding health research, implementing health information and monitoring programs, as well as creating health promotion initiatives and disease prevention/control strategies in cooperation with the provinces and territories.[113, 116] The later categories became even more pronounced with the establishment of the Public Health Agency of Canada (PHAC) in 2004, a federal government department developed in response to a lack of coordinated public health capacity which was publicly exposed after the SARS outbreak in 2001.[116]Federalism as related to public health has created much overlap with federal, provincial/territorial and municipal governments all capable of creating public health policy to protect communities through different pieces of legislation or policy.[113] Under Canadian federalism, the highest level of government legislation always supersedes polices enacted below unless the legislation/regulation of a lower level of government is more restrictive. As such, many public health policy efforts are undertaken at the federal level as national policies are most effective in reaching the entire population. And while the issues of trans fat and sodium reduction policies can also be addressed through municipal and provincial/territorial; levels, the federal government maintains a unique jurisdiction over public health, consumer protection and food safety presenting an ideal opportunity to tackle these public health issues. In addition, given the federal government's role in funding health care services delivery, there should be a key interest in disease prevention to decrease health care costs. As such, this research focuses on the federal government and the policy making processes and considers its special role in health, public protection, and food safety.

1.6. Lobbying to influence food policy

The CDOH not only shape the food environment and the food products available/marketed to consumers, they also consider the "pathways of private sector health strategies and impact, including influencing the political environment, the knowledge environment and preference shaping."[18] The most obvious means to control food policy and ensure that government decision making aligns with commercial interests is through political lobbying of government and donations to political parties.[16, 18] In a more subdue tactic to control food policy, the corporate sector also influences health and our understanding of it through the funding, generation and dissemination of

research/evidence, which may be skewed and biased to suit a commercial agenda.[16, 117] This skewed research can also be used as evidence during political lobbying or in public awareness campaigns.[19] Lastly, the CDOH and the influence of the private sector are reinforced using consumer groups, front groups and/or think tanks, which reiterate corporate interest messages, research findings or skewed evidence, often creating a false narrative within the public discourse thereby impacting the policy making processes.[16, 18] Through these tactics, public policy is shaped to serve corporations instead of public health. [18]

Miller and Harkins report that lobbying is crucially important for food corporations "to resist meaningful progress on public health" nutrition and suggest that lobbying is one of the key tactics employed by industries to "manage various social domains such as the media, science and civil society as well as most obviously policy."[118] The public health literature asserts that lobbying is a means of exerting power and control in a society. Political science scholars define lobbying as an "act of individuals/groups, with varying and specific interest, attempting to influence decisions at the political level."[119] and suggests that lobbying can be achieved by direct communications with governmental officials, offering information such as presentations and reports, in person or through telephone and email conversations etc.[119] Lobbying efforts to influence food policy and decision making have been established in the literature.[16, 22, 120-125] Some of the research in this area has leveraged food industry documents which have been leaked or uncovered while other research relies solely on publicly available information. In some instances, strategic lobby campaigns, financial spending, commissioning of research and details of meeting with government are depicted and highlight how various groups or organizations attempt to influence government policy development.[16] It is less common however, for direct communications with government officials to be tracked and analysed because in most countries, lobbying activity happens behind closed doors without regulation or public transparency.[119] That is not the case for Canada, which presents an opportunity to assess lobbying efforts to influence food policy.

1.6.1. Lobbying in Canada

Canada introduced the Lobby Act in 1988 and has since been amended in 1995, 2003, 2008 and 2010 to include additional policies to further regulate lobbying of the federal government.[119, 126] The regulation of lobbyists intends to ensure that "political systems have established 'rules' which lobby groups must follow when trying to influence government officials."[119] Two kinds of formal lobbyists exist – consultant and in-house lobbyists.[119, 127] Consultant lobbyists receive compensation for their efforts to communicate on behalf of a third party with an aim to influence government legislation, regulation and/or spending and must register as per the mandate of the Lobby Act.[127, 128] In-house

lobbyists are employed by an organization and serve as its representative in communications with the government while seeking to influence government action.[127] The Lobby Act requires all organizations to register and report on any employees who "as a significant part of their duties (20%) communicate with the government."[127] While all members of society and non-state actors may have an interest or opinion about policy matters, not all meetings with elected officials need to be registered. Members of the public can request and meet with their elected MP or the government without the need to classify and register it as a lobby activity.[129]

The Office of the Commissioner of Lobbying of Canada under the authority of the Lobbying Act (2008) aims "to ensure transparency and accountability in the lobbying of public office holders."[129] The commissioner upholds the Registry of Lobbyists, and regulations by which lobbyist must share information with the Registry.[129] All federal lobbyist in Canada must be registered with the Commissioner and are required to disclose communication with the government.[127, 130] The Registry of Lobbyists mandates that lobbyists report all lobbyist-initiated and pre-arranged communications with a designated public office holder (DPOH).[129] In 2008 the Lobby Act defined DPOH as "ministers, ministerial staff, deputy ministers and chief executives of departments and agencies, officials in departments and agencies at the rank of associate deputy minister and assistant deputy minister, as well as those occupying positions of comparable rank".[129] In 2010, that list was expanded to include "Members of Parliament, Members of the Senate and any staff working in the offices of the Leader of the Opposition in the House of Commons or in the Senate."[127, 129]

The Registry contains information about lobbying activity and is available to the public. The most recent regulations require that specific information be provided by lobbyists regarding communication with government officials.[129] These details include date of communication/meeting, subject matter and names of DPOH government officials.[129] However, the information and level of DPOH in which lobbyist are required to disclose in the registry has changed over time resulting in some inconsistencies between older lobby registry details and more recent entries. Thurlow has indicated that most lobbyist and companies which participate in Canadian lobbying activity are unaware of the DPOH requirements, and as such, registrants tend to over-share information and government communications, even if the communication was not with a DPOH such as an MP or senator before 2010.[127]

Only a handful of countries other than Canada have legislation to regulate lobbying activity.[119] In assessing and comparing the lobby regulation in these countries, research has attempted to measure the stringency of lobbying regulation as a means to foster more robust regulation and encourage other jurisdictions to adopt regulation. The Centre for Public Integrity in the US created a

framework by which to assess the effectiveness of lobby regulation across jurisdictions.[119] Chari and colleagues used this system to rank regulations and evaluated Canada's 2008 regulation as 50/100.[119] This was classified as a moderate score with 60+ being scored as a "pass". Weaknesses of the Canadian lobbyist regulation include lack of mandatory individual/employer spending disclosure and requirements to register only a portion of government official meetings (DPOH).[119] In 2010 the DPOH list was expanded and later regulation was enacted which prohibited lobbyist from buying DPOH or government officials any gifts over the cost of $5 to increase transparency and limit bribery in policy making.[129] These amendments further strengthened Canada's lobbyist regulation which could in theory increase Canada's score and ranking into a passing grade and make the lobby registry a useful avenue for data abstraction and analysis.

1.7. Gaps in knowledge explored in this DrPH

Much remains unclear regarding Canada's trans fat and sodium reduction strategies between 2004 and 2014. Questions remain about why the government choose a voluntary approach for trans fat reduction when the TFTF recommendations showed consensus around regulatory measures. Also, it is unclear why the government developed a voluntary yet structured monitoring program with what seemed to be empty threats of regulation. Lastly, there are gaps in knowledge about what caused the government to block later attempts to regulate trans fat despite the recommendations of the TFTF in 2006 and Health Canada officials in 2009, as well as opposition in the HOC which highlighted the persistent high levels of trans fat in the Canadian marketplace.

Similar questions exist around the sodium reduction policy process. It is unclear why the government did not adopt the recommendations as set out by the SWG to track and monitor, and why the SWGgroup was disbanded at a time that target setting, monitoring and reporting was thought to be pivotal. Also, unknown is what influences or motivations caused the government to strike down further PMB attempts to implement the recommendations of the SWG. The SWG report indicated consensus agreement across all stakeholders groups involved in the policy development process, which raises questions about why the government stepped back from a public health issue and solution that seemed to have wide approval.

Additional knowledge gaps remain regarding the role of stakeholders in the policy process and how their perspectives and influence shaped the adoption of voluntary agreements for sodium and trans fat reduction. The level of engagement and coalition building amongst and between stakeholders related to trans fat and sodium has not been explored in the literature. Questions remain about how groups worked together or in opposition and what facilitators or barriers they faced during the policy process.

There is also a lack of research exploring how the Canadian media – a key stakeholder who influences the public and government, as well as a avenue for stakeholders to share their policy beliefs and perspectives – may have influenced the policy process. It is unclear how these nutrition issues were covered in the media and whether news coverage can be considered a factor shaping the policy adoption. Furthermore, there are gaps in the existing literature around how stakeholders interject their perspectives into public policy issues within the news cycles.

These gaps in understanding the government decision making process as well as stakeholder dynamics and media influence as components of the policy processes will be explored and assessed to gain a better understanding of the public health nutrition policy development and adoption process. These gaps in knowledge about the policy and decision-making processes along with investigations on stakeholder beliefs, actions and involvement in the policy system are explored in this thesis.

1.8. Thesis overview

1.8.1. Aims and objectives

This research analyses the policy-making process around trans fat and sodium reduction strategies in Canada as related to stakeholder involvement and influence on government decision making. The study captures and analyses how stakeholder interests/beliefs, dynamics and contextual factors have shaped the processes which resulted in voluntary agreements on both nutrition issues.

The study objectives are to:

1. describe, clarify and understand the influence of stakeholders on the processes leading to voluntary measures for trans fat and sodium reduction in Canada;
2. apply public health frameworks and a policy process theory to explain and analyze the dominant contextual factors within the policy ecosystem that affected government decision making around these nutrition policy processes; and
3. provide public health nutrition practitioners and advocates with a better understanding of the complexities in nutrition policy making in Canada.

1.8.2. Scope of the thesis

This thesis explores the public health policy-making process in Canada through the lens of two nutrition issues - trans fat and sodium reduction during the mid 2000's to mid 2010s. It investigates a key decade in policy making whereby the government did not adopt public health stakeholder

recommendations and instead implemented voluntary agreements with the food industry which ultimately did not meet the desired objectives to improve population health.

The overarching premise of the thesis is that the policy system and government decision making are complex processes and influenced by a variety of factors including stakeholders and their beliefs, interests, and actions. Through engaging in a deeper understanding and assessment of how various stakeholders influenced government decision making on trans fat and sodium reduction, it better positions public health professionals to advance policy issues in the future. The study seeks to learn from the actions of various stakeholder groups and their influence on nutrition policy-making and provide insights about how to improve the nutrition policy making process in Canada. The study does not make specific recommendations about what policy measures will solve the nutrition issues, but instead aims to advance the knowledge base around public health nutrition advocacy. While the study investigates the nutrition experience in Canada, lessons can be applied to public health policy in other similar jurisdictions and across public health issues where competing stakeholder interests make the policy process complicated.

1.8.3. Structure of the thesis

This thesis is submitted for the Doctorate of Public Health (DrPH) and seeks to satisfies the main requisite of an original contribution to knowledge. The LSHTM DrPH thesis expectation length is approximately half that of a traditional PhD and as such, the scope of a DrPH thesis is more limited and analysis breadth may be more focused. This thesis utilizes the research paper style format, where three manuscripts are prepared for publication in peer reviewed journals and have been woven into the thesis document, with the aim of analysing the policy processes on trans-fat and sodium reduction in Canada.

Section 2 grounds the research study in an epistemological perspective and describes the theories and concepts which guide and research design, collection and analysis. The Advocacy Coalition Framework (ACF) serves as the overarching theoretical approach, which enabled assessment of how stakeholder groups formed and converged based on interests, beliefs and actions within the trans fat and sodium reduction policy processes. Additional conceptual lenses and frameworks were supplemented to the ACF to expand on the use of evidence by stakeholders and framing of the public health issue within media coverage.

Section 3 explains the three complementary methods employed (1. analysis of stakeholder lobbying activities with government, 2. stakeholder interviews and document review, 3. media analysis) to answer the research questions and address the project aims. Section 4 - 6 presents the results from each method in the form of 3 research papers. The first study used mixed methods to track, measure

and analyze lobbying communications and possible influence on the government during the trans fat and sodium reduction processes (see Results Section 4). The second study employed key informant interviews and documentary review to assess how various stakeholders were involved in and perceived the policy making process. Thematic analysis of the interviews depicted that the discordance of evidence was a key factor in stakeholder advocacy and government decision making (see Results Section 5). Lastly, a qualitative media analysis assessed how the issues were portrayed in the public domain, and how the media's framing of trans fat and sodium could have influenced government decision making (see Results Section 6).

In section 7 the findings from these studies were synthesised and interpreted using the ACF as an overarching policy process theory and combined with conceptual frameworks from public health to explain what factors influenced the trans-fat and sodium reduction policy processes with lessons and recommendations developed for public health practitioners and advocates.

2. Theoretical grounding of the research

2.1 Epistemological perspective

Epistemology is the perspective held by the researcher regarding what qualifies as acceptable knowledge in research.[131] The thesis took an interpretivist epistemological perspective believing that knowledge is constructed as we interpret experiences.[131] This further lends itself to a constructivist point of view suggesting that knowledge is socially formed by those involved in the research process.[131] Constructivism explains that the values of the investigator cannot be independent of the research process, and therefore they influence and shape the data collection and analysis.[132] Having worked in public health policy as an analyst and advocate, I recognize that I have engrained values and beliefs which in turn will shape the way I approach this research study and interpret new information.

It is believed researchers within this paradigm should aim to understand the complex world from the point of view of those with lived experience.[132] In order to gain new insight and further expand the knowledge base in this research area, it is necessary that I explore the unique understandings of the issue through the people (various stakeholders) who have experienced it. A constructivist point of view lends itself to qualitative methods such as stakeholder interviews, observations, and document reviews where a composition of reality can be achieved through interaction between and among the researcher and participants.[132]

In viewing the issue from a constructivist approach, I assume that knowledge and truth are made rather than discovered and instead of knowledge being objective it is through 'constructs' or 'frameworks' that we make sense of knowledge and the experience being explored.[131] I therefore recognize that knowledge and reality within a constructivist point of view are subjective, and as such the findings of this research study will not be as generalizable as those from a positivist epistemology. That said, I believe there to be great value in this research approach as a means to plot and assess the details of the trans fat and sodium reduction policy situations, explore the subjective viewpoints of those involved in the policy processes as well as their motivating actions. Constructivism is well suited to help “understand” an issue, and this study aims to increase one’s “understanding” more so than “explain” the situation and policy outcomes.[131]

2.2 Political science and policy making theories

Political science offers policy process theories which serve to increase the understanding of why policy decisions are made and also provide insight into influencing future policies.[21, 39] Applying policy process theories can be done retrospectively to facilitate a better interpretation of how and

why policy making happens, while also supporting researchers and advocates to gain a deeper comprehension of the complexities and dynamics within the policy making process.[21, 39] Furthermore these theories can enable the identification and mapping of key stakeholders, threats and opportunities in the policy system.[133] [134, 135]

Many theoretical frameworks have been developed to explain and/or predict the policy process including Walt & Gilson's Health Policy Triangle,[134] the Stages Heuristic model,[136] Kingdon's streams model,[137] Hall model,[138] and Sabatier's Advocacy Coalition Framework.[21, 38] These frameworks are useful for conceptually understanding how policy cycles work, the elements and interactions required for an issue to make it to the policy agenda, how power dynamics play out and how policy decisions are made.[21] They differ in their explanation of the factors and dynamics that influence agenda setting and policy decisions.[37] For example the health policy triangle has been criticized for its simplicity and inability to explain or predict behaviour, but has formed the basis of other conceptual models including one designed to analyse the trans fat process in Costa Rica.[21] [15] While the stages model is more complex than the policy triangle, it assumes a linear process for policy making which has been found to be impractical and overly basic.[37] Kingdon's streams models is based on the premise that the policy process is categorized into three streams: problem, politics and policy, and policies are adopted when aspects of the three streams come together at a common point known as a policy window.[137] The Advocacy Coalition Framework emphasizes the role of interest groups within a policy subsystem including those with both common and opposing policy beliefs, uses of evidence and the conflict that emerges as a result.[38] ACF has been praised for providing a complex conceptual map of the policy process.[21, 39, 139]

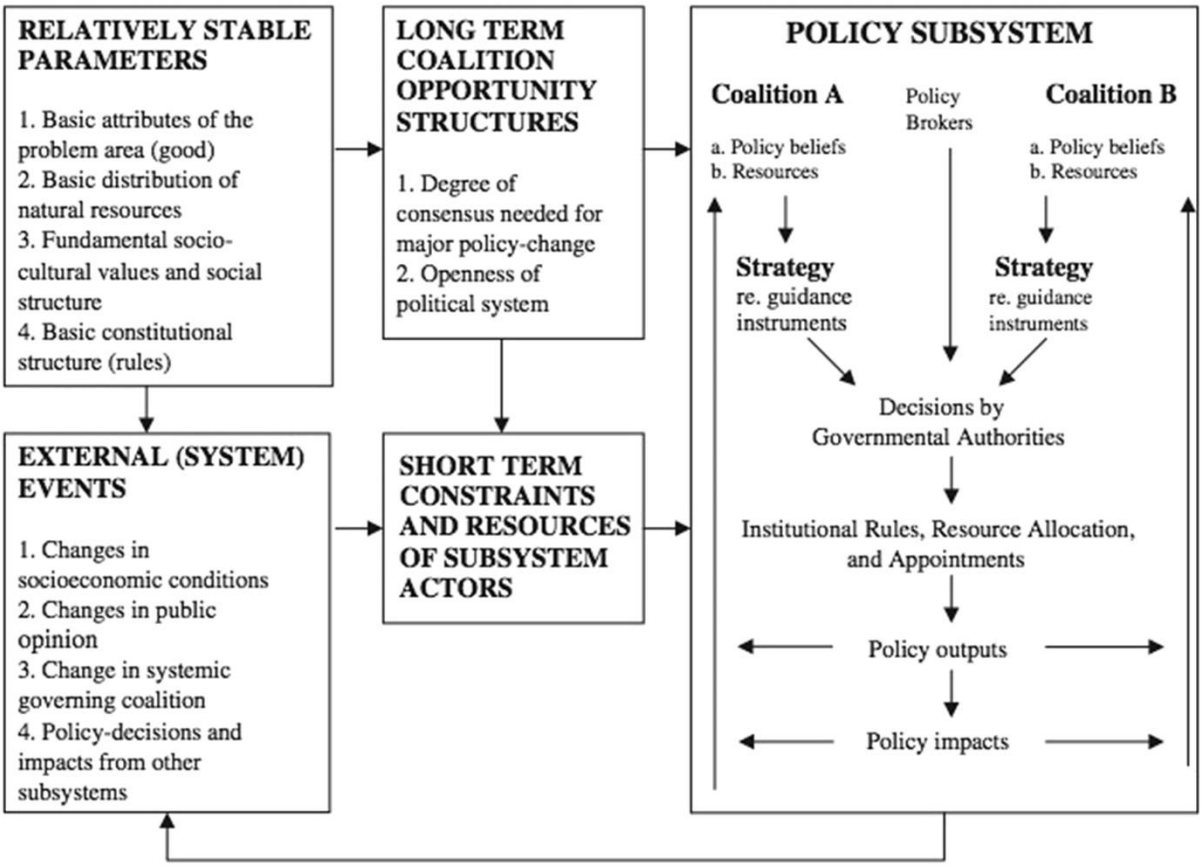
Several of the abovementioned models have been applied to the Canadian setting. ACF is one of the most commonly used for the Canadian setting and has also been applied to a variety of policy areas including but not limited to health care, tobacco control, climate change, education, social policy, natural resources and energy sectors.[140-143] The ACF has also often been used in research investigating the policy making process in nutrition within developed countries,[144-146] and as such, will be used as the foundational framework for illustrating and explaining the Canadian trans fat and sodium case studies.

2.3 Advocacy Coalition Framework

The Advocacy Coalition Framework (ACF) developed by Sabatier and Jenkins in 1998 was designed to describe and make sense of complex public policy processes which involve multiple actors, levels of government and outside factors.[147] In using the ACF, the policy process and outcomes can be mapped and explained "despite high levels of uncertainty and ambiguity."[148] Central to the ACF is

the focus on competition between various interests and stakeholders (who may work together in coalitions) as they advocate for policy problems and solutions.[147] The framework, illustrated in Figure 1, recognizes that policy decisions can be influenced by the competing interests between actors and/or by the technical and specialized process within government.[148]

Figure 1. Advocacy Coalition Framework



Source: Sabatier and Wieble, 2007[20]

The ACF has five main premises which explain the policy process.

1. *The process must address the role of technical information which relates to evidence. Technical information is often criticized and politicised by each coalition and the dominant coalition can change a long-held evidence base to influence policy.*[147]

2. *The process of policy change is long and requires a time perspective of at least 10 years. Policy change including the relationships built, agenda setting, policy analysis, decision and implementation usually takes over a 'decade or more'.*

3. *The unit of analysis for understanding a policy change is a policy subsystem which is considered an issue-specific network.*

4. *Policy subsystems include various stakeholders or actors including media, researchers, policy analysts, government, industry and NGOs as well as policy brokers and sovereigns who act as mediators between coalitions.*

5. *Public policy can stem from belief systems and those groups or individuals who engage in politics and policy making aim to translate their beliefs into action.[147] Beliefs can be categorized as 'core' which are rooted, fundamental and unlikely to change; 'policy core' which are more specific and associated with views on the balance between government and market but still unlikely to change; and 'secondary aspects' as related to the implementation of policy. The later are the most likely to change overtime as people learn about the effects of policy.[148]*

An advocacy coalition is described as "people from a variety of positions (elected and agency officials, interest group leaders, researchers) who share a particular belief system and who show a non-trivial degree of coordinated activity."[148] Coalitions battle against each other, aiming to control policymaking in their particular subsystems by influencing government (elected officials and bureaucrats) and concurrently learn from surrounding policy implementation experiences.[147] Policy learning occurs in a coalition through the unique viewpoint of their associated beliefs which leads to different interpretations and utilizations of evidence and events as compared to another coalition within the policy subsystem.[148]

Beyond the policy subsystem is the wider system in which various external factors provide each coalition with different constraints and opportunities to influence policy.[38] Relatively stable factors include social values and the broad government and constitutional structure.[148] There are also long term coalition opportunities which relate to the political system.[147] External factors such as socio-economic shifts, elections, or policy decisions in other jurisdictions also impact the policy subsystem and how coalitions work.[148] The ACF also accounts for internal or external shocks which can create instability in the subsystem and lay the ground for rapid and major policy change.[148] An internal shock may be the revision of coalition beliefs based on past failed efforts whereas an external shock is an out of subsystem event (change in government, environmental crisis, natural disaster, major funding opportunity, etc.) which is exploited by a coalition and gives them an upper hand compared to another coalition. [147, 148]

The ACF was well suited to guide this research as it emphasizes the opposing forces, competing for influence on policy making which is a theme that emerged in both existing international literature investigating the policy process for trans fat and sodium. [38] The ACF allowed the researcher to assess the underlying beliefs and resources of each coalition. Furthermore, the ACF addresses the role of

evidence, information synthesis and consensus which have been demonstrated as factors influencing policy change in trans fat and sodium reduction cases in other jurisdictions.[11] The ACF acknowledges the use and criticism of science which were found to be common factors within the sodium reduction cases in and outside Canada.[85] In fact, the use of evidence by stakeholders as a barrier and facilitator to the trans fat and sodium reduction policy processes in Canada was the most dominant theme that emerged from the key informant interviews.

2.4 Evidence to Policy Development Conceptual Framework: Expanding beyond the ACF

The ACF is well suited to guide this research as it emphasizes the importance of technical information and evidence, and its use and interpretation by stakeholders (policy actors), which is relevant throughout health policy processes. Evidence is a staple of ACF and embodies the first main premises of the framework stating that the policy process "must address the role of technical information which relates to evidence. Technical information is often criticized and politicised by each coalition and the dominant coalition can change a long-held evidence base to influence policy."[147]

According to the ACF, policy learning (using evidence to solve policy problems) and influence on government occurs in a coalition through the unique lens of their associated beliefs which leads to different interpretations and utilization of evidence and events as compared to another coalition within the policy subsystem.[148] Furthermore, political ideology shapes the belief system and the interpretation of evidence.[148] Based on beliefs and interest, various groups interpret and respond to evidence and data differently.[20] This also impacts the ways in which actors communicate evidence and information outside of their coalition to the rest of the policy subsystem.[20]

Although the ACF provides a strong rationale and conceptual guide for making sense of how evidence is used within the policy subsystem, there are novel frameworks that focus specifically on evidence within the public health policy making process. Such frameworks have the advantage of being attuned to the current public health context and were developed to assess how evidence shapes specific political systems. As such, this thesis also applied a framework developed to account for the role of evidence in the U.S. public health policy making process. While the U.S. political system is different in than the Canadian (federal constitutional democratic republic vs constitutional monarchy/parliamentary democracy system), the literature has shown some similarities in terms of the CDOH, food politics and industry influence on nutrition policy making.[16, 22] The aim of this additional framework is to "facilitate understanding of an evidence-based decision-making model in

the context of public health interventions and how knowledge of evidence synthesis (or lack of this knowledge) may influence decision-making."[40]

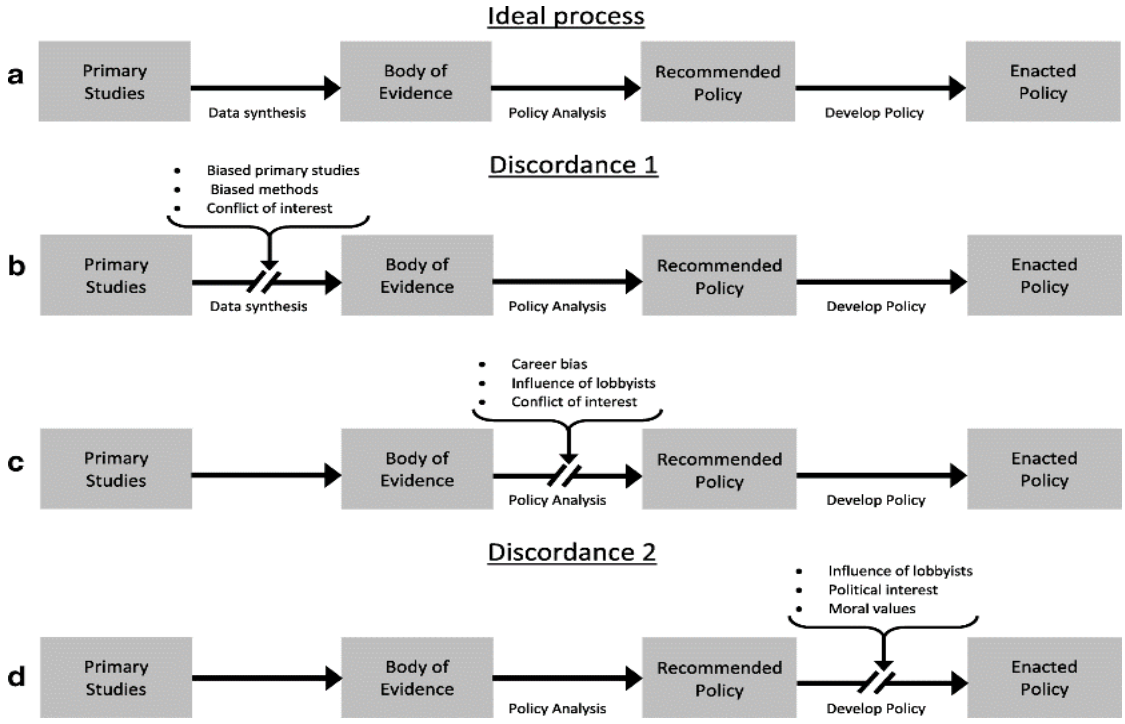
The conceptual framework, developed by Malekinejad et al is based off the 'Policy Process' framework developed by the Centres for Disease Control and Prevention and other evidence to policy literature.[40] The resulting framework describes that discordances (disconnects or variances) in evidence can occur because of both subjective and objective factors during the public health policy making process.[40] The authors categorize 3 different types of discordance "that are unrelated to the value of the evidence itself, and can inhibit the use of research evidence" in health policy making.[40] Figure 2. below illustrates the ideal role of evidence in the policy making process, and the various types of discordances that can hinder evidence-based policy making in public health policy. In Discordance 1b), a stakeholder (often public health) makes an intervention recommendation, but the "intervention lacks high quality, rigorously synthesised research evidence" to support its adoption.[40] This can be the result of a need to been seen influencing policy change regardless of whether the policy action recommended is deemed effective based on the evidence.[40] Discordance 1c interferes with the policy making process by compromising the policy analysis.[40] In this case stakeholders "may selectively focus on favourable outcomes of certain interventions or even 'spin' review evidence to promote an certain agenda" which could be the result of conflicts of interest.[40].

Discordance 2 (as depicted in Figure 2) happens in two scenarios both influenced through "social, cultural and other external considerations (e.g. the influence of special interests) that compete on equal (or even stronger) terms with research evidence."[40] In the first scenario, public health organizations recommend a policy solution that is backed with strong evidence but the intervention is rejected by policy makers.[40] The issue might be dropped, or the chosen policy solution might be something partial or include delayed implementation.[40] In the second scenario, there might be inconclusive evidence for the policy measure but the government proceeds with approval and adoption because of pressure felt by constituents or special interest groups.[40] There could be pressure to fix a problem, and the politician might hurry to be seen as solving it for potential political gains, rather than critically assessing various policy options.[40]

Malekinejad et al.'s framework was developed for the US federal public policy system and has been cited in research literature around health policy development and knowledge translations across a variety of settings. Having been published less than 3 years ago, it has not yet been applied to other public health case studies. However, the researcher has deemed it appropriate to use for assessing the trans fat and sodium reduction policy processes in Canada because of the similarities in the U.S. policy subsystem as well as its ease of supplementation with the established ACF. This conceptual

framework will be applied broadly to assess discordances by all stakeholders (policy actors) at all stages of the evidence to policy development process.

Figure 2. Evidence to policy development framework



Source: Malekinejad, M., Horvath, H., Snyder, H. *et al* (2018)[40]

2.5 Media framing categorization: bringing media coverage frames into the ACF

While the 4th premise of the ACF purports that policy subsystems are made up of various stakeholders/policy actors, the theory does not provide a detailed account of or construct how the media shapes the policy subsystem and the resulting government policy adoption. A wealth of literature shows that what and how the media reports on health issues pivotally shapes the public perceptions of public health debates.[25, 27]

In relation to the heath policy making process, the media is thought to contribute to the process at all stages of the policy cycle (agenda setting, policy debates and analysis and policy development/implementation) and as such, within the public health community media advocacy is considered a key strategy to inform and shape policy.[25] According to Wallack, media advocacy is defined as "the strategic use of mass media to advance social and public policy initiatives."[149] The term is further explained as media strategies that focus on earned news media over paid media or

advertising, and aim to improve health of populations by addressing the social determinants of health using public policy and systems change rather than targeting individual behaviour change.[26]

As one the earliest academics to publish on the role of media as an advocacy tool within public health, Wallack identified that media advocacy has three key stages; "1) Setting the agenda—framing for access 2) Shaping the debate—framing for content and 3) Advancing the policy."[150] In the first stage, setting the agenda, stakeholders vie to capture the attention of the media which in turn can give an issue and stakeholder group a sense of legitimacy.[26, 150] The media informs government agenda setting in the policy making cycle as it showcases what issues are newsworthy and considered of interest to the public at a particular point in time.[26, 30] There is a positive relationship between media coverage of an issue and public concern related to that issue.[25, 27, 30]

Once the policy issue is on the agenda, stage 2 is focused on the policy debate where stakeholders aim to frame "the issue a certain way in order to reflect the causes of the problem, the authority which is responsible for fixing the problem, and the logical policy solution."[151] Some of the earliest research on framing was conducted by Goffman who described that people use framing to "organize and interpret new information."[152] This conceptual theory was expanded by Entman (1993) who proposed that framing works to make certain information more salient for an audience and to influence their perceived reality.[153, 154] In doing so, framing is able to "promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendations."[154] As such, the frameingemployed by the media in health news stories have been found to influence the public's perceptions about policy problems and in turn, the attribution of responsibility for solving the problem.[25, 155, 156] The public's attribution of responsibility can then influences how policy makers address a public heath issue.[25, 157] During the policy debate stage, stakeholders vie for media attention and assert to frame the policy issue in a way that satisfies their goals.[26, 150] In this stage, public health advocates must overcome the idea that health issues are individual problems.[149] Likewise, all stakeholders aim to frame in a way that will gain public sympathy and traction in order to build support for their preferred policy solution.[26, 150]

Lastly, in stage 3, advancing the policy, the messages in media are used to build support not only for the public health issue, but for the particular policy solution that each stakeholder wants adopted by government.[149] The media has the power to shape public opinion which can raise pressure on policymakers and increase political will for a certain policy solution.[25, 26] Media advocacy is a useful tactic in public health practice "that can assist in increasing public awareness and mobilizing decision-makers for policy change."[150] Stakeholders and media can provide details about policy

goals, policy feasibility, policy effectiveness and broader support which in turn strengthen the case for support.[149]

In an effort to leverage the expansive literature on media and the public health policy process, this thesis supplements the ACF with specific conceptual models and frameworks that could help with data analysis. Rowbotham et al. conducted a thorough narrative synthesis media framing using media articles about public health policies to prevent chronic disease.[158] The authors looked at issues such as alcohol, tobacco an nutrition, and divided the results into arguments for and opposed to policy.[158] Their synthesis identified five categories offraming: health, societal, economic, practical and ideological along with specific arguments that existed for each public health issue.[158] The framing and associated arguments for nutrition are listed below in Table 1.

Table 1. Categorical framing and arguments for nutrition policies in media articles

Framing	**Nutrition arguments**
Health - support of policy	Link between dietary intake and health
	Policy will have a positive impact on health
Health - opposed to policy	Downplays the risks to health
	Downplays the likely health benefits of policy
Societal - support of policy	Policy will protect vulnerable groups
Societal - opposed to policy	Policy will harm low-income groups
Economic - support of policy	Policy will have a positive economic impact
	Policy will not harm businesses or the economy
Economic - opposed to policy	Policy will harm businesses or the economy
Practical - support of policy	Policy is likely to be effective
	Public or political support
Practical - opposed to policy	Policy is not feasible
	Policy is unlikely to be effective
	Policy is not the appropriate solution
	Policy is unnecessary
	Lack of public support
Cultural or Ideological - support of policy	Policy is needed to combat industry tactics
	Responsibility of government to support people
	Government interference

Framing	Nutrition arguments
Cultural or Ideological - opposed to policy	Individual responsibility
	Threat to individual rights
	Policy as a slippery slope
	Questionable government motivation

Source: Rowbotham et al[158]

Media framing analysis using the categorical frames developed by Rowbotham[158] was used in this study to look at how the trans fat and sodium issues were portrayed in media coverage and the narratives or arguments used to describe the issue and related policy solution. The authors of the categorial framing suggest that the application of the framework will "allow public health advocates to draw on arguments that have previously been used in other policy areas, and to anticipate the arguments they may encounter from policy opponents."[158] Furthermore, the analysis and findings from the implementation of the Rowbotham et al categories can provide insight into how each media outlet can be leveraged to advance public health policy and the ways in which framing can support or hinder the advancement of nutrition policy.

2.6 Integration of theoretical frameworks

The ACF serves as the overarching well established theory, guiding the study design, methods and analysis. However, the supplementation of new and public health policy specific concepts and categorical frameworks serve to strengthen the application of the ACF in assessing and understanding the policy making process for trans fat and sodium reduction in Canada. Drawing these frameworks together through a layered approach enables specific investigation into 1. evidence as a contextual factor strategically utilized by stakeholders to both facilitate and hinder the public health policy process and 2. the media as both a stakeholder in itself, and an advocacy tactic/opportunity for other stakeholders to use within the policy subsystem as they impart their values, beliefs and policy solutions on the public and government.

3. Research methods

This research comprises three discrete but related studies using complementary methods to achieve the overarching goal of a better understanding of the policy-making process around trans fat and sodium reduction strategies in Canada as related to stakeholder involvement and influence on government decision making. This thesis aims to capture and analyze how stakeholder interests/beliefs, dynamics and evidence use shaped the processes. In order to do this, a mixed methods lobby analysis quantified the reach and influence of various stakeholder groups based on

their interactions with the government. This was supplemented with a qualitative content analysis which assessed the topic areas covered in stakeholder lobby meetings. Next, stakeholder interviews and documentary review assessed the dominant contextual factor of evidence use which worked to both drive and deter policy adoption. Lastly, media framing analysis tracked news coverage of the two nutrition policy issues and considered the media as both a stakeholder influencing the government and a strategic tactic for other stakeholders to leverage in their aims to exert influence.

With a deeper understanding of the influence and action of stakeholders within the trans fat and sodium reduction subsystems, the complexities of public health nutrition policy making can become clearer, enabling more effective pursuits of policy advancement in the future. Data collected using these three complementary methods will be triangulated to facilitate the achievement of the research aims by helping to answer how the policy processes evolved and what role various stakeholders played in the processes. Collectively, these triangulated methods enable the researcher to illustrate the policy process for trans fat and sodium using the ACF as a foundational guide.

The LSHTM Research Ethics Committee approved this research in December 2015 (see Appendix 1).

3.1 Research study design

Case studies of the sodium and trans fat reduction policy process from 2004 – 2014 were conducted to investigate the process by which influencing the decision making in nutrition policy occurred in Canada. These two case studies are similar in that they both provide examples of governments using voluntary approaches to address public health nutrition policy and illustrate situations where the government did not follow the recommendations of its own expert appointed committees. The case study approach is described as “an intensive study of a single case for the purpose of understanding larger class of cases” and is considered appropriate for exploring dynamic relationships, in-depth analysis and complex issues.[159] As such the case study approach was useful in gaining a deeper understanding of the factors, actors and power dynamics influencing Canadian nutrition policy. Where appropriate, analysis between cases and by each stakeholder group were undertaken to compare and contrast contextual factors and stakeholder actions with a focus on the role of evidence within each of the policy making processes. In some instances, due to the overlapping timelines of trans fat and sodium reduction policy making it was not possible to disentangle the issues from one another due to constraints and limitations in data collection. In these situations, the two issues were assessed collectively through a broader nutrition lens.

This overall research project is based on a pragmatic research paradigm, applying both qualitative and quantitative methods as deemed appropriate to achieve the research aims. Mixed methods

approaches are best utilized to tailor study design methods to the aims and objectives of the research.[160] As such, a qualitative methodology is useful for understanding aspects of social life, an event or phenomenon, and its methods which generate words, describe and explain questions like what, why and how.[160] At the end of the thesis, the findings from each research study and both the qualitative and quantitative methods will be integrated using the theoretical frameworks to illustrate the policy processes for trans fat and sodium reduction. Combining the studies and results will allow for a deeper understanding of how stakeholders influenced the policy processes which led to voluntary agreements. It will also contribute to an expanded application of public heath and political science theories. Lastly, it will enable the development of recommendations for policy and practice in this field.

3.2Analysis of stakeholder lobbying activities with government

In the analysis of stakeholder lobbying activities with government qualitative methods serve to analyse and assess government communications and meetings with lobbyists. It assessed stakeholder reach and interests, lobbyist resource allocation, and influence dynamics between policy actors and coalitions in shaping the trans fat and sodium reduction policy processes. A quantitative descriptive assessment and qualitative content analysis was conducted of lobbying activities to assess the communications with government officials to gain a better understanding of the efforts and tactics of various stakeholders and groups. The quantitative review of the Registry of Lobbyists assessed the number of meetings and officials lobbied, level of government officials lobbied, and date of meetings in relation to key milestones in the policy development processes (based on parliamentary proceedings and government announcements). Qualitative content analysis looked at the subject matter/framing of the communications with government officials, aiming to understand the issues and policy beliefs that were imparted during lobby communications. These details can provide a broad depiction of who, how and when various groups may have influenced the government's decision making.

3.2.1 Data collection

A search of trans fat and sodium reduction related lobbying activity was conducted on the Registry of Lobbyists to account for stakeholder meetings with the federal government. The Registry of Lobbyists allows the public to search and view reports and statistics related to stakeholder lobbying activities.[129] Stakeholder lobbyists (in house or external) are legally required to track and register all communications with government officials using monthly communication reports.[129] Stakeholder lobbyists are defined as those paid by an employer or client, who communicate with a federal public office holder related to the development, introduction, amendment, or defeat of legislation or

regulation.[129] This included meetings with elected officials, parliamentarians, civil servants and bureaucrats. Extraction and analysis of lobbyist communications with the government was limited to the time period of January 1, 2004 - May 10, 2013. This time represents the first milestone in the policy process, when an opposition motion passed in parliament calling for federal action on trans fat thus starting the policy negotiations on trans fat and ends shortly after the May 8, 2013 defeat of the sodium reduction bill (C-460) in the House of Commons. The data retrieval for sodium and trans fat cases were done concurrently because of the overlapping stakeholders and similarities in search terms. There is also the potential that stakeholders met with government officials to discuss both sodium and trans fat issues at the same time given the overlap in policy development timelines. The regulatory outcomes of each issue could impact similar food industries, thus warranting assessment of both topics in unison. Furthermore, the health outcomes associated with sodium and trans fat intake overlap (increased risk for heart disease and stroke) which could interest the same stakeholders.

Subject matter and key word search

The first data retrieval was based on keyword and subject matter. This gave a broad overview of lobbying activity that related to trans fat, sodium, nutrition and health. Search terms were as follows: nutrition OR; salt; OR sodium; OR trans fat*; OR transfat*; OR food* AND Health

3.2.2 Stakeholder search by Trans Fat Task Force and Sodium Working Group

The second lobby registry data retrieval pulled lobby registry entries from stakeholder organizations who were part of the Trans Fat Task Force (TFTF), and Sodium Work Group (SWG). Lobbying entries from each member of the Trans Fat Task Force and Sodium Work Group between the dates January 1, 2004 and May 10, 2013 were retrieved. Only results with relevant subject matter were included (Table 2). Inclusion criteria were those with a subject matter of health, food safety, agriculture, food regulations, food labelling, food processing competitiveness, Nutrition Facts Education Initiative, sodium reduction, sodium, food regulatory system, food fortification regulations, education, consumer issues and Industry. Duplicate entries which appeared in both the first (subject matter) and second (Trans Fat Task Force members, Sodium Work Group members) search were removed. Communications entries deemed irrelevant were excluded if they did not include one of more of the inclusion criteria terms. Exclusion criteria were communications with a subject matter of immigration, Small Business, Labour, Financial Institutions, Tourism, Justice and Law Enforcement, Infrastructure, Transportation, Telecommunications, Intellectual Property, Budget, Environment, Regional Development, Energy, Aboriginal Affairs, Internal Trade, International Relations, International Trade, Taxation and Finance, or Employment and Training.

3.2.3 Search by Sodium Reduction Campaign Involvement

Additional data collection was added for those heath (NGOs) and professional health care associations who were active on the sodium reduction file. In 2012, 17 health organizations sent a letter to the Prime Minister urging the government to adopt and implement the recommendations from the SWG. The lobby registry was searched using the organization search tool. Those groups were also included in the TFTF and SWF data retrieval and duplicates were removed. The list of organizations searched within the lobby registry is found below in the lobby registry analysis (Table 3). Data collection for these specific organizations was limited to January 1, 2012 – May 10, 2013 representing the time from which the collective advocacy letter was sent to the Prime Minister urging adoption of the Sodium Work Group Strategy, through to the defeat of the Sodium Reduction Bill C-460 in the House of Commons. The same inclusion and exclusion criteria applied to the data retrieved using the sodium reduction involvement search criteria.

Data were extracted and pasted into Excel worksheets for basic coding and sorting. Coding and sorting included number of communications by organization and category, number of government officials, dates of communications and subject matter. Detailed sorting and coding were conducted in Excel where themes and specific aspects of the lobby entries would be assessed. Excel was chosen over NVivo software to allow the researcher the opportunity to assess and sort the data more closely.

3.2.4 Registry of Lobbyists data analysis

Four separate but complementary data analysis approaches (stakeholder coalition, subject matter themes, level of government officials and timing) were applied to the content and thematic analysis. Each of the four analysis approaches comprise components that were found to be key elements of the ACF which when compiled together, can illustrate why policy decisions are made.

Stakeholder Coalitions: The first variable assessed was lobbing activity by stakeholder group or coalition and was created based on the Advocacy Coalition Framework which proposes that stakeholders and policy actors form into groups based on their beliefs to compete in the policy development arena. Based on the ACF, lobbyist organizations were grouped based on their perceived beliefs, interests and mandate. Lobbyist organizations were sorted into nine different groups: 1) health and clinical organizations, 2) food industry including manufacturers, processors, distributors, and retailers and 3) consumer groups representing the interests of the public. 4) pharmaceutical industry, 5) biotechnology industry, 6) animal rights and 7) animal health organizations, 7) cosmetic companies, 8) health food and alternative health industry, and 9) university or think tanks.

Subject matter themes: Each lobbying interaction was categorized according to communication subject matter as entered by the lobbyist organization. Subject matter of lobbying communications is a key aspect of the ACF in that the framing and narratives used by the lobbyist are considered an element of an advocacy coalition's strategy for influencing the government.[161] According to the ACF, lobbying strategies will consider the political ideology of the government and aim to pique the interest of government while aligning the proposed policy solution with the government's values and the advocacy coalitions policy beliefs.[162] Some categories were predetermined from the defined subject matter areas made available by the government in the lobby registry and others were voluntarily themes or subjects provided by lobbyists. Subjects and themes were considered relevant and useful for coding if they appeared in prior literature reviews as framings, narratives, barriers, or facilitators to the sodium and trans fat reduction policy process case documented in the research elsewhere in the world. Categories included health, research, environment, international trade/relations, trans fat, sodium/salt, education, information/ nutrition facts table/ labelling, food safety, food processing/competitiveness, food regulations/standards, industry and small business, consumer issues. Additional categories were captured because they were frequently found in combination with other inclusion subject matter and their presence in combination with the inclusion subject matter was considered useful. These extra subjects or themes provided an opportunity to assess possible narratives for additional analysis. These additional subject matters that were assessed in combination with the original relevant subject matters included employment and training, labour, tourism, science and technology, regional development, intellectual property. Note, data points that only contained employment and training, labour, tourism, science and technology, regional development or intellectual property without relevant subjects were already excluded from data collection.

Level of government officials: The third variable for assessment within the meetings was based on the highest government official in attendance. It is believed that the higher the government official, the greater influence on policy decision making and as such, lobbying meetings have varying degrees of influence.[20] This analysis was based on the ACF concepts of strategy and resource allocation used by coalitions along with the power dynamics that occur between coalitions. According to the ACF, advocacy coalitions and stakeholders strategically use their resources in an aim to exert influence on government decision making.[20] The power dynamics battle occurs within the policy development process as lobbyist vie for the attention of government and insert influence by sharing their beliefs.[139] Strategically, the best chances of doing so are by influencing the highest levels of government and a significant number of government officials. The categories of classification were rank based on level of power within the government and included 1) Prime Minister's Office 2)

Minister 3) Parliamentary Secretary 4) Member of Parliament or Senator 5) senior bureaucrat or civil servant 6) bureaucrat or civil servant.

Timing: The fourth variable of assessment was dates of meetings in relation to key parliamentary and government announcement milestones in the policy development processes. The timeline for analysis started in 2004 with the introduction of a motion to study trans fat reduction in parliament and concluded in 2013 with the defeat of the sodium reduction bill. The Advocacy Coalition Framework insinuates that the policy cycle is a minimum of 10 years.[20] It is also proposed that strategy impacts how successful an advocacy coalition may be in shaping government policy.[20] Plotting lobby activities against a key milestone timeline can enable a better understanding of how coalitions undertook strategic tactics to influence government while coming together to impact government policy decision making. A timeline of key milestones was developed using various government documents and grey literature. The timeline for data collection and analysis was not extended beyond May 2013 because the researcher became employed in a related role at one of the organizations who lobbied on trans fat and sodium reduction in September 2013.

3.3 Stakeholder interviews and document review

3.3.1 Key informant interviews

Key informant interviews were conducted from May 2014 – November 2016 using a purposive sample which was based on membership in the TFTF and SWG as well as notable involvement on the trans fat and sodium reduction strategies in Canada. Key informants are defined as people who are a source of primary information with knowledge and insight on a variety of topics, such as an organization, event, economic system or political structure, and are interviewed intensively for the purpose of providing relatively complete descriptions and explanations of social and cultural patterns.[34]

Forty-six interview invitations were sent from December 2015 to September 2016. Interviews were spread out over a 1.5 year period because the researcher was off on sick leave (Interruption of studies) for a 6 month period and was completing the DrPH program on a part-time basis. Invitations were sent through email, organizational info-lines (when personal emails were not available) or via LinkedIn. Follow-up to non-responses occurred between 3 and 5 weeks after the initial invite was sent. Potential interviewees selected were either members of the TFTF and/or SWG, were employed at an organization which participated in the SWG/TFTF, or were involved with the development and assessment of public health nutrition policy making in Canada while the Trans Fat Task Force and

Sodium Work Group were underway. In total, 17 interviewees were conducted which included 4 civil servants, 4 industry representatives, 1 consumer group representative, and 8 health organization and academic representatives. Of the 12 invitations sent to industry, only 4 resulted in interviews. Health stakeholders had a high interview rate at 42% (8/19). Similarly, half (1/2) of consumer groups agreed to be interviewed. Response was moderate among government officials (4/11) which included 0/3 elected officials. Groups that were invited for interview but did not respond or declined due to scheduling conflicts or lack of interest were media (0/2) and elected government officials (0/3).

A consent form (Appendix 2) and information sheet (Appendix 3) were provided to interviewees. Interviews were conducted using a topic guide (Appendix 4) which was framed using themes from trans fat and sodium cases elsewhere in the world. A review of published peer-reviewed studies of trans fat and sodium reduction policy making processes around the world (including both developing and developed countries) resulted in the emergence of common key themes and contextual factors which were described to influence nutrition policy making. These are discussed in section 1 introduction of this thesis. The review spanned across all levels of government in North America, South America, Australia, Asia and Europe showing a complex dynamic between the translation of scientific evidence into action within which specific factors were found to impede (lacking local research, understanding of issue, consensus in solutions and collaboration as well as competing interests among stakeholders, consumer's taste and value preferences, and lack of public health capacity) or promote policy development (increased consumer and political awareness, media coverage, consumer demand, champion consumer and civil society organizations, government commissioned task forces, coordinated arenas to overcome stakeholder disconnect).[15 69 35 70] Research specific to the US and UK highlighted the existence of conflicts of interest with industry funded scientists influencing policy-making and also the broad range of government interest beyond health including economics, agriculture and trade.[94, 124] The topic guide posed questions about perceived effectiveness of the voluntary approaches, the power dynamics within the TFTF and SWG, and the barriers and facilitators to advancing nutrition policy in Canada. (see Appendix 4)

Interviews were conducted by the researcher, recorded and then transcribed. Transcription was performed by the researcher (4/17 interviews) and Rev Transcription (13/17) a hired service. An initial directed/deductive codebook was created using the themes found within the preliminary literature review. Additional inductive thematic analysis enabled the evolution of codes as analysis progressed. Thematic analysis was completed manually and results with quotations were coded using an Excel spreadsheet. Thematic codes identified were the use and application of evidence,

conflicts of interest, media coverage, centralized power, behind the scenes lobbying of government, political ideologies, consumer demand, coalition building and impact of voluntary agreements.

3.3.2 Document review

Additional document review of grey literature was conducted to gather background information, allow for the mapping of the policy process, lead to the further development of a discussion guide for interview, provide a preliminary list of interview participants and better understand the decision-making process and policy outputs. Reviewed documents include government reports, parliamentary debates and bills, and NGO sources (including published and non-published reports/communications from health and professional organizations), reports from industry associations and consumer groups, scientific literature, grey literature and media articles. Documents for review were also suggested by interviewees. Most government documents and parliamentary debates were publicly available online.

The researcher also requested other non-public government documents which relate to trans fat and sodium. Canadians can access internal government documents through the Access to Information Program (ATIP) although some confidential content can be redacted. An ATIP request was filed January 16, 2016 willing the following inclusion criteria.

> Any and all briefing notes to and from the Assistant Deputy Minister (ADM) or Deputy Minister (DM) related to trans fat reduction starting January 2000 to present.
>
> Any and all briefing notes to and from the ADM or DM related to sodium reduction starting January 2002 to present.
>
> Any and all briefing notes to and from the ADM or DM related to the Sodium Work Group starting January 2007 to August 2012.

The ATIP request was fulfilled and files were sent to the researcher in December 2019. Initially the researcher planned to review and code the 136 pages of government documents secured through the ATIP in alignment with the coding framework used for stakeholder interviews. However, it was apparent that due to many retractions of content (likely because of government cabinet confidentially clauses), there was little information or text available for coding. Instead, the ATIP files served to provide basic insight about dates and processes surrounding the trans fat and sodium policy process.

3.4 Media analysis methods

Building on the call from public health media professionals and academics for more critical assessments of how the media influences public health policy, and how unhealthy commodity industries may use media advocacy to their advantage, this thesis included a media analysis of the trans fat and sodium reduction policy processes. According to Dorfman, there is great value in media content analysis as it can "help media advocates pinpoint areas for creating news to advance policy."[29]Three distinct and complementary methods were used as part of the news media analysis. First, an inductive framing analysis was conducted to assess how the trans fat and sodium reduction policy issues were covered and portrayed in the media and by various media outlets. Second, a quantitative content assessment captured how often different stakeholder voices and opinions were depicted and shared by the media. Lastly, with media article content that did not fit within the inductive framing analysis, an additional high level deductive thematic analysis was employed to explore other important themes in the media articles. This multi-component assessment can facilitate a better understanding of how the media – an actor within the policy subsystem and a communications tactic for stakeholders to share their policy beliefs – can influence the policy making process in terms of generating public support and creating political will for effective nutrition policy advancement.

3.4.1 Data collection

A search of Canadian print (digital) media stories including trans fat and sodium content was conducted on Google News. Only Canadian media outlets were included because it is presumed that national news is more influential on domestic policy than international news. Only digital print media articles were collected because of capacity limitations and the inclusion of broadcast media stories would require a subscription to a costly media tracking and monitoring program. Google News search is free of charge and provides the opportunity for advanced and refined searches. This search tool has been used in other media analysis studies. [163-165]

Data collection was based off key policy milestones and selected to be January 1, 2004 to August 31, 2015. These dates represent the start of the trans fat discussion on the federal political agenda (opposition motion in House of Commons) all the way through to the year that the elimination of trans fat was included in the Minister of Health's mandate letter from the Prime Minister. This length is slightly longer than the data collection for other methods because it was undertaken at a later point in time, and the newly announced ban on trans fat in Canada was deemed important to include in the timeframe of analysis. The overarching sodium reduction policy process timelines are shorter than trans fat but overlap with the trans fat policy evolution. While the timeframe used for

both cases is over 10 years in length, it does not account for the time in which trans fat was not yet on the political agenda. Instead, it starts once trans fat becomes an issue on the government's agenda because this analysis aims to assess the policy debate and policy advancement, not the process which secured the trans fat issue on the policy agenda (stages 2 and 3 of Wallacks policy process categorization).[149]

Data retrieval was conducted for each case using Google News and limited to Canadian sources during the timeline. The keyword "trans fat*" was searched for the trans fat case, and "sodium" or "salt" was used for sodium reduction case. All articles on the first 25 pages of results that contained the key words were assessed. The initial screening removed any non-relevant articles based on title. Non-relevant articles were thought to be those where sodium or trans fat were only listed as part of a recipe. Because the objective of the analysis was to understand media coverage of these nutrition policy issues, recipes were not thought to be useful for inclusion. A secondary level of exclusion criteria removed any sodium or salt articles that did not relate to nutrition, but instead used salt as a chemical compound for instance in weather and snow management – this is a common infrastructure practice in Canada and consumes a great deal of municipal government operational budgets during long and snowy winters, hence it receives a lot of media attention. After reading and reviewing the selected articles, 3 additional media articles that appeared as "recommended and related stories" on media webpages were also included for analysis. Articles were retrieved using NCapture for NVivo 12 Plus and sorted into trans fat, sodium and trans fat/sodium cases based on their content.

3.4.2 Data analysis

Unit of analysis was each media article and comparisons were conducted between trans fat and sodium related articles. Articles were coded and categorized in NVivo, and analysis was supported using NVivo 12 Plus which allowed for quantitative assessments and comparisons between cases, stakeholders, and media outlets. Three complementary methods of analysis were applied to gain a thorough understanding of how the media contributed to the trans fat and sodium reduction policy processes.

1) Framing media analysis using a deductive approach looked at the narratives and arguments in which the trans fat and sodium issues along with their proposed solutions (if mentioned) were conveyed within the media. This allows for a better understanding of how the media may have influenced the cases and government decision making. A deductive approach was applied to media framing analysis, which relied on the findings, questions and knowledge gained from existing literature. The literature conveyed that the media shapes cultural perceptions about health,

contributes to the framing of public health policy problems with "stakeholders variously positioned across those debates" indicating the drivers of health problems as well as the potential solutions in "ways which are politically charged and have policy consequences."[166]

Rowbotham et al. conducted a thorough narrative synthesis of framing used in media on public policies to prevent chronic disease.[158] The authors looked at issues such as alcohol, tobacco and nutrition, and divided the frameinginto categories for and opposed to policy. They found that arguments in support of policy often use health or societal framing whereas arguments opposing policies use economic, practical or ideological framing.[158] These framing categories were then used as an outlineto guide analysis of media framing in the trans fat and sodium media articles. These details can provide insight into how each media outlet can be leveraged to advance public health policy and the ways in which framing can support or hinder the advancement of nutrition policy.

2) Descriptive assessment of stakeholder quotes across media outlets assessed how different stakeholder voices and opinions were captured and shared by the media. This method answers the request for more critical research that investigates whose stakeholder interests the media serves. Furthermore, the framing of public health problems in the media can be particularly divergent "when corporate interests run counter to public health interests" and in these situations, "the media have an important function as both producer of narratives and as narrator to public audiences."[27] For this reason, analysis will include a content assessment of who was quoted from each stakeholder group.

Leading academics in the field of public health policy and media research have proposed that future research in the area should be underpinned by political sciences and assess media production while answering the questions "who is setting the agenda?" and "whose interests does it serve?"[27] In that regard, framing theory, which is based on political and social sciences, is used to explain that the ways in which information is portrayed and defined through verbal, visual, or image devices. Frames can affect the way that an audience processes information their related actions.[153] Comparison will also be undertaken on how framing is used across each media source to assess who could be setting the agenda and whose interests might be given most significance.

In supplement to the media framing analysis, an assessment was conducted about how each quoted stakeholder used frames to support their policy beliefs. The literature conveyed that the media shapes cultural perceptions about health, contributes to the framing of public health policy problems with stakeholder perspectives captured throughout.[166] [27] For this reason, analysis will include an assessment of each stakeholder group and what frames they leveraged.

3) Thematic content analysis using an inductive approach captured the content within media articles that was outside the established deductive coding frameworks. Conventional content analysis was employed using an inducive approach. Such approach is typically used when existing literature on a subject matter is limited, allowing for more flexibility in coding, enabling the categories or themes to flow from the data.[167] While there is existing research on the facilitators and barriers to nutrition policy development on trans fat and sodium reduction,[11, 15, 70, 100] there is limited literature on the media's portrayal and role in the policy development process around trans fats and sodium specifically, and none for Canada. As such, it was deemed appropriate to take an inductive approach for analysis and go beyond the deductive media framing analysis to better understand the how the issues were covered by the Canadian media. For this analysis, the researcher read each article in fulsome to get an overall picture of the story, and then coded sentences based on common themes.

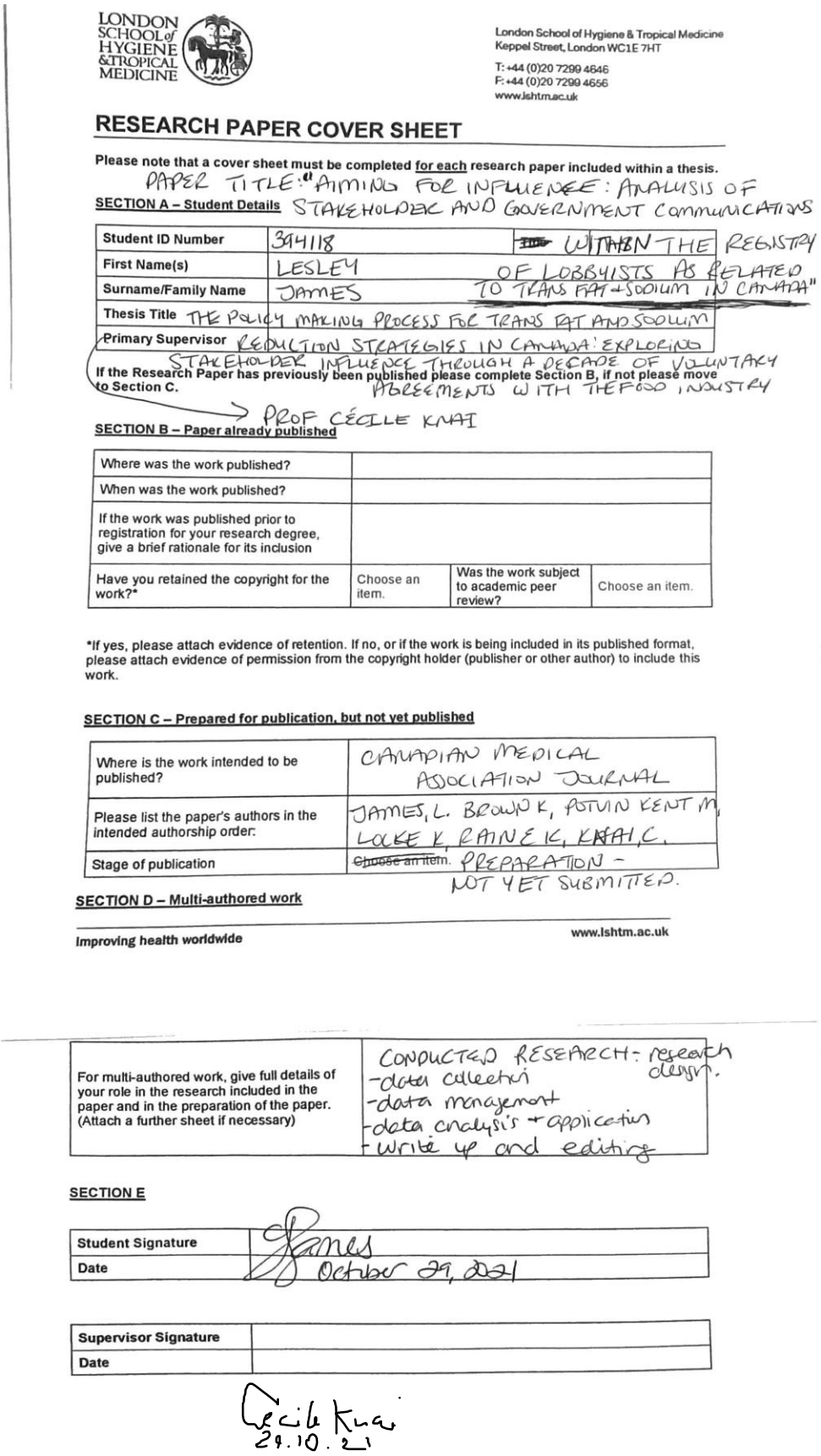
4. Results: Analysis of the Registry of Lobbyists of Canada related to the trans fat and sodium reduction policy processes

4.1Introduction / overview of this results chapter

This results chapter is in manuscript style and presents the results of the lobby analysis methods. The lobby analysis is the first method undertaken as part of the thesis and uses mixed methods to illustrate and capture the influence of various stakeholder groups on the government during the trans fat and sodium reduction policy processes.

4.2 Article to be submitted for publication

4.2.1. Article cover sheet



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RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

PAPER TITLE: "AIMING FOR INFLUENCE: ANALYSIS OF STAKEHOLDER AND GOVERNMENT COMMUNICATIONS WITHIN THE REGISTRY OF LOBBYISTS AS RELATED TO TRANS FAT + SODIUM IN CANADA"

SECTION A – Student Details

Student ID Number	3944118
First Name(s)	LESLEY
Surname/Family Name	JAMES
Thesis Title	THE POLICY MAKING PROCESS FOR TRANS FAT AND SODIUM REDUCTION STRATEGIES IN CANADA: EXPLORING STAKEHOLDER INFLUENCE THROUGH A DECADE OF VOLUNTARY AGREEMENTS WITH THE FOOD INDUSTRY
Primary Supervisor	PROF CÉCILE KNAI

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?			
When was the work published?			
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion			
Have you retained the copyright for the work?*	Choose an item.	Was the work subject to academic peer review?	Choose an item.

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SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	CANADIAN MEDICAL ASSOCIATION JOURNAL
Please list the paper's authors in the intended authorship order:	JAMES, L. BROWN K, POTVIN KENT M, LOCKE K, RAINE K, KNAI, C.
Stage of publication	~~Choose an item.~~ PREPARATION - NOT YET SUBMITTED.

SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	CONDUCTED RESEARCH: research design. - data collection - data management - data analysis + application - write up and editing

SECTION E

Student Signature	James
Date	October 29, 2021

Supervisor Signature	
Date	

Cecile Knai 29.10.21

Title: Aiming for influence: Analysis of stakeholder and government communication within the Registry of Lobbyists as related to the trans fat and sodium reduction policy processes in Canada

Authors: James L, Brown KA, Potvin Kent M, Lock K, Raine K, Knai C.

Abstract

High intakes of sodium and trans fat have put populations at increased risk for non-communicable disease and as a result, the World Health Organization has called upon member states to reduce intake of these two ingredients. Canada addressed reductions in sodium and trans fat intake through voluntary measures despite the recommendations for regulatory levers. In order to assess stakeholder influence on the policy processes related to trans fat and sodium reduction efforts in Canada this study utilized the Registry of Lobbyists communication entries (2003 – 2014) to determine the breadth, frequency and volume of stakeholder communications with government. Findings indicate that the health subject matter was the most commonly used in lobbying communications, but the food industry also leveraged a wider range of subjects like agriculture and industry. Furthermore, the food industry engaged in more lobby meetings than any other stakeholder group and was more likely to have meetings with higher ranking government officials. These two factors could contribute to more influence on government decision making related to trans fat and sodium policies.

Introduction

Shifts in the global food system over the past few decades have led to increased consumption of processed and convenience foods.[4] These foods are often high in sodium, sugar and fat, putting people at higher risk for non-communicable diseases like cancer, diabetes, cardiovascular disease and obesity.[4] The same holds true in Canada, where the burden of NCDs has increased as a result of overconsumption of two nutrients in particular, trans fat and sodium. Starting in the 1960s, cheap industrial produced trans fat (partially hydrogenated oils) were added to foods during processing to extend shelf life and improve food texture.[61] By the 1990s, Canadians were among the highest consumers of trans fat – a range of 3-9g/day in the mid 2000s, down from an average of 8.4 g/day in 1990s – but still well over the 1% daily caloric intake recommended by the World Health Organization,[61] and putting Canadians' health at risk. In 2005, after the passage of a 2004 opposition motion in parliament which suggested that mandatory labelling may not be sufficient to reduce trans fat intake among the Canadian population to levels as recommended by WHO, the Canadian federal government established The Trans Fat Task Force (TFTF), an expert advisory panel comprising representatives from government, industry, health organizations, academia and civil

society and tasked with the development of a strategy to eliminate or reduce Canada's high levels of "processed trans fat in foods to the lowest possible levels."[168] The TFTF recommended formal regulations and trans fat targets. [6] However, the federal government chose to instead set voluntary recommended levels of trans fats in foods, which aligned with the task force targets of a total trans fat content of no more than 2% in cooking oils and soft margarines and no more than 5% in all other foods.[169] This hybrid approach which included mandatory trans fat content labeling on pre-packaged foods and voluntary content limits for the food industry did not cover restaurants or other foods eaten outside the home, which were an area of increasing reliance among the Canadian population at the time.[168] The voluntary approach included a warning to industry that government would impose hard regulation should sufficient reductions not be made within a two year monitoring period.[168] However, after two years of monitoring and public reporting of trans fat content, the government declared that food manufacturers had done enough even though Canada had not reached the trans fat levels recommended by the World Health Organization and 25% of the food products tested still contained harmful levels of trans fat.[75] Since then, public health organizations have been vocal in stating that although the food industry had considerably reduced trans fat content (75% of foods met the government targets), the overall food supply has not yet reached the targets as recommended by the TFTF.[169]

Similarly, sodium has been used in processed food as a preservative and to improve palatability.[9] While our bodies need a minimum level of sodium to function, intakes in around the world far exceed this required level which leads to hypertension (high blood pressure) - the leading risk factor for stroke and a contributor for other chronic conditions like heart disease, certain cancers and diabetes.[82] As such, WHO recommended that sodium intake be lowered to 2300 mg/day.[7] In 2004, sodium intake in Canada averaged 3400 mg/day[9] and has since been estimated as the leading dietary risk factor contributing to the burden of disease in Canada.[44] In 2006, recognizing that sodium intake in Canada was higher than the recommended intake and putting people at increased risk for NCDs, health organizations worked together to bring the issue onto the political agenda. In response, the Canadian government established the Sodium Working Group (SWG), an expert panel of representatives from a variety of stakeholders groups such as food industry, health organizations, civil society, researchers, health professionals and government with an aim to explore sodium intake reducing measures.[107] In July 2010, the SWG's report entitled a *Sodium Reduction Strategy* was released and included a goal of average sodium intake no more than 2300 mg/day by 2016. [9] The objective was to be reached through a range of strategies including sodium reduction targets for the food industry; collaboration between stakeholders and various levels of government; an education strategy to change behaviour.[9] Shortly after the release of the SWG report, the federal and

provincial ministers of health agreed to prioritize the new sodium reduction goal of 2300 mg by 2016.[107] But by February 2011, Health Canada had disbanded the SWG with no plans to reconvene the group,[105] despite the Working Group being tasked with target setting and food supply surveillance. Recent reports show that Canada has made some progress towards the 2300 mg/day goal but as of 2017, population sodium intake remained higher than recommended levels with an average of 2430 mg/day.[8]

Canada is one of few countries regulate lobbying activity.[119] The Office of the Commissioner of Lobbying of Canada under the authority of the Lobbying Act (2008) aims "to ensure transparency and accountability in the lobbying of public office holders."[129] All federal lobbyists in Canada must be registered with the Commissioner and are required to disclose and report on communications with the government using the Registry of Lobbyists.[127, 130] The Registry contains information about lobbying activity and is available to the public online.

This paper reports a study on the influence of stakeholders on the trans fat and sodium reduction cases in Canada using the Registry of Lobbyists to assess influence.

Theoretical framework

This paper applied the Advocacy Coalition Framework (ACF) which posits that policy is informed by groups of actors who work together and in opposition to influence the government policy making processes.[38] The ACF accentuates the role of interest groups within a policy subsystem including those with both common and opposing policy beliefs and the conflict that emerges as a result.[38] The ACF is the foundational theory and analytical framework that will be applied to this study and enables assessment of the influence and capacity of each stakeholder group – each of which has not been explored in existing public health research and represents a gap in the knowledge base. Undercovering such details will provide a better understanding of how stakeholders may have influenced the government's decision making in the trans fat and sodium reduction processes.

Methods

A content analysis of the Lobby Registry of Canada was conducted to assess efforts and tactics of various stakeholders and groups in influencing trans fat and sodium reduction policies in Canada.

Data collection

A search of trans fat and sodium reduction related lobbying activity was conducted on the Registry of Lobbyists to account for stakeholder meetings with the federal government. Extraction for trans fat and sodium cases was done currently due to overlaps in timeline and was limited to the time

period of January 1, 2004 - May 10, 2013 representing the start of federal action on trans fat and the defeat of the sodium reduction Bill (C-460) in the House of Commons. The first data retrieval was based on keyword (nutrition OR; salt; OR sodium; OR trans fat*; OR transfat*; OR food*) and subject matter (health).

Next, Registry of Lobbyist data was pulled from stakeholder organizations who were part of the TFTF and SWG using the same dates and specific inclusion and exclusion criteria (see Table 1). Inclusion criteria was based on themes as seen in existing research base which highlighted subject matters used to frame barriers and facilitators to nutrition policy adoption.[15, 35, 36] Five members of the TFTF were excluded for – 1 being a government official and therefore unable to lobby and 4 being individuals who were exempt from registering as lobbyist and therefore not tracked in the registry. Lastly, 17 heath and clinical organizations (NGOs) who were active on the sodium reduction file were searched but data collection for these specific organizations was limited to January 1, 2012 – May 10, 2013 representing the time from which a collective advocacy letter was sent to the Prime Minister urging adoption of the Sodium Work Group Strategy, through to the defeat of the Sodium Reduction Bill C-460 in the House of Commons. Organizations included in the search are listed in Table 1. The same inclusion and exclusion criteria applied to the data retrieved using the sodium reduction involvement search criteria. Duplicate entries which appeared in both the first (subject matter) and second (Trans Fat Task Force members, Sodium Work Group members and NGO sodium campaign) search were removed. Communications entries deemed irrelevant were excluded if they did not include one of more of the inclusion criteria terms. Data was downloaded then sorted and coded using Excel worksheets.

Table 2. Inclusion and exclusion criteria regarding the subject matter

Inclusion Criteria (subject matter)	**Exclusion Criteria (subject matter)**
Health	Immigration
Food safety	Small Business
Agriculture	Labour
Food regulations	Financial Institutions
Food labelling	Tourism
Food processing competitiveness	Justice and Law Enforcement
Nutrition Facts Education Initiative	Infrastructure
Sodium reduction	Transportation
Sodium	Telecommunications
Food regulatory system	Intellectual Property
Food fortification regulations	Budget
Education	Environment
Consumer issues	Regional Development
Industry	Energy
	Aboriginal Affairs

Inclusion Criteria (subject matter)	Exclusion Criteria (subject matter)
	Internal Trade International Relations International Trade Taxation and Finance Employment and Training

Data analysis

Using the ACF as a conceptual model to guide data analysis, four separate but complementary approaches were applied to assess data, understand the findings, and fit results together using theoretical underpinnings.

Stakeholder coalition assessment

The first variable assessed was lobbying activity by stakeholder group or coalition and aligns with the ACF which proposes that stakeholders and policy actors form into groups based on their beliefs to compete in the policy development arena.[147] Lobbyist organizations were grouped based on their perceived beliefs, interests and mandate. Based on the ACF, it is presumed that actors or lobbyist organizations form into coalitions based on policy beliefs, values and common interests.[139] As such, the organizations retrieved in from the Registry of Lobbyists data collection were grouped into categories based on sector, vision and mandate. An internet search of each organization's website provided those details and the researcher then plotted organizations. Health and clinical organizations were grouped together under the assumption that they would value population health and aim for policy change to improve the food environment. The food industry including producers, processors, manufacturers, retailers and trade organizations were included in another category under the assumption that their main motivator was profit from food. Other categories were created for pharmaceutical companies and biotechnology organizations. These groups were thought to have similar interests and perspective on food regulations however, their level of involvement in the trans fat and sodium reduction policy processes remains unclear. Knowledge producers like universities and think tanks were grouped together. These organizations are traditionally mandated to be unbiased, evidence-based and science oriented, but past research on food policy development and the commercial determinants of health (CDOH) has indicated that these organizations can be influenced by industry funding and often used as front organizations to validate the opinions of other policy actors. [16]Animal focused organizations and alternative health/health food organizations were assembled under the pretence their values would be more focused on health than traditional food industry groups, but they would still have vetted interests in profitability. Consumer rights and opinion groups were categorized as a separate collective as the ACF indicates that the public is an

independent and important actor in the policy making process.[170] Lastly, cosmetic companies were retrieved and grouped together, however their interest and influence on the trans fat and sodium reduction policy processes is considered limited or not existent and as such that data was not analyzed. Table 3 lists the stakeholder groups and the organizations/lobbyist included with each grouping.

Subject matter assessment

Each lobbying interaction was categorized according to communication subject matter as entered by the lobbyist organization – some of which were predetermined in the registry and some were provided by lobbyists voluntarily. Subject matter of lobbying communications is a key aspect of the ACF in that the framing and narratives used by the lobbyist are considered an element of an advocacy coalition's strategy for influencing the government.[139] According to the ACF, lobbying strategies will consider the political ideology of the government and aim to pique the interest of government while aligning the proposed policy solution with the government's values and the advocacy coalition's policy beliefs.[139] Subjects and themes outside the traditional "health", "nutrition" "trans fat" or "sodium" and specific nutrition policy measures were considered relevant and useful for coding if they appeared in prior literature reviews as framing, narratives, barriers, or facilitators to the sodium and trans fat reduction policy process case documented in the research elsewhere in the world. For instance, food safety and economy were considered relevant as these framings were captured in past literature as barriers to trans fat and sodium policy adoption.

Highest ranking government official assessment

The third variable of assessment for the communications meetings is based on the highest government official in attendance. It is believed that the higher the government official, the greater influence on policy decision making and as such, lobbying meetings have varying degrees of influence.[39, 123] Based on the ACF, stakeholder coalitions battle within the policy development process as lobbyists vie for the attention of government and insert influence by sharing their beliefs.[170] Strategically, the best chances of doing so are by influencing the highest levels of government and a significant number of government officials.[170] The order of rank for government officials was deemed as follows: Prime Minister's Office (PMO), Minister, Parliamentary Secretary, Member of Parliament (MP)/Senator, Senior Level Civil Servant/Bureaucrat and bureaucrat.

Timeframe assessment

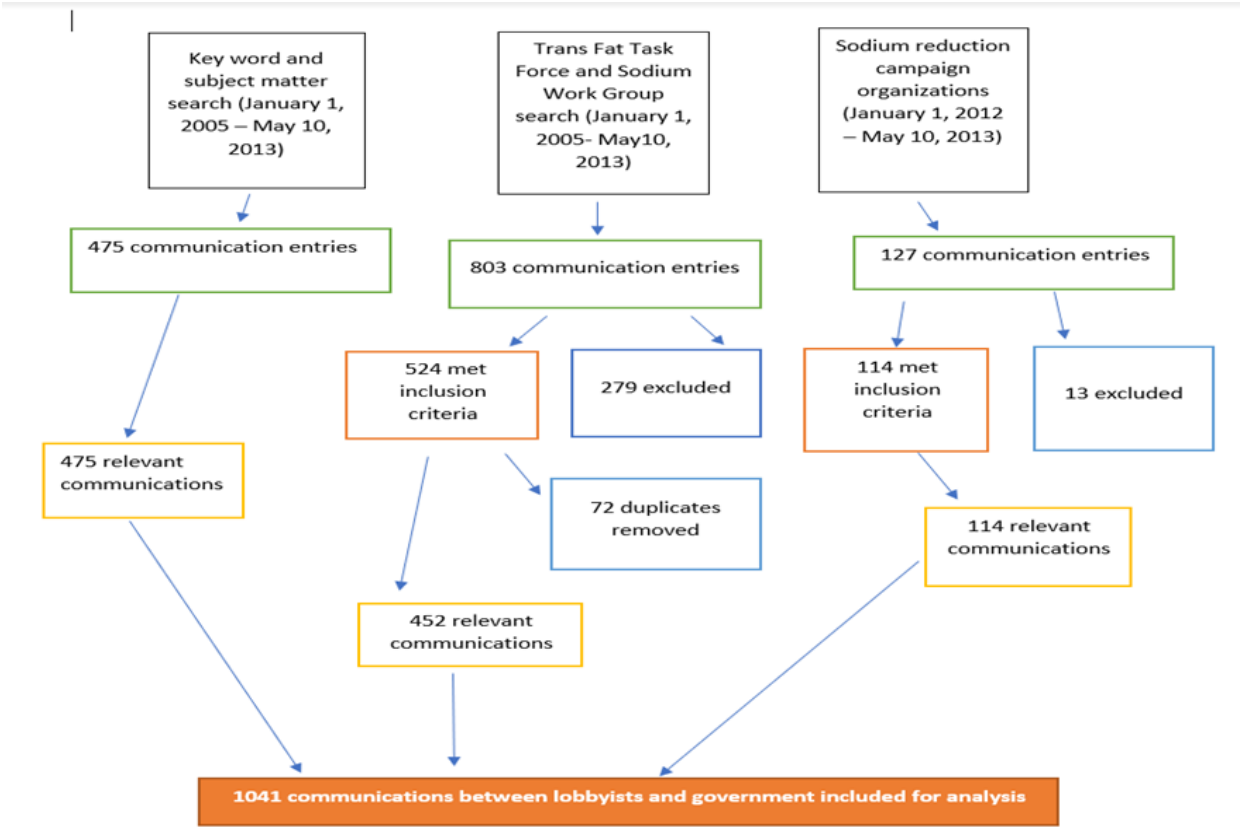
The fourth classification was based on dates of meetings in relation to key parliamentary and government announcement milestones in the policy development processes. The timeline for

analysis started in 2004 with the introduction of a motion to study trans fat reduction in parliament and concluded in 2013 with the defeat of the sodium reduction bill. The ACF insinuates that the policy cycle is a minimum of 10 years.[170] It is also proposed that strategy impacts how successful an advocacy coalition may be in shaping government policy.[170] Plotting lobby activities against a key milestone timeline can enable a better understanding of how coalitions undertook strategic tactics to influence government while coming together to impact government policy decision making. A timeline of key milestones was developed using various government documents and grey literature. The timeline for data collection and analysis was not extended beyond May 2013 because the researcher became employed in a related role at one of the organizations who lobbied on trans fat and sodium reduction in September 2013.

Results

Total data entries retrieved from the Registry of Lobbyists was 475 (subject matter and key word search), 803 (TFTF and SWG stakeholder search) and 127 (sodium reduction campaign involvement) totalling 1295 but with the removal of duplicates and application of exclusion criteria the total number of lobby communication data entries for included for analysis was 1041. Figure 3 below depicts overall data collection and removal as well as further explanation of each process.

Figure 3. Data collection search results



Subject matter and key word search combined with stakeholder search

The subject matter and key word (nutrition, salt, sodium; trans fat*, transfat*; food* and health) Registry of Lobbyists data collection retrieval resulted in 475 communications between stakeholders and government. However, trans fat*, sodium and salt only appeared 13 times in the data extracted, and most data retrieved was because of the key words "food" or "nutrition."

Trans Fat Task Force and Sodium Work Group stakeholder search

The TFTF and SWG specific lobby retrieval resulted in 452 noted communications between stakeholders and government after the removal of those not meeting inclusion criteria (Table 2) and deleting duplicate communications. Communication entries in the Registry of Lobbyist often included multiple subject matters. A communication entry data point was included in the sample if it contained 1 or more inclusion criteria, regardless of whether it also contained an exclusion criteria subject matter. However, if a community entry data point only contained the subject matter deemed to be exclusion criteria without any inclusion subject matter, it was discarded from the data sample.

Of the 12 organizations who were part of the TFTF, 5 (Canadian Council of Grocery Distributors, Baking Association of Canada, Centre for Science in the Public Interest, Option Consommateurs and Restaurants Canada) had lobby entries during the timeline studied. The Heart & Stroke Foundation chaired the Trans Fat Task Force and was also an active lobbyist during this time but was not listed as a member of the TFTF in government documents, although their lobbying activities and role in the policy processes are important to note. Overall, of those organizations part of the Trans Fat Task Force, 3/7 (43%) industry organizations were active in lobbying, 2/3 (66%) health organizations and 1/2 consumer groups (50%).

Within the Sodium Work Group, about half of the members (9/16) displayed lobbying activities. However only 3/8 (38%) health organizations were active on the lobby front and 6/7 (86%) food industry organizations were active lobbyists during the timeline studied.

Sodium reduction campaign stakeholder search

The health NGO sodium reduction campaign specific organizations resulted in 114 communications after subtracting 13 communications that were removed based on exclusion criteria (table 2).

Of those health and clinical organizations who were part of the 2012 Sodium Reduction Letter to the Prime Minister, 7/16 (44%) displayed lobbying activities in the 2012 – 2013 timeline. Table 3 below

summarizes all of the stakeholder organizations from the SWG, TFTF and Sodium Reduction campaign which were included for analysis. Their presumed coalition is noted and colour coded as either food industry, health organization or consumer group. The chart also notes whether lobbying activities were undertaken during the timeline of research study.

Overall data for analysis

Altogether, 1041 (475 key word and subject matter + 452 TFTF and SWG members + 114 sodium reduction campaign) lobbyist communication entries were included for analysis. However, many communication entries included meetings with multiple government officials. For instance, one lobby communication entry might include multiple meetings on the same day on the same subject, or might represent one meeting, in which there were multiple government attendees. For this reason, total number of government officials lobbied is also noted. There were 792 government officials lobbied as found in the subject matter search and 620 retrieved from the task force and work group search, along with 149 within the sodium reduction campaign specific organizations. This gives a grand total of 1561 communication activities with government officials. These numbers are not depicted in Figure 3, but will be used as denominators throughout the analysis portion to assess reach of lobbying efforts in addition to communication entries as depicted in Registry of Lobbyists.

As part of the data collected and used for analysis, there was a range in organizations who entered lobby communications. Altogether, 76 organizations were represented based on the subject matter search. The Sodium Work Group, Trans Fat Task Force and Sodium Reduction Campaign organizations each had 16, 14 and 16 organizations included as depicted in Table 3. Among the SWG representatives 37.5% of health organizations lobbied vs 75% of food industry organizations. For organizations part of the TFTF, 66.8% of health organizations and 37.5% of food industry organizations did. A minority (43.8%) of health organizations who campaigned for sodium restrictions in the 2012 letter to the Prime Minister indicated lobbying communications with government.

Table 3. Trans Fat Task Force, Sodium Work Group and Sodium Reduction Campaign Organizations – Lobbying Actions

<table>
<tr><th></th><th>Sodium Work Group Representatives</th><th>Trans Fat Task Force Representatives</th><th>2012 Sodium letter to Prime Minister</th></tr>
<tr><td rowspan="3">Organizations who engaged in lobbying</td><td rowspan="2">Health: Dietitians of Canada, Heart and Stroke Foundation of Canada, Centre for Science in the Public Interest (n = 3)</td><td>Health: Centre for Science in the Public Interest, Heart and Stroke Foundation (2)</td><td rowspan="3">Health: Canadian Nurses Association, College of Family Physicians of Canada, Canadian Pharmacists Association, Dieticians of Canada, Centre for Science in the Public Interest, Canadian Medical Association, Heart And Stroke Foundation of Canada (n = 7)</td></tr>
<tr><td>Consumers: Option Consommateurs (1)</td></tr>
<tr><td>Food industry: Baking Association of Canada, Canadian Meat Council, Food and Consumer Products of Canada, Food Processors of Canada, Canadian Council of Grocery Distributors, Canadian Restaurant and Foodservices Association (n=6)</td><td>Food Industry: Canadian Council of Grocery Distributors , Baking Association of Canada, Canadian Restaurant and Food Services Association (n = 3)</td></tr>
</table>

	Sodium Work Group Representatives	**Trans Fat Task Force Representatives**	**2012 Sodium letter to Prime Minister**
Organizations who did not engage in lobbying	Health: Canadian Stroke Network, Canadian Nutrition Society, Council of Chief Medical Officers of Health, Hypertension Canada (previously Blood Pressure Canada), Extenso—Reference Centre for Human Nutrition (n = 5)	Health: Canadian Cardiovascular Society (1) Consumers: Consumers Association of Canada (n=1)	Health: Canadian Association for Cardiac Rehabilitation, *Canadian Cardiovascular Society*, *Canadian Stroke Network*, The Canadian National Specialty Society for Community Medicine, *Hypertension Canada*, Canadian Society of Internal Medicine, Canadian Heart Failure Network, Canadian Society of Nephrology, Canadian Council of Cardiovascular Nurses (n=9)
	Food Industry: The Canadian Council of Food and Nutrition*, Dairy Processors of Canada (n = 2)	Food Industry: Bunge Canada, Vegetable Oil Industry of Canada, Beef Information Centre, Canada Bread, *Canadian Council of Food and Nutrition** (n=5)	
Totals	8 health organizations (37.5% lobbied and 62.5% did not lobby)	3 health organization (66.7% lobbied and 33.3% did not lobby) 8 food industry organization (37.5%	16 health organization (43.8% lobbied and 56.3% did not lobby)

	Sodium Work Group Representatives	Trans Fat Task Force Representatives	2012 Sodium letter to Prime Minister
	8 food industry organization (75% lobbied and 25% did not lobby) 16 TOTAL organizations	lobbied and 62.5% did not lobby) 2 consumer organizations (50% lobbied and 50% did not lobby) 13 TOTAL organizations	

Notes: Organizations in italics are duplicates and appear in more than 1 data collection category.

*The Canadian Council of Food and Nutrition is classified as a health organization, although they have a wide mandate that includes consumer representation while also openly receiving funding from the food industry**.**

Stakeholder categories and "advocacy coalitions" characteristics

Table 4 outlines the various lobby organizations grouped into each category. The food industry and pharmaceutical industry are the largest categories with 26 organizations each found in the Registry of Lobbyists. The health non-government and clinical associations category included 12 organizations. The other categories included less than 5 organizations each.

Table 4. Lobby Organizations by Category

Category	Organizations	Total of orgs	# of orgs from TFTF, SWG or sodium campaign
Health NGO and clinical associations	Canadian Blood Services, **Canadian Medical Association**, Canadian Public Health Association, **Centre for Science and the Public Interest**, Food Banks Canada, HealthCareCAN, **Heart & Stroke Foundation**, **Dietitians of Canada**, **Canadian Nurses Association, College of Family Physicians of Canada, Canadian Pharmacists Association**	11	7

Category	Organizations	Total of orgs	# of orgs from TFTF, SWG or sodium campaign
Food industry	**Baking Association of Canada**, BC Dairy Association, Beer Canada, Canadian Beverage Association, **Canadian Council of Grocery Distributors**, Canadian Horticultural Council, **Canadian Meat Council,** Canadian National Millers Association, Canadian Produce Marketing Association, Canadian Renderers Association, Canadian Supply Chain Food Safety Coalition, Canadian Vintners Association, Canola Council of Canada, Chicken Farmers of Canada, Dairy Farmers of Canada, Egg Farmers of Canada, **Food and Consumer Products of Canada,** Janes Family Foods, Loblaws, Maple Leaf Foods, National Cattle Feeders Association, PepsiCo, **Restaurants Canada**, Retail Council of Canada, Global Green Company, **Food Processors of Canada**	26	6
Pharma industry	Abbott Laboratories Canada, Actavis Pharma, Allergan Canada, Apotex, Astra Zeneca, Baxter, Bayer, Bioniche Life Sciences, Boston Scientific, Canadian Generic Pharmaceutical Association, Genzyme Canada, Gilead Sciences, GSK, GS1 Canada, Innovative Medicines Canada, Intervac, Janssen Inc, Johnson & Johnson, Labopharm Inc, Merck Canada, Mylan Pharmaceuticals, Pfizer, Purdue, Sandoz, Sanofi, Teva Canada,	26	N/A
Other	Bioniche Food Safety, EI du Pont, BiotecCanada, Canadian Agri-Food Policy Institute, Council of Ontario Universities, McMaster University, University of Guelph, University of Saskatchewan, Canadian Animal Health Institute, World Society for the Protection of Animals, Association of Canadian Faculties of Agriculture and Veterinary Medicine,	16	N/A

Category	Organizations	Total of orgs	# of orgs from TFTF, SWG or sodium campaign
	Canadian Veterinarian Association, Canadian Coalition for Health Freedom, Canadian Health Food Association, Canadian Homeopathic Pharmaceutical Association, **Option Consommateurs**		

Note: Bolded organizations are members of the TFTF, SWG and/or sodium reduction campaign.

Descriptive analysis of number of officials lobbied

Results were also assessed based on number of lobby communications or total number of officials lobbied by stakeholder category. Table 5 below depicts both frequencies across all groups. The food industry had the largest number of communications at 536 and greatest number of lobbied government officials at 868. These numbers represent 51.5% of total communications across stakeholder groups and 55.6% of total officials lobbied. The health and clinical organization category were the next most prominent stakeholder lobby group with 252 communications and 303 officials lobbied accounting for 24.24% of communications and 19.4% of officials lobbied. The pharmaceutical industry stakeholders logged 71 communications with 162 government officials, representing 7.3% of lobby communication entries and 10.4% of total officials lobbied. The only other stakeholder group with prominent lobbying presence was the alternative health and medicine category. They accounted for 9.1% of lobby communications and 6.9% of total officials lobbied. All other categories – biotechnology, cosmetics, universities/think tanks and animal groups made up less than 3% of communications and officials lobbied.

Table 5. Lobby communications and total officials lobbied by stakeholder category

Stakeholder / Lobby communications	Total officials lobbied in communications n (%)	Communication entries n (%)
Food industry	868 (55.6%)	536 (51.5%)
Pharmaceutical industry	162 (10.4%)	71 (6.8%)
Health and clinical groups	302 (19.3%)	251 (24.1%)

Food safety groups	33 (2.1%)	22 (2.1%)
Consumers	14 (0.9%)	8 (0.8%)
University and think tanks	38 (2.4%)	28 (2.7%)
Alternative health and medicine	108 (6.9%)	95 (9.1%)
Animal groups	15 (1%)	9 (0.9%)
TOTAL	**1561**	**1041**

Findings

Each organization reported lobby communications with subject matter. A content analysis summarizes the inclusion of specific subject matters across each stakeholder grouping. Results are summarized for the top 10 subject matters (along with subject matters "regulation", "sodium", and "trans fat") in Table 6. Some lobby communication data entries included multiple subject matters (i.e. Health and Agriculture). The most common subject matter was health, accounting for 71.1% of lobby communications. This was followed by agriculture with 31.9%, international trade/relations at 15.7%, industry at 14.9%, consumer issues 9%, employment/labour at 6.1%, and education at 4.3%. All other subject matters accounted for less than 3% of lobby communications including trans fat and sodium explicit subject matter entries. Similarly, nutrition labeling which encompasses trans fat and sodium content was less prominent in meetings, making up less than 3% of subject matter.

Table 6. Top lobby communications by subject matter for each stakeholder category.

Subject matter / stakeholder category	**Food industry**	**Pharmaceutical industry**	**Health and clinical groups**	**Other**	**TOTAL**
health	239	71	250	180	**740 (71.1%)**
agriculture	284	3	1	44	**332 (31.9%)**
international trade/relations	141	13	1	4	**159 (15.9%)**
industry	117	34	0	4	**155 (14.9%)**
consumer issue theme	50	16	0	28	**94 (9%)**

Subject matter / stakeholder category	Food industry	Pharmaceutical industry	Health and clinical groups	Other	TOTAL
employment/ training/labour	39	0	23	1	**63 (6.1%)**
education	36	0	4	5	**45 (4.3%)**
processing competitiveness	29	0	0	0	**29 (2.8%)**
small business	11	0	0	18	**29 (2.8%)**
labelling and nutrition table	26	1	0	1	**28 (2.7%)**
regulations/ standards	16	1	1	5	**23 (2.2%)**
sodium	4	0	0	0	**4 (0.4%)**
trans fat	3	0	0	0	**3 (0.3%)**

As seen above in Table 6 within the food industry lobby communications, the most common subject matter was agriculture, followed by health, international relations/trade, and industry. Across the pharmaceutical industry category, health was most commonly found as the subject matter for lobby communications followed by industry, consumer issues and intellectual property. Among health and clinical groups, health was the predominant subject matter reported in lobby communications. Health was the most common subject matter across stakeholder groups which is expected since it was a key search criterion. Health appeared both as an individual subject matter and also grouped with others. Among health and clinical groups lobby communication entries, health was a solo subject matter in 212 entries representing 84.8% of all health communications and 84.5% of total communication entries. When assessing health as a subject matter among food industry communications entries, 105 lobby entries were solely focused on health, accounting for 19.6% of all communications and 43.9% of health communications. In approximately 56% of the food industry's health-oriented lobby communications, another subject matter was paired with health.

Results for level of government official in lobbying show a large variation between stakeholder categories as shown in Table 7. While both the food industry and health/clinical group categories had similar results in meeting with the Prime Minister's Office (1.7% and 2.8%), there was a larger difference between ability to access high level elected officials. Ten percent (10.3%) of food industry

communications entries included a minister or parliamentary secretary, but only 3.1% of heath and clinical group lobby communications reported a minister of parliamentary secretary as the highest ranking official. Health and clinical groups interacted most frequently (68.9%) with members of parliament and/or senators as the highest-ranking official in lobby communication entries. As did alternative health and medicine with 87% of communications involving an MP as highest ranking official. Among the food industry, most lobby communications were with senior level civil servants (political staffers) or bureaucrats (54%).

Table 7. Highest ranking government official by stakeholder/advocacy category

Stakeholder category / highest ranking gov official mtgs	**PMO**	**Minister**	**Parl Sec**	**MP/ Senator**	**Senior Civil Servant**	**Bureau-crat**	**TOTALS**
Food industry	9 (1.7%)	40 (7.5%)	15 (2.8%)	102 (19%)	290 (54%)	80 (14.9%)	536
Pharma industry	1	12	0	0	57	1	71
health / clinical groups	7 (2.8%)	7 (2.8%)	1 (0.4%)	173 (68.9%)	41 (16.3%)	22 (8.8%)	251
food safety / biotech	0	1	0	8	10	3	22
consumers	1	0	0	8	3	9	21
cosmetics	0	0	0	0	8	0	8
university / think tank	0	1	0	0	22	5	28
alternative health	1	3 (3%)	4 (%)	83 (87%)	2	2	95
animal groups	0	0	0	0	9	0	9

Legend: Mtg=meetings, PMO= Prime Minister's Office, Parl Sec = Parliamentary Secretary,

Lobby timing results

Timing of meeting is key to understand the temporal relation between lobby communications and government decision making. Results show that each year, the food industry had the most presence in meeting with government officials. In almost all years included in the assessment, the food industry met with the most government officials. Only in 2012 did the number of health stakeholder lobby communications exceed those of the food industry. However, that same year the food industry did surpass the health community in outreach, with 56 more officials listed in the lobby communications. While the health and clinical category lobby communications increased each year, it was a fraction of the food industry.

Discussion

This study has documented an increasing level of food industry lobbying of the Canadian government over time. These findings align with Mulligan et al. who assessed lobbying around nutrition policy in Canada during the Healthy Eating Strategy negotiations.[23] The findings in both studies showcase the breadth of lobbying among the food industry stakeholders – the minority of health organizations reported lobbying communications with the government, whereas the majority of food industry reported lobbying efforts. With fewer organizations involved in government lobbying, the health sector faced limits in their ability to influence the policy process which could explain the policy outcomes of a voluntary mechanism which favoured the food industry. The ACF proposes that resource allocation and capacity are indicators of which advocacy coalition will be successful in a policy subsystem.[170] In comparing the health and food sectors, it is evident that the food sector actors either had more success in securing meetings with government or allocated more human resources towards lobbying given the number of meetings that were secured and the overall number of organizations involved in lobbying.

Consumer interests and public opinion are key elements in the policy development process according to ACF, but only 1 out of 2 consumer group was shown to be active on the lobbying front. Universities and think thanks have a key role to play in translating evidence and research, however of those who reported lobby activity many are thought to have vested ties to food industry.[171] Such ties to industry could skew and bias the messages and communications shared with government officials and added more weight to the perspectives, values and overall influence of food industry.[11] According to the WHO and its assessment on the commercial determinants of health (CDOH), the generation of skewed research and use of front groups and think tanks are tactics commonly used by corporations who aim to influence public policy.[18] University of Guelph and Saskatchewan both specialize in agricultural research and receive funding from food industry and were active lobbyists during this case study period.[171] Similarly, the pharmaceutical industry and those who accept funding

from it could have a vetted interest in research outcomes and health policy.[172] The pharmaceutical industry demonstrated consistent lobbying communications over the course of the study. It is unclear if those lobbying efforts included any discussion on food policy. Though it has not been demonstrated, there is potential that the pharmaceutical industry could favour medication as the preferred intervention for hypertension, and as such, their views – including research and policy beliefs - on the link between sodium and health could be biased.

While it appears that the health and clinical sector demonstrated lower levels of engagement in terms of lobbying officials during the trans fat and sodium reduction policy processes, there are other considerations which could explain these results. The Heart and Stroke Foundation was said to be selected by the government as the co-chair of the TFTF because of their leadership on the file, credibility and ability to collaborate with all stakeholders. At the time the Heart and Stroke Foundation ran the "Health Check" food labelling program, which partnered with food companies and encouraged product reformulations to meet pre-determined nutrition criteria. The Heart and Stroke Foundation could have refrained from lobbying out respect for the work group process, or under the assumption that their influence was already strong and prominent. Also, the results do not capture all attempts to lobby and as such, various organizations may have made requests to meet with government officials and been declined or ignored. In addition, there have been limits placed on lobbying for charitable organizations in Canada. In order to maintain charitable status granted by the government (Canada Revenue Agency) an organization must "devote no more than 10% of its resources – including its financial assets, staff, volunteers, directors, premises, and equipment – to political activities, and these activities must be non-partisan and connected and subordinate to the charity's purposes."[173] However, such limits do not exist for private industry and each corporation can use any amount of resourcing to lobby the federal government. It is unclear if these limits restricted and held back the health sector, which is largely comprised of charitable organizations. It would be useful to capture how close each charity gets to the 10% allocation limit and determine whether there is legally more opportunity for lobby activity. Knowledge of health charity allocation to advocacy and lobbying is a key area of exploration that warrants further attention and could help to better understand the power dynamics at play.

Such lobbying limits on charities and the fact that budget expenditure between the food industry and the health sector are significantly different raises the issue of power within the policy subsystem and the growing influence of the CDOH. The CDOH, food politics and broader public health literature describes the unfair and unequal distribution of power, resources and influence between public health and unhealthy commodity industries (tobacco, alcohol and food).[16, 125] This unequal distribution of power could impact access to government officials. According to the ACF, the power

struggle between coalitions often impacts which coalition is triumphant in securing policy adoption.[20] In these cases, greater resources, greater ability to lobby and greater social influence could explain why the food industry's policy preferences were adopted over those recommended by the health sector.

Framing and subject matter are important areas of analysis because they often allow for a message to resonate with a political ideology.[25] The food industry demonstrated a wide range of subject matters from health, agriculture, industry to consumer issues. This may have made government officials more receptive to accepting meeting requests and may have enabled the coalition more opportunities to frame their message under a political ideology, interest or value that was more highly regarded by the government audience. For instance, it is often said that conservative governments value the economy and business development over social issues.[25] The industry more often used those frames and subject matters in their messages, and this could have both opened the door for more meetings, and resonated with the political audience more so than "health" as a dominant issue. The same variation in subject matter is evident among the lobby entries for other stakeholder groups such as pharmaceutical industry, alternative health, and universities/think tanks who all had multiple subject matters embedded within their communication entries. On the other hand, the health and clinical stakeholders seemed to more narrowly focus on health as their primary subject matter. It is unclear if health and clinical organization attempted to bring in other relevant and diverse subject matters. Furthermore, it is unclear if such a focus on health lead to denied lobbying requests, which ultimately hindered their ability to meet with officials. These are areas worth exploring in discussion with stakeholders. During most of the case study, a conservative government was in power, and it is well documented that their values, beliefs and ideologies focused around economic growth and opportunity. As such, the government may have been more inclined to receive and communicate with organizations who framed their lobbying request around subject matters like industry, trade, small business, and agriculture.

In assessing the levels of government officials lobbied, it can be presumed based on political science theories including the ACF that the main decision-making power is held centrally in a government by key high-level officials. In the case of Canada, those officials would be the Prime Minister and their office (PMO), Ministers, parliamentary secretaries and senior civil servants/bureaucrats. Results showed that the food industry was most successful in meeting with PMO, Ministers, parliamentary secretaries and senior civil servants/bureaucrats. Again, this finding could explain a high level of influence granted to the food industry and the resulting voluntary policies. The majority of the meetings reported by health and clinical groups were with MPs or Senators. The level of influence among MPs and Senators is lower and likely dispersed across political parties which means those

being lobbied may have little control or power in the policy making process. While the health and clinical groups had more communications with MPs and Senators, such meetings may have been less influential in changing the course of action for the government in power. Health and clinical groups could be viewed as having less political "clout" or power, a concept described in the political science and ACF literature which describes that governments give more weight to donors or high profile stakeholders including companies who are large employers and might also align with the government's policy beliefs and underlying values.[135] In these instances, perhaps physicians, highly published and awarded researchers along with executive members of health organizations could offer more "weight" and influence in government meetings over lower level staff members tasked with advocacy.

It is also unclear as to whether the health and clinical groups, along with alternative health stakeholders attempted to meet with high level government officials, but were denied, ignored or meetings were passed down to a lower level. This is an area worth assessing as part of stakeholder interviews and analysis and would be insightful to understand challenges faced in lobbying and influencing the policy process.

When comparing the lobbying timeline against key milestones in the trans fat and sodium reduction policy processes, several links can be formed. In 2011, the opposition motion to ban trans fat failed to pass through parliament and the sodium work group was prematurely disbanded by the government during its mandate to monitor progress on the food supply. In 2010, leading up to this, the food industry reported almost six times (19 vs. 112) greater the number of communications than the health and clinical sector. Similarly, in 2011, the food industry had 8.5 times more the number of communications compared to the health and clinical stakeholders. Many of the food industry meetings during this time included subject matter like consumer issues, agriculture, industry and health. These subject matters may have served as narratives and framing to influence the government to vote against trans fat regulation and disband the sodium work group.

In 2012 and 2013 the health and clinical groups demonstrated lobbying exertion that was closer in scale to that of the food industry. The food industry still outnumbered the health sector with regard to number of officials lobbied, but there appears to be additional resourcing put into lobbying among the health sector. It was during this time though, that Bill C-460 to adopt the Sodium Reduction Strategy was proposed by an opposition MP. In 2013, it was voted down in parliament and in the time leading up to the vote, there appears to be a spike in food industry and alternative/health food industry lobbying of MPs. This may have been a targeted effort to strike down a bill that would place restrictions and limits on the use of sodium in the food supply.

It should be noted that trans fat and sodium may represent a very small proportion of lobby communications because the Registry of Lobbyists changed to pre-determined subject matter selection in early 2010, meaning details around nutrition and health issues subject matter would no longer be entered in lobby communication tracking.

Limitations

The lobby analysis gave insight into how various stakeholder groups worked to influence the government throughout the trans fat and sodium reduction processes, however the Registry of Lobbyists has some limitations which may reduce ability capture a clear picture of power dynamics and government decision making. The most limiting of factor is the time constraints posed by data gaps. The Registry of Lobbyists came into effect in 2008 after passage of legislation to increase transparency in the public policy process. While information is available from 2008 onwards, the case study period started in 2004 meaning 4 years of stakeholder lobbying efforts and transactions were unavailable for analysis. Another limitation is that the registry evolved over time with changes in regulation, creating variation in type of data collected and available for analysis each year and makes it difficult to compare trends over time. Furthermore, it is unclear if all lobbyist organizations only met these minimum standards or reported additional meetings that were outside the DPOH requirements. The Registry also lacked detail regarding subject matter of communications. Finally, there is no way to access the documents exchanged between parties and as such, the true content of the discussion along with the tone of communications or the specific strategies used by stakeholder groups to influence the government all remain unknown.

The researcher filed an Access to Information (ATIP) request for internal government documents which went unfulfilled during the time period this study was undertaken. The content of the lobbyist communications could have been enriched through the application of ATIP results which could have included meeting requests, emails between lobbyists and government officials, as well as briefing notes and government documents related to lobbying efforts and government decision making.

Lastly, the data collection for the Registry of Lobbyists ended in 2013. While including lobby communications through to the 2014 election and establishment of the new LPC government, it was deemed inappropriate because of the researcher's direct involvement with the advocacy efforts on trans fat and sodium starting in 2013. The researcher worked for the Heart & Stroke Foundation as a Senior Manager of Health Policy and met with various political and government officials to influence the LPC platform and government policy. It was deemed more appropriate to assess and capture the policy making process and decision-making context before the researcher became directly involved in the field.

Conclusion

This is a novel area of research and as such, sets the stage for future investigation into this area. The wide range of variables considered in analysis enables a thorough application of existing political science frameworks such as the ACF. And while Canada is fortunate to have the Registry of Lobbyists as a means to keep governments accountable and transparent as related to stakeholder influence and decision making, this research demonstrates that much remains unknown given the large data gaps in the registry. This suggests that further detail and transparency in lobby registries could improve not only research findings and application, but the democratic processes of government decision making.

5. Results: Analysis of stakeholder interviews on the sodium and trans fat reduction policy processes in Canada

5.1 Introduction / overview of this results chapter

This results chapter is in manuscript style and presents the results of the stakeholder interviews. The stakeholder interviews and accompanying analysis use a qualitative approach to clarify and understand the perspectives and experiences of those involved in the trans fat and sodium reduction policy processes. In supplement to other methods, this part of the thesis study aims to understand the contextual factors and stakeholder dynamics that influenced the government. The main contextual factor discussed in this manuscript is the use of evidence in trans fat and sodium cases, and the study assesses how evidence discordances by various stakeholder groups may have affected government decisions.

5.2. Article to be submitted for publication

5.2.1. Article cover sheet

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RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	394118
First Name(s)	LESLEY
Surname/Family Name	JAMES
Thesis Title	THE POLICY MAKING PROCESS FOR TRANS FAT AND SODIUM REDUCTION STRATEGIES IN CANADA: EXPLORING STAKEHOLDER INFLUENCE THROUGH A DECADE OF VOLUNTARY AGREEMENTS WITH THE FOOD INDUSTRY
Primary Supervisor	PROF CÉCILE KNAI

PAPER TITLE: "A DECADE OF DISCORDANCE: EXPLORING AND ASSESSING THE ROLE OF EVIDENCE BY VARIOUS STAKEHOLDERS IN THE TRANS FAT + SODIUM REDUCTION POLICY PROCESSES IN CAN

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?			
When was the work published?			
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion			
Have you retained the copyright for the work?*	Choose an item.	Was the work subject to academic peer review?	Choose an item.

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SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	CANADIAN JOURNAL OF PUBLIC HEALTH
Please list the paper's authors in the intended authorship order:	JAMES L, BROWN K, POTVIN KENT M, LOCKE K, RAINE K, KNAI C.
Stage of publication	PREPARATION NOT YET SUBMITTED

SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	CONDUCTED RESEARCH: research design. -data collection -data management -data analysis + application + write up and editing

SECTION E

Student Signature	[redacted]
Date	October 29, 2021

Supervisor Signature	[redacted]
Date	29.10.21

Title: A decade of discordance: Exploring and assessing the role of evidence by various stakeholders in the sodium and trans fat reduction policy processes in Canada

Authors: James L, Brown KA, Potvin Kent M, Lock K, Raine K, Knai C.

Abstract

When Canada was faced with high levels of sodium in trans fat intake which put the population at risk for non-communicable diseases, the federal government adopted voluntary measures to reduce consumption of these harmful food ingredients. These voluntary approaches were in contrast to the recommendations as proposed by the government's stakeholder advisory committee which suggested regulatory measures as the most effective lever. This study investigates the policy making processes around trans fat and sodium reduction and assesses how evidence was used and misused (discordances) to shape the adoption of the government's voluntary approaches. Using key informant interviews and document review, two theoretical frameworks (Advocacy Coalition Framework and Evidence to Policy Process) are applied to analyse data and interpret findings. In the trans fat case, public health stakeholders were able overcome a variety of discordances that threatened to hinder policy adoption by adapting their policy analysis and recommendations. This led to an almost ideal evidence to policy process. On the other hand, the sodium reduction case was plagued with numerous discordances which created wide disconnects in how evidence was applied to the situation and how the government responded to the public health issue. The use of evidence and the discordances it creates can explain the policy processes and resulting voluntary measures.

Introduction and Background

Nutrition-related diseases are among the leading causes of mortality and morbidity in Canada, with a high prevalence of chronic non-communicable disease (NCDs) such as cardiovascular disease (6.1%), diabetes (8.8%), and cancer (7.3%),[46] many of which are increasing in prevalence and occurring at younger ages because of dietary risk factors like consuming too much fat and sodium.[47, 48] It is believed that poor nutrition caused approximately 47,000 deaths in Canada during 2017 and has become a leading modifiable risk factor for premature death and disease.[44] The Government of Canada's plan to reduce population levels of trans fat and sodium intake begin with the establishment of two separate multi-disciplinary stakeholder committees, the Trans Fat Task Force (TFTF) and the Sodium Work Group (SWG).[6, 9] Each was comprised of health organizations, health professionals, food industry representatives, consumer groups and government officials. Informed by the best available evidence, both committees recommended policy in the form of monitoring and specific targets for the food industry.[6, 9] However, in both cases, the government chose voluntary

measures.[14] The trans fat reduction strategy included regular monitoring and public reporting, whereas the sodium reduction strategy was less transparent in sharing food industry progress with the public.[14] This paper explores the complex policy process around reducing trans fat and sodium intake in Canada while looking specifically at how stakeholders influenced government decision making and the contextual factors that may have led to the adoption of voluntary agreements between the government and food industry.

Methods

This study draws on stakeholder interviews and the analysis of key policy documents.

Key informant interviews

Key informant/stakeholder interviews were conducted from May 2014 – November 2016 using a purposive sample, with members of TFTF and/or SWG or those worked on the sodium and trans fat reduction files in government, heath organizations or media outlets while the TFTF and SWG were underway.

Forty-six interview invitations were made from December 2015 using email, organizational info-lines or via LinkedIn. Follow-up invitations were made 3 and 5 weeks later.

A topic guide was created to explore facilitators and barriers to the nutrition policy making process. It enabled interviewees to provide an unstructured description of their participation in the SWG and/or TFTF with probes related to power dynamics, group governance, science and the role of technical information, consumer pressure, and international momentum. Interviews were conducted by the researcher, recorded and then transcribed. Transcription was performed by the researcher (4/17 interviews) and Rev Transcription (13/17), a transcription service.

The coding framework for thematic analysis was deductive in that it was shaped by the researcher's understanding of the international literature on trans fat and sodium reduction policy processes. Thematic codes evolved as analysis progressed beyond the pre-determined themes found in prior literature. The overarching thematic codes used to categorize the findings were; the use and application of evidence, conflict of interests, media coverage, centralized power, behind the scenes lobbying of government, political ideologies, consumer demand, coalition building and impact of voluntary agreements. Thematic analysis was completed manually by the researcher and data was organized based on codes using an Excel spreadsheet. Based on the thematic analysis, the use and interpretation of evidence and data was the most dominant theme across stakeholder groups and between cases. As such, this article focuses solely on the role of evidence in the policy making processes.

Document review

Document review was conducted to gather background information about the TFTF and SWG processes including aims, objectives and policy outcomes. Additionally, TFTF and SWG background information served to capture which stakeholders were involved in the government appointed committees. Information from parliamentary debates and legislative proceedings then allowed for an overarching map of the policy process which provided an illustration of timelines and key milestones. Documents were found using Google as a search engine with the search terms "sodium reduction policy Canada" and "trans fat reduction policy Canada" and Government of Canada parliamentary databases using search terms "trans fat" and "sodium". Reviewed documents include government reports produced by Health Canada and the Standing Committee on Health on trans fat and sodium population intakes and reduction efforts, parliamentary debates and bills, NGO reports and web sources, scientific literature, grey literature, food industry reports and media pieces. Government documents and parliamentary debates were publicly available online. The findings from the document review, enabled a better understanding of potential advocacy coalitions that formed, lead to the further development of a discussion guide for interviews, and provided a preliminary list of interview participants based on the TFTF and SWG membership. Data from the documents was organized using a temporal approach and coded based on case, themes and stakeholder perspectives.

The researcher also requested other non-public government documents which relate to trans fat and sodium. Canadians are able to access all internal government documents through the Access to Information Program (ATIP) although some confidential content can be redacted. An ATIP was filed January 16, 2016 with the following inclusion criteria: any and all briefing notes to and from the Assistant Deputy Minister (ADM) or Deputy Minister (DM) related to trans fat reduction starting January 2000 to present; any and all briefing notes to and from the ADM or DM related to sodium reduction starting January 2002 to present; any and all briefing notes to and from the ADM or DM related to the Sodium Work Group starting January 2007 to August 2012. The ATIP was completed and the resultant files were sent to the researcher in December 2019. The files received included over 100 pages of government correspondence to and from the Health Canada ADM or DM. Much of the briefing note content and correspondence was redacted due to government confidentiality and privilege making data sparse. Political correspondence (that from the Minister or Minister's office) was minimal. Where analysis was possible, the same coding framework used in the stakeholder interviews was applied, and dates of key correspondence around government decision making within the policy processes were added to the timeline map. Another ATIP report on the trans fat and sodium reduction processes was released to the research from the Centre for Science in the

Public Interest – a health organization involved in the policy processes. This report included fewer redactions and the same coding and analysis was utilized.

Two theoretical frameworks shaped data collection, analysis and interpretation. First, the Advocacy Coalition Framework (ACF) was used to guide the analysis of stakeholder engagement and behaviour within the trans fat and sodium reduction issues and each advocacy coalition/policy actor (food industry, health community, government, media) is utilized as a unit of assessment (Table 8) within the two policy cases.

Table 8. Stakeholder groupings and membership as guided by the ACF

Stakeholder grouping	**Members**
Health community	Health or professional clinical organizations, academics/researchers, health care providers, scientists and the scientific health community including journals and research funders
Food industry	Food producers, manufacturers, processors, retailers, food service outlets, restaurants and all their associations
Government	Elected officials including Members of Parliament (MP), and the party leader (Prime Minister) and Ministers of the political party in power. While in technical terms, MPs of the opposition parties are not considered "government" rather members of the House of Commons they are included in this grouping. Grouping also includes the political staffers who work for elected officials and bureaucrats who are not in political posts, but rather work for a specific government department (Health Canada).
Media	Canadian newspapers, magazines, and broadcasts (TV and radio).

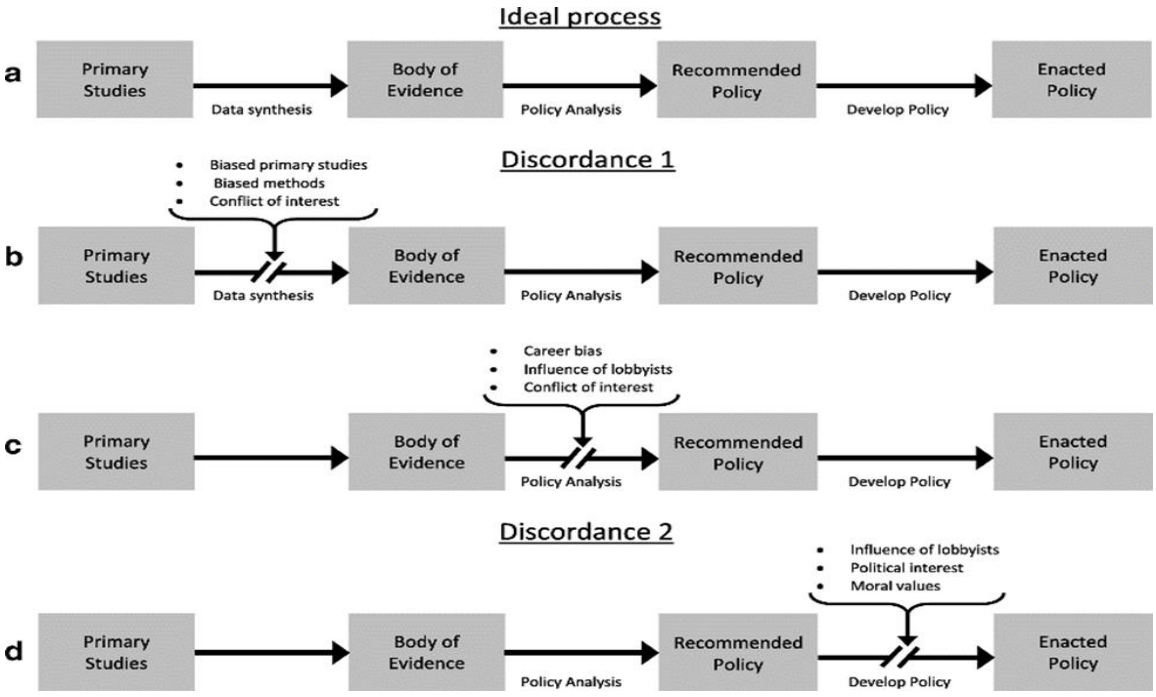
Next, the Malekinejad et al framework was used to present the findings and illustrate how each stakeholder group used and interpreted evidence in the policy cycle which often created frictions in achieving evidence-based nutrition policy. These two frameworks are further explained below.

Theoretical foundation

First, the ACF was employed, as it is designed to makes sense of complex public policy processes which involve multiple actors, levels of government and outside factors[147] including the role of interest groups with both common and opposing policy beliefs. Because the ACF purports that the

uses of evidence and the conflict that emerges as a result can shape the policy process, which aligns with evidence being an underpinning theme majority of the results from the key informant interviews and documents, the ACF is well suited to guide this research. According to the ACF, technical information and evidence are often criticized and politicised by each advocacy coalition (grouping of stakeholders with similar policy beliefs and goals) while policy learning and influence occurs in a coalition through the unique lens of their associated beliefs.[170] This leads to different interpretations and utilization of evidence and events compared to another coalition within the policy subsystem.[148]

Figure 2. Evidence to Policy Development framework



Source: Malekinejad et al , 2018 [40]

Second, the researcher also applied a framework to the findings from the stakeholder interviews and document review including the ATIP report. The framework by Malekinejad et al (Figure 2) specifically accounts for the role of evidence in the public health policy making process and proports that discordance can occur because of both subjective and objective factors during the public health policy making process.[40] The authors categorize 3 different types of discordance "that are unrelated to the value of the evidence itself, and can inhibit the use of research evidence" in health policy making.[40] Figure 2 illustrates the ideal role of evidence in the policy making process, and the various types of discordances that can hinder evidence-based policy making in public health policy. The aim of this additional framework is to "facilitate understanding of an evidence-based decision-making model in the context of public health interventions and how knowledge of evidence synthesis (or

lack of this knowledge) may influence decision-making."[40] Figure 2 classifies the ideal process as well as types of discordances which were used to categorize the data into various disconnects between evidence and policy making in the trans fat and sodium reduction cases. In Discordance 1b), a stakeholder (often public health) makes a recommendation for an intervention, but the intervention lacks "high quality, rigorously synthesised research evidence" to support its adoption.[40] Discordance 1c interferes with the policy making process by compromising the policy analysis whereby stakeholders "may selectively focus on favourable outcomes of certain interventions or even 'spin' review evidence to promote an certain agenda" which could be the result of conflicts of interest.[40] Discordance 2d happens in two scenarios both influenced through "social, cultural and other external considerations (e.g. the influence of special interests) that compete on equal (or even stronger) terms with research evidence."[40] In the first scenario, public health organizations recommend a policy solution that is backed with strong evidence but the intervention is rejected or delayed by policy makers. [40] In the second scenario, there might be inconclusive evidence for the policy measure but the government proceeds with approval and adoption because of pressure felt by constituents or special interest groups.[40] While the Malekinejad et al framework was developed to account for the use of evidence by mainly public health stakeholders, it was applied broadly to assess discordances by all stakeholders (government, food industry, etc.) at all stages of the evidence to policy development process, and reflected upon in the Discussion.

Results

In total, 17 interviewees were conducted which included 4 civil servants, 4 industry representatives, 1 consumer group representative, and 8 health organization and academic representatives.

Trans fat: Overcoming discordances to enable an "ideal" policy process

Health stakeholders reported leveraging the existing evidence on the harms of trans fat and the consumption levels in Canada to their advantage and created a compelling case for government policy action. Interviewees expressed that all health community stakeholders not only felt that the evidence base was strong, and as one interviewee stated they

> *believed that there was no safe level of trans fat consumption, and therefore should be eliminated entirely from the food supply.*

The food industry also understood and agreed with the strength of the evidence base, recognizing the link between trans fat and health harms. However, it was reported that after the data synthesis and policy analysis process, when the government was in a position to decide and adopt the policy recommendation, the government stalled on their response to the TFTF report. Key informant

interviews suggest that the food industry may have engaged in behind the scenes lobbying to discredit the evidence and the adoption of the TFTF regulatory recommendations. A health interviewee described that

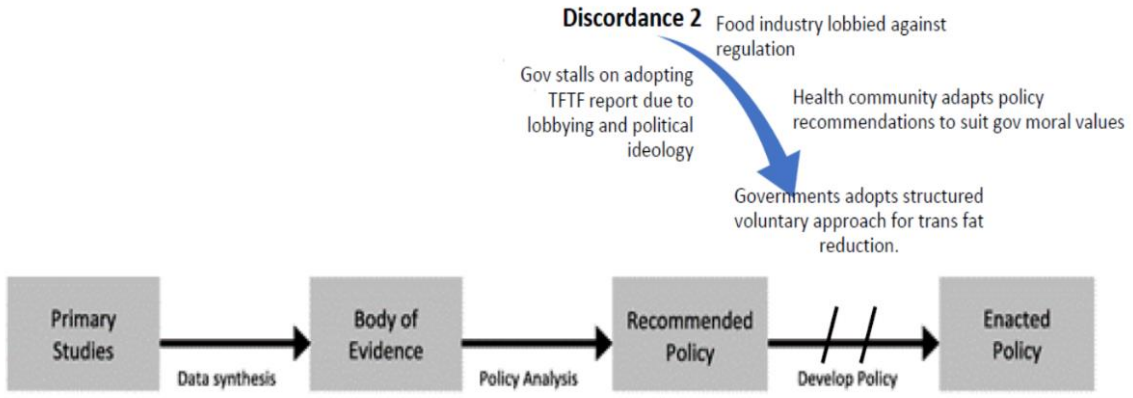
> *the commercial industry was prepared to acknowledge that there might be some evidence [linking trans fat to heart disease] but certainly their perceptions of the approaches to addressing it and the evidence around the effectiveness of the approaches was controversial.*

[redacted] interviewee expressed that while

> *there was a public approval by the [food] industry… I'm certain there was private lobbying against the adoption of the report by industry…. they realized that if they didn't sign off on it, it would be a public relations nightmare for industry, so they had to be perceived as being supportive of it and then would privately lobby against [the evidence] and urge the government to not regulate.*

Some food industry representatives denied any behind the scenes lobbying to block the TFTF report adoption, while others said lobbying was a standard practice and one called it merely "*the name of the game.*"

Figure 4. Trans fat reduction policy process as applied to Malekinejad et al evidence discordance conceptual framework.



Source: adapted from Malekinejad et al (2018) [40]

As for the government, a shift in power (from Liberal minority to Conservative minority) during the time of the TFTF stakeholder policy negotiations meant there was a change in political ideology of the decision-making elected officials. According to government and health sector interviewees, the newly formed Conservative government did not view the evidence and data around trans fat reduction policies as warranting comprehensive regulation, even though this was the recommendation of the TFTF. The government instead "sat on the TFTF report" and delayed on

formulating an official public response with a plan of action according to a health stakeholder interviewee. A government official stated in an interview that in relation to the trans fat reduction program that the government

> *believe[s] in free will and determinism and they have the idea that every human being is the author of their own fate and that people choose badly and eat badly and drink more than they should and smoke. Those are individual level faults and that's why people get sick and die earlier.*

Health stakeholders took the issue and the lack of government action public in an effort to create more public pressure and political will. Heart and Stroke Foundation recognized that baked goods in Canada contained dangerous levels of trans fats and leveraged this evidence in a public advertisement (Figure 5) which used the image of an anniversary celebration cupcake with icing (a product documented to have very high levels of trans fat) with a candle and expressed that it had been 1 year since the TFTF report was released and there was still no government action. The advertisement along with a series of sub sequential similar advertisements were placed in high circulation newspapers and used food supply data to shame both the government and food manufacturers.

Figure 5. Advertisement published in media to showcase lack of government policy action

Source: Heart and Stroke Foundation of Canada (2007)

In addition to the application of evidence and data into media advertisements, interviewees from all stakeholder groups indicated that the media coverage on trans fat evidence was key to securing government action, as illustrated by a government official's views that there was

> *blame being placed... there was something in the [government] notion that this was something dangerous for the health and that's something that was industry produced. It's industry that's doing something bad for you, so government should protect you from this.*

While it seemed that special interest lobbying and an industry-friendly political ideology of the newly appointed government may have stalled and/or blocked adoption of trans fat reduction measures, the health community was able to overcome this attempted inaction 'discordance 2' (Figure 4) by adapting their recommendations to suit the conservative government's values and priorities. Working together, a senior bureaucrat and health organization devised a novel trans fat reduction solution that would be appealing to the new industry friendly government and that would align with their political ideology and moral values. Using a voluntary approach, the stakeholders proposed that the government maintain their focus on information sharing and education of consumers, with increased government monitoring and reporting of information about trans fat content in the food supply. In autumn 2007, the government adopted this "structured" voluntary agreement which included frequent monitoring and transparent reporting on food product categories and companies. While discordance 2 stalled government policy adoption on regulations, the public health community adjusted their policy recommendations to suit the values and ideals of the new government and concerns of other stakeholders.

Throughout the trans fat monitoring program, public health advocates were said to work strategically with media, tipping off journalists about trans fat monitoring reports or new research studies. That data and evidence were then disseminated at key and opportune times to retain the issue at the forefront and keep food companies compliant with trans fat targets. A food industry interviewee described that when new monitoring data was released, the media framed the evidence to villainise the companies that were not meeting the targets and according to the interviewee the media's messaging implied "*company A doesn't care about the health of the population"*. In this scenario, the application of ever-evolving primary data and evidence supported by the media drove the ideal evidence to policy development process as illustrated by Malekinejad et al.

The government indicated that at the end of the Trans Fat Monitoring Program they would determine whether formal regulation was warranted however, the food industry again employed evidence discordance to attempt to stall policy adoption. At the end of the monitoring program, 25% of pre-packaged food products still contained unacceptable levels of trans fat although the food industry considered it a success that 75% of foods met the reduction targets.[174] In May 2010, when the government further studied the trans fat issue in light of the TFTF report and the results of the Trans Fat Monitoring Program food industry stakeholders testified that due to the lack of data about population consumption (primary studies), it would be premature for the government to act on regulations.[174] While the food industry demonstrated initial public agreement with the science that linked trans fat to poor health outcomes during the TFTF negotiation process, they later raised concerns about the population intake data which was over 7 years old. The food industry questioned

whether trans fat intake in Canada was as high at the present time, as it once was and used this primary data gap to create doubt about whether trans fat consumption was a worthy public health issue requiring regulatory and government intervention.

It was stated by Food and Consumer Products Canada:

> *Moving forward, we propose an accurate assessment of Canadians' intake of trans fats against the World Health Organization's recommendation of less than 1% of total caloric intake. This should be done before we consider an expensive legislative process... As I mentioned earlier, the assessments of products in the marketplace are reflective of the marketplace in 2008, and we need to update.*[174]

There is reason to suggest the government was torn between continuing a voluntary agreement or mandating regulations. According to Access to Information Act (ATIP) disclosure released to Bill Jeffery from the Centre for Science in the Public Interest and shared with the researcher, it seems that upon assessment of the evidence base and monitoring results, then Minister of Health, Leona Aglukkaq decided that Health Canada "promulgate regulations to ban the use of partially hydrogenated oil."[14] More specifically, speaking notes dated September 2009, prepared for the Minister of Health declared the government

> *intends to regulate the levels of trans fat in the Canadian food supply to protect all Canadians from high trans fat intakes and to ensure there is a level playing field for industry.*[80]

However, ATIP documents also suggest that the Minister's decision and intentions to regulate trans fats in the food supply were "abruptly halted by the Prime Minister's Office."[14] Instead of leveraging the fourth set of trans fat monitoring data to demonstrate the need for regulation civil servants were

> *instructed to release the fourth set of trans fat data with no announcement on proposed regulations.*[175]

According to a government official interviewed, this outcome is unsurprising given the political ideology, and it was explained that

> *you have the Minister of Health that could believe something, then you have the [political] party. [The party] would never let [regulations happen] - even if the minister of health believes in it. It would be very difficult to obtain regulations.*

And again, near the end of the CPC government's hold of power in 2012, when asked about population trans fat intake the Minister of Health publicly stated

> *I have instructed my department to continue its engagement with stakeholders to identify the challenges and how best to overcome them without adding a regulatory burden. We will continue to use tools such as the Canada Food Guide and the Nutrition Facts Table to provide Canadians with the information they need to make informed choices about the amount of trans fats in their food.*[80]

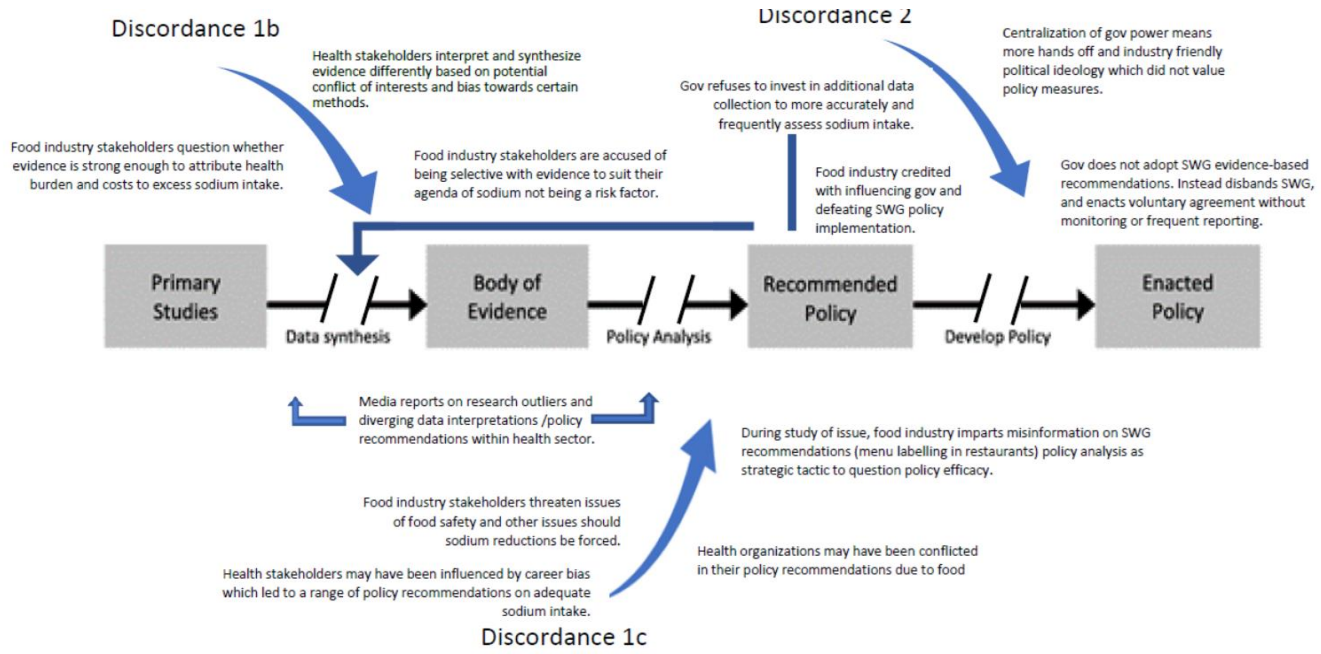
Sodium: An evidence to policy process plagued with discordance

Interviewees across all stakeholder groups reported that many food products were impacted by efforts to reduce sodium content in the food supply and therefore a wide range of food sector stakeholders were trying to influence the policy development process. Various interpretations of the evidence led to discordance among the health community who demonstrated differing levels of understanding about sodium and its health impact. This resulted in multiple health stakeholder camps or coalitions based on their varying interpretations of the evidence and beliefs in policy solutions. One group believed that the policy solution should be grounded in lower sodium limits (a limit of 1300-1500 mg/day) while according to a health interviewee there was an opposing view which believed

> *you don't have to go that low, there's no evidence to suggest that.*

[redacted] Furthermore, policy analysis within the evidence to policy cycle could have also been affected by career bias (evidence discordance 1c), with researchers involved in sodium reduction discussions more likely to draw on the conclusions of their own research for assessments of the evidence base. Figure 6 below illustrates the various discordances throughout the sodium reduction policy process.

Figure 6. Sodium reduction policy process as applied to Malekinejad et al evidence discordance conceptual framework



Source: adapted from Malekinejad et al (2018) [40]

The SWG arrived to a consensus, recommending that Canadians strive for no more than 2,300 of sodium mg/day.[9] However, according to a health interviewee the disagreement across the health sector was reported as being

> *so harmful it just impeded action across all sectors of society unfortunately.*

Moreover, government and health interviewees reported that confusion around nutrition and sodium science was counter-productive, with a government interviewee expressing that

> *polarized nutrition results in the media confuse people. They don't create critical appraisal and [engage the public in appropriate] dialogue.*

It was also conveyed that some health organizations' interpretations of evidence and their associated policy beliefs regarding sodium reduction may have been a result of bias and potential conflicts of interest from funders (Figure 6, discordance 1b/c). Three health organizations who were members of the SWG - Dietitians of Canada, Heart and Stroke Foundation and Canadian Council of Food and Nutrition were all reported to benefit from food industry funding.[14] One of these organizations stated that their industry ties created a public relations dilemma, and required a great

deal of stakeholder management in keeping the food industry partners appeased during the sodium reduction policy making process. One of the largest health organizations was criticized by [redacted] interviewee who indicated that the Health Check (nutrition labelling program) brought in food industry funding to the health organization, perhaps influencing their interpretation of the evidence or policy analysis, and explained

> *unfortunately, Heart and Stroke Foundation were not strong advocates on sodium at that time and the reason for that in my opinion is that [they] got conflicted by their health check program.*

In addition, discrediting the evidence also emerged as an important strategy among food industry interviewees, with one voicing concerns about the link between sodium and hypertension and saying

> *I don't necessarily think sodium intake in the Canadian population was that responsible for whatever health outcomes that were deemed to be a problem.*

This effort to discredit the evidence was substantiated by [redacted] interviewee who reported that the food industry disseminated a

> *report published by the Canadian Medical Association Journal in the 1990's (1999) saying that the relationship between sodium and blood pressure was overstated, and that I guess had some currency with some policy makers.*

Other food industry strategies employed during the SWG negotiations were threats about compromised food safety, technical impossibilities, consumer taste preferences, and impact on sales/employment in sodium reduction – these are the same narratives/hinderances found in the existing literature. An interviewee described that a food industry representative used a recent listeria outbreak in food products to create fear about sodium reduction and the safety standards necessary to maintain a safe food supply. [redacted]

After the SWG report was submitted to the government, the members expected they would be involved with the data collection, monitoring, and reporting on food industry progress, similar to the process in trans fat reduction. Instead, the government disbanded the SWG and established an

external expert advisory committee structure – according to health stakeholders, the group was entirely made up of industry representative – because they did not want another outside body to be interpreting science on behalf of the government, have influence over their decision making or put forth recommendations that would be made public. A health interviewee explained that

> *the intention of the political masters [in disbanding the SWG] was to make these pesky experts go away… It smelled fishy. They weren't very big on experts.*

It was also explained that

> *there were remarkably few open windows [for public health to] influence policy work…. [which I] attribute partly to the onslaught of a new government… which was secretive. It doesn't consult and if it does consult, it does so behind closed doors, mostly.*

Interviewees indicated that this focus on industry interpretation of the science combined with a lack of openness to public health perspectives and recommendations resulted in a government sodium reduction strategy that did not align with the best practices as outlined by the health literature.

Guidance for the Food Industry on Reducing Sodium in Processed Foods was released by the government in 2012 and outlined the role of the industry, the public and the government in achieving population daily average intake of 2,300 mg.[108] The government did introduce "voluntary sodium-reduction targets for 94 food categories, but these were largely ignored by food companies and adherence was not publicly tracked by the federal government" as it was for the trans fat reduction program.[14] Health interviewees expressed that the government's failure to invest in monitoring and an overall lack of investment in population surveillance on food intakes may have been a strategic approach wherein a lack of updated data prevented the scope of the health problem from being clearly defined, and therefore the status quo was maintained.

In 2013, health stakeholders worked in collaboration with opposition parties to pass a Private Members Bill, forcing the government to implement the SWG report recommendations.[109] Part of the bill intended to legislate the implementation of menu labelling at food service outlets and according to a health stakeholder interviewee, during expert testimony on the bill, a popular restaurant chain created mock-up menus and added extra metrics instead of the basic calorie and sodium contents that were required in the bill. This misinformation related policy analysis tactic was used to mispresent the requirements of the bill, and to put into question whether the nutrition information on menus would ultimately confuse consumers, rather than empower them

(discordance 1c questioning policy efficacy). The bill was defeated and a food industry association took credit for preventing regulation on sodium reduction.[110]

Discussion

This study finds that in the case of both the trans fat and sodium reduction, voluntary measures were adopted instead of regulation, as recommended by the TFTF and SWG. Results from this study indicate that various discordances impacted the policy process and hindered the adoption of TFTF and SWG policy recommendations.

This study finds that the Canadian government failed to adopt evidence based policy measures due to Malekinejad et al's discordance 2 and influence from special interest groups.[110] The way stakeholders described the initial trans fat policy process in Canada most aligns with what Malekinejad et al describe as an "ideal" process in that overall, the primary evidence was strong, streamlined data synthesis was applied by all stakeholders and policy analysis led to consensus recommendations from the TFTF.

However, the voluntary agreement for trans fat reductions which was created and proposed by the health stakeholders and bureaucrats can be considered a strategic approach to overcome discordances that would have otherwise halted the policy process. Given that the only major discordance in the trans fat case related to government morals and political ideology, the proposal of an alternative policy solution that aligned with government values was likely easier to sell to the government. Both political science and public health policy research have shown that government political ideology is challenging to overcome and can be a major blockade in adopting public health nutrition policy and therefore, the creative solution generated by health stakeholders should be praised and considered as a model for other public health policy issues. On the contrary, had there been numerous discordances throughout the policy process, there may have been more opposition and resistance to addressing the public health issue at all. This situation may explain why sodium reduction outcomes and policy adoption was so vastly different.

The investment in trans fat monitoring and reporting along with the continued generation of data was deemed to be a facilitator of the nutrition policy process, continuously reminding the public and the government that the public health issue warranted attention. Such monitoring and reporting was also said to strengthen the trans fat voluntary agreement that may have otherwise been ineffective. While the TFTF evidence-based recommendations were not implemented, the alternative policy measures were considered moderately effective by the stakeholders interviewed.

On the other hand, the findings and numerous discordances displayed in the sodium reduction policy process case provide a sense of why the government did not adopt the SWG policy recommendations and why an informal voluntary approach without a policy for monitoring and reporting was adopted. These numerous discordances created fractions in the stakeholder recommendations on whether sodium was in fact a public health concern warranting government intervention. These "unwanted issues" as described by Malekinejad et al. of evidence discordance related to primary studies and evidence synthesis were also found as barriers to sodium policy development in the broader literature[11] where the evidence to policy process is described by academics as a "bumpy road to policy."[11] Similarly, the wider literature on nutrition policy development indicates that difficulties with interpretation, application and analysis of the science have been hinderances to policy adoption and effective policy implementation.[15, 36, 176] The food industry contributed to further discordances around policy analysis, claiming technical challenges in sodium reduction measures. Malekinejad et al. refer to this as spinning evidence to suit one's agenda.[40] Policy analysis may have been further impacted through discordance 1c with unsubstantiated policy implications proposed by the industry. Again, this was a similar industry opposition tactic used in other jurisdictions both in sodium reduction and other nutrition related issues.[15, 36, 176, 177] Lastly, according to health stakeholders, the lack of continuous and time specific monitoring, data collection and public reporting of that data was the major downfall of the sodium reduction voluntary approach which differs from the trans fat voluntary program where data and evidence drove the issue forward during the policy implementation phase.

Finally, the government's lack of investment in primary research and data generation created another type of discordance that prevented the health community from keeping the issue on the political agenda and demonstrating an urgent need for government intervention. Stakeholders believed this tactic to be a strategic tactic the government used to control the issue's narrative and justify their lack of policy action. While Malekinejad et al. do not classify this tactic as a specific discordance, this research finding suggests that a 3rd discordance could be added to their framework and be considered an extension of government values and political ideology.

While health stakeholders were able to overcome the discordances which interjected the trans fat reduction policy process, it is understandable that the greater number and wider range of discordances in the sodium reduction case and the disbandment of the SWG meant it was more difficult to generate alternative policy solutions that might appease the government's values and other stakeholder concerns. While the creation of an alternative policy measure worked well in the trans fat reduction case, the feasibility of such an approach within the sodium reduction process seems unlikely. Instead, the government proceeded with a voluntary measure without monitoring

and reporting. A recent assessment of that industry voluntary agreement as part of Canada's sodium reduction strategy and sodium intakes among the Canadian population found the impact to be minimal with limited effectiveness.[8]

Limitations

First, the sample of interviewed stakeholders was not fully representative of all stakeholders within the sodium and trans fat reduction cases, as this would have been beyond the scope of the study. Second, given that this study looked retrospectively at the policy process during the 2004-2014 time frame, the time lag in interviews may potentially have led to some key informants missing details of events that occurred during the SWG and TFTF processes; however the interview process (sufficient and appropriate prompts) helped mitigate this risk. Finally, it should be noted that the lead author was employed at a Canadian health organization involved in both the sodium and trans fat reduction processes; however a careful process of reflexivity and distance built into the qualitative research process helped to mitigate the risks involved with this proximity to the subject matter.

Conclusions

The trans fat and sodium reduction policy cases in Canada during the mid 2000's to mid 2010's provide a useful illustration of how evidence can be discorded (misused, misinterpreted, and mis-aligned to political values) which can hinder effective nutrition policy advancement. Evidence discordance was overcome in the trans fat reduction policy process, because of flexibility and adaptability among health stakeholders and the resulting policy adoption for trans fat was a moderate success. However, too many evidence discordances interfered with the sodium reduction policy process in Canada, and as such, no formal policy measure was introduced by the government. As such, sodium intake in Canada remains harmfully high and remains an area that public health and governments need to address. The creation of an alternative policy measure to suit the political ideology of the government provides an interesting suggestion for how public health can better utilize incremental policy advances when faced with opposition. This study provides a useful example of how to categorize and apply the unwanted evidence discordances in public health policy making and can support those working on nutrition issues to predict and better understand opposition to policy adoption from both stakeholders within the policy subsystem and the government as they make policy decisions.

6. Results: Analysis of trans fat and sodium reduction media coverage in Canada

6.1 Introduction / overview of this results chapter

Political science and public health policy literature widely acknowledge that the media plays a key role in shaping the policy process. This chapter uses a media analysis of trans fat and sodium media coverage in Canada to illustrate how the two nutrition issues were portrayed in the media, and how the media as both a stakeholder and a strategic tactic leveraged by other stakeholders could have influenced the policy process and government decision making. The methods and findings of this study complement the application of the ACF as the overarching guide of this thesis research and also enable verification of findings from other methods such as the stakeholder interviews.

6.2 Article to be submitted for publication

6.2.1. Article cover sheet

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RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

PAPER TITLE: "MEDIA COVERAGE OF TRANS FAT AND SODIUM REDUCTION IN CANADA:

SECTION A – Student Details

Student ID Number	3941118
First Name(s)	LESLEY
Surname/Family Name	JAMES
Thesis Title	~~Title~~ ASSESSING HOW MEDIA FRAMING AND STAKEHOLDER VOICES SHAPED THE POLICY PROCESS" THE POLICY MAKING PROCESS FOR TRANS FAT AND SODIUM REDUCTION STRATEGIES IN CANADA: EXPLORING STAKEHOLDER INFLUENCE THROUGH A DECADE OF VOLUNTARY AGREEMENTS WITH THE FOOD INDUSTRY
Primary Supervisor	PROF CÉCILE KNAI

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?			
When was the work published?			
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion			
Have you retained the copyright for the work?*	Choose an item.	Was the work subject to academic peer review?	Choose an item.

*If yes, please attach evidence of retention. If no, or if the work is being included in its published format, please attach evidence of permission from the copyright holder (publisher or other author) to include this work.

SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	CANADIAN JOURNAL OF MEDIA STUDIES
Please list the paper's authors in the intended authorship order:	JAMES L, BROWN K, POTVIN KENT M, LOCKE K, RAINE K, KNAI C
Stage of publication	~~Choose an item.~~ PREPARATION - NOT YET SUBMITTED.

SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	CONDUCTED RESEARCH: research design. -data collection -data management -data analysis + application + write up and editing

SECTION E

Student Signature	[redacted]
Date	29 October 29, 2021

Supervisor Signature	[redacted]
Date	29.10.21

Title: Media coverage of trans fat and sodium reduction in Canada: assessing how media framing and stakeholder voices shaped the policy process

Authors: James L, Brown KA, Potvin Kent M, Lock K, Raine K, Knai C.

Abstract

Public health media advocacy is said to play an important role in the policy making processes, enabling stakeholders to share their perspectives and advance their policy goals to influence the government. This paper assesses how the media framed trans fat and sodium reduction issues in Canada and how stakeholder voices were included in the media coverage. A multi-component media analysis was conducted using three complementary approaches: 1) a qualitative framing media analysis of trans fat and sodium related narratives conveyed across the media; 2) a qualitative assessment of stakeholder quotes in media; 3) thematic content analysis. Results illustrate that health and cultural or ideological framing were most often used to support trans fat and sodium reduction and frames around practicality were most often used in opposition. Health stakeholders were most often quoted across both trans fat and sodium articles. Thematic analysis indicated that regulation was covered more often in trans fat (63%) than sodium articles (40%) and almost half of all articles included nutritional content of certain foods. These finding aligns with policy outcomes where a structed voluntary monitoring programme was adopted for trans fat reduction, but a less formal and structured voluntary agreement was implemented for sodium reduction. It also suggests that media often depicted these nutrition issues as individual problems that can be addressed by picking the right food, as opposed to systemic problems with the food industry that need to be addressed through policy measures.

Introduction

In the early 2000's, high levels of trans fat and sodium intake in among the Canadian population put people at risk for a variety of non-communicable diseases (NCDs) including hypertension, heart disease, and stroke which at 34% of all-cause mortality was the leading cause of death.[5, 178] In 2005, because of mounting pressure among the public health community, calls from international health agencies, progress in other parts of the world and strong political will among opposition parties, trans fat reduction make it onto the federal government's policy agenda.[5] The government then established an expert stakeholder group called the Trans Fat Task Force (including food industry, health groups and professionals along with consumer representatives) tasked with developing a trans fat reduction strategy for the government.[6] Similarly, in 2007, after calls from the public health community to reduce sodium intake among the Canadian population, the federal government

created another expert stakeholder group (Sodium Work Group) to create a sodium reduction strategy for the country.[9]

In the case of both trans fat and sodium reduction, the federal government decided against the adoption of policy measures as per the recommendation of the advisory groups.[14] Instead, the government adopted voluntary measures that were thought to favour the interests of the food industry over the health of the population.[14, 72] This led to controversy as the voluntary measures adopted did not align with the consensus recommendations from the multi-sector stakeholders expert advisory groups. Such controversy as well as the public disclosures of trans fat progress from the structured voluntary program, the heated debate on science linking sodium to poor health and disbandment of the SWG were issues often covered in the media according to stakeholder interviews.

Public health and media research is a growing area of exploration, and at a stage in which wider and deeper analysis can better serve our understanding of media advocacy.[27] According to Foley et al. "analyzing media is therefore a research endeavor of significant value to a wide range of health disciplines, including public health."[179] Canadian research has looked at public health policy and media coverage on in relation to the commercial determinants of health (CDOH) such as tobacco, sugary drinks and other chronic disease prevention initiatives. Similar to the gaps in the wider literature, there is a lack of research specifically on trans fat or sodium. The lack of research demonstrates a gap in the wider knowledge base and an opportunity to provide Canadian specific context to the evidence.

As such, this study aims to assess how the media portrayed the trans fat and sodium reduction issues in Canada, and how the media coverage including framing and stakeholder perspectives may have influenced government decision making on each issue.

Methods

A multi-component media analysis was conducted of the trans fat and sodium reduction policy processes, using three complementary approaches: 1) a qualitative framing media analysis of trans fat and sodium related narratives conveyed across the media; 2) a qualitative assessment of stakeholder quotes in media; 3) thematic content analysis.

Data collection

A search of Canadian print (digital) media stories including trans fat and sodium was conducted on Google News, a search tool commonly used in other public health media analysis studies.[163, 166, 180, 181] Digital media articles were the main focus of data collection because they allowed for consistent

analysis of text across media outlets, also common across media research. Only a small fraction of media articles were behind paywalls and therefore the researcher paid for a subscription to one national newspaper and accessed other articles using a trial subscription.

Data collection timeframes start when trans fat appeared on the federal political agenda (January 1, 2004) and ends August 31, 2015 (the end of parliament before a shift in government). This timeframe includes sodium's entry on the political agenda in 2006. The keywords "trans fat*" and "sodium" or "salt" were used as search terms and all articles that contained the key words were assessed. The initial screening removed any non-relevant articles based on title and the second level of exclusion removed articles based on non-relevant content. Articles deemed non-relevant were those that featured recipes only or sodium/salt content outside of the nutrition field (as a chemical compound for instance). After reading and reviewing the selected articles, 3 additional media articles that appeared as "recommended and related stories" on media webpages were also included for analysis. Articles were retrieved using NCapture for NVivo 12 Plus and sorted into trans fat and sodium cases or articles that contained both issues based on their content. A description of the sample is included in the below.

Data analysis

Each article was coded to fit into a trans fat, sodium or both cases. Articles were further coded based on the media outlet in which they appeared. The data was analyzed in terms of how different stakeholder voices and opinions were captured and shared by the media. According to Pan and Kosicki an important part of media analysis is assessing which stakeholders are quoted, how often, and where their quotes are placed in the media article.[26] Each direct quote in the media articles was coded and attributed to a stakeholder category which are outlined in Table 9.

Table 9. Stakeholder groupings

Stakeholder grouping	**Members**
Health community	Health or professional clinical organizations, academics/researchers, health care providers, scientists and the scientific health community including journals and research funders
Food industry	Food producers, manufacturers, processors, retailers, food service outlets, restaurants and all their associations

Stakeholder grouping	Members
Government	Elected officials including Members of Parliament (MP), Ministers and Prime Minister. While in technical terms, MPs of the opposition parties are not considered "government" rather members of the House of Commons they are included in this grouping. Grouping also includes Senators as well as the political staffers who work for elected and appointed officials and bureaucrats who are not in political posts, but rather work for a specific government department (Health Canada).
Think tanks	an organization (funded by corporations, special interest groups, government or through donors) made up of interdisciplinary experts who research and analyse ideas, issues and policies. Can be unbiased or have a political leaning.
Other experts	Scientists, academics, historians, or authors who are specialized in a particular field
Consumer groups/general public	Organizations representing Canadian consumers. Individuals who are speaking as members of the public without representing a larger entity.

A framing analysis of the media was then undertaken to explore the narratives and arguments regarding trans fat and sodium issues, and any proposed solutions, were conveyed within the media. Framing analysis serves to help understand how the public health policy issue is being portrayed in the media and which stakeholder narratives about the issue is being presented.[28] It allows for a better understanding of how the media may have influenced the cases and government decision making.[166] This was done using a deductive approach, applied a framework developed by Rowbotham et al [158] which conceptualized media framing and arguments based on past news coverage of NCD prevention policies. The Rowbotham et al framework divided media framing into subject matter categories which included tobacco, alcohol and nutrition.[158] Across all subject matters were 5 overarching framing categories that rooted the communications message in particular values such as health (health risks and benefits), economy (arguments related to potential impacts of policy on businesses, revenues, and the overall economy), societal (benefits/harms to society and need to protect particular vulnerable groups), cultural or ideological issues (focused on the "rights of individuals and organisations, cultural values, issues of responsibility including the role of government, and moral and ethical perspective") and practical ("feasibility, appropriateness and

likely efficacy of proposed policies," as well as public opinions).[158] Each framing category could be used to support or oppose an NCD prevention policy. Only the nutrition-oriented categories from the framework were used as a coding framework.

Finally, a thematic content analysis was conducted using an inductive approach to capture the content within media articles that was outside the above framework but thought to be relevant for influencing the policy process.

Results

Descriptive analysis

Tables 10 and 11 present the scope and focus of the analysed media data. There were 204 total media articles included for analysis, 80 (42 + 38) included trans fat and 162 (124 + 38) included sodium content. Thirty-eight articles included both trans fat and sodium content. Stakeholders were grouped into six categories as outlined in Table 9. Table 11 depicts the frequency of stakeholder quotes across media outlets. The health community was most frequently quoted, followed by the food industry, and the government. When comparing stakeholder quotes by media outlets, the health community was the most commonly quoted stakeholder with the exception of CTV where the food industry was quoted the most. Across media outlets, Global was most likely to include quotes from the health community with 81% of articles including such. CBC was second most likely with 69%, followed by National Post (44%) and Other (40%). The food industry was quoted most often by the Toronto Star (100% of articles), and CTV (42%) followed by CBC which featured their quotes in 28% of articles. Government quotes were most often reported in CBC with 28% of articles including their words. The general public most frequently appeared in CTV articles with representation in 33% of articles.

Table 10. Media outlets and article distribution by nutrition issue

Media outlet	**Trans Fat**	**Sodium**
Other	20	60
Globe and Mail	11	31
CBC News	12	27
Regional	17	21
Global News	11	10

Media outlet	Trans Fat	Sodium
CTV News	3	9
National Post	5	4
Toronto Star	1	0
TOTALS	80	162

Table 11. Stakeholder quotes by media outlet

Media outlet/stakeholder quoted	Health community (# articles and # quotes)	Food industry	Government	General public	Other expert	Think tank
CBC (39)	27 and 111	11 and 24	11 and 31	8 and 14	1 and 5	0
CTV (12)	4 and 9	5 and 17	3 and 6	4 and 13	0	1 and 1
Global (21)	17 and 52	4 and 6	5 and 11	2 and 5	1 and 1	0
Global and Mail (42)	13 and 24	4 and 4	2 and 4	0	0	0
National Post (9)	4 and 14	0	1 and 4	1 and 4	0	1 and 1
Toronto Star (1)	0	1 and 1	0	0	0	0
Regional (38)	10 and 36	5 and 11	8 and 17	5 and 6	0	0
Other (80)	32 and 87	6 and 15	2 and 2	4 and 6	1 and 6	1 and 4

Framing Analysis

Table 12 reports the wide range of categories and arguments found in trans fat and sodium-related media articles, drawing on Rowbotham et al.[158] framing analysis synthesis. Framing categories pulled from media articles covered both support (n=142) and opposition (n=51) of nutrition policy. Framing captured all five overarching frame categories including health (support n= 64 and oppose n=17), societal (support n=21 and oppose n=0), economic (support n=12 and oppose n=8), practical (support n=20 and oppose n=22), and cultural/ideological (support n=25 and oppose n=4).

Table 12. Framing analysis of trans fat and sodium media articles based on Rowbotham et al.[158] framework

Framing Category	**Nutrition arguments**	**Stakeholder**	**Newspaper**	**Case**	**TOTAL**
Health - support of policy (66)	Link between dietary intake and health	HC 42 Gov. 9 GP 6 FI 1	CBC: 20 CTV: 6 Global: 13 G&M: 22 NP: 3 Other: 27 Regional: 15 TS: 1	Sodium: 30 Trans fat: 44	50
	Policy will have a positive impact on health	HC: 9 Gov: 2	CBC: 4 CTV: 1 Global: 3 G&M: 2 NP: 1 Other: 2 Regional:3	Sodium: 9 Tf: 9	16
Health - opposed to policy (17)	Downplays the risks to health Some of these studies featured downplay on sugar and saturated fat not solely TF and sodium	HC: 7 GP: 2 Food: 3	CBC: 4 CTV: 2 Global: 1 G&M: 3 NP: 0 Other: 3	Sodium: 12 (but 5 focused on sugar and sat fat) TF: 7 (but all focused on sugar and Sat Fat)	15

Framing Category	Nutrition arguments	Stakeholder	Newspaper	Case	TOTAL
			Regional: 1		
	Downplays the likely health benefits of policy (sugar and sat fat)	Food: 1	CBC: 1 Other: 1	Sodium: 1 TF: 2	2
Societal - support of policy (21)	Policy will protect vulnerable groups	HC: 11 Gov: 2 General: 2	CBC: 7 CTV: 2 Global: 1 G&M: 4 NP: 2 Other: 5	Sodium: 19 TF: 8	21
Societal - opposed to policy	Policy will harm low-income groups	NA	NA	NA	NA
Economic - support of policy (12)	Policy will have a positive economic impact	HC: 1	CBC: 4 G&M: 1 Other: 1 Regional: 1	Sodium: 7 4: TF	10
	Policy will not harm businesses or the economy	NA	CBC: 1 Regional: 1	Sodium: 0 TF: 2	2
Economic - opposed to policy (8)	Policy will harm businesses or the economy	HC: 1 Gov: 2 Gen: 2 Food:2	CBC: 3 CTV: 3 G&M: 1 NP: 1	Sodium: 7 TF: 2	8
Practical - support of policy (20)	Policy is likely to be effective	HC: 8 Gov: 1 Food: 1	CBC: 5 CTV: 3 Global: 1 G&M: 1 NP: 0 Other: 4	Sodium: 16 TF: 8	18

Framing Category	Nutrition arguments	Stakeholder	Newspaper	Case	TOTAL
			Regional: 4		
	Public or political support	HC: 1	CBC: 2	Sodium: 2 TF: 1	2
Practical - opposed to policy (22)	Policy is not feasible	Other: 2 Think tank: 2 Food: 3 GP: 1 Gov: 2	CBC: 1 CTV: 3 Regional: 1	Sodium: 4 TF: 2	5
	policy is unlikely to be effective	Gov: 1 Food: 2	CTV: 2 GM: 1 Reg: 1	Sodium: 3 TF: 2	4
	policy is not the appropriate solution	Gov: 3 Food: 2	CBC: 1 CTV: 2 Regional: 2	Sodium: 3 TF: 2	5
	policy is unnecessary	Gov: 1 Food: 2	CTV: 3 Global: 1	Sodium: 1 TF: 3	4
	lack of public support	Gov: 1 Gen: 3	CBC: 2 G&M: 1 NP: 1	Sodium: 4 TF: 0	4
Cultural or Ideological - support of policy (25)	policy is needed to combat industry tactics	Food industry: 2 General Public: 1 Gov: 0 Health: 7 Other: 0 Think tank: 0	CBC: 4 CTV: 2 Global: 2 G&M: 1 NP: 0 Other: 4 Regional: 2 TS: 0	Sodium:16 TF: 10	16
	responsibility of government to support people	HC: 3 Gov: 2 Gen: 1	CBC: 6 Global: 1 GM: 1	Sodium: 6 TF: 6	9

Framing Category	Nutrition arguments	Stakeholder	Newspaper	Case	TOTAL
Cultural or Ideological - opposed to policy	government interference	HC: 1 Gov: 2	NP: 1 Regional: 1	Sodium: 1 TF: 2	2
	individual responsibility	Gov: 1	NP: 1	Sodium: 1 TF: 1	1
	threat to individual rights	Food: 1	CBC: 1	Sodium: 0 TF: 1	1
	policy as a slippery slope	NA	NA	**NA**	**NA**
	questionable government motivation	NA	NA	NA	NA

Framing supporting policy

The most commonly used supportive categorical framing found was 'health' which appeared in 66 articles. The specific argument to support this framing was the establishment of the dietary link between intake and poor health which appeared in 50 articles and included 30 (38%) trans fat articles and 44 (27%) sodium articles. However, not all of these articles used this framing in support of a specific policy. Instead, many of these articles illustrated a link between a nutrient and poor health but the call for action was around building awareness, education and individual behaviour change – not a specific policy measure. The lack of policy details will be further explored in the thematic analysis section of the results. Many media articles addressed the strong association with heart disease and often presented trans fats as the worst fats to consume, often reporting that there is no safe level of trans fat consumption. While most trans fat articles explained the increased risk of death and disease associated with consumption, less than a third (30%) gave a value to the risk. For example, one article quoted research articles results indicating that "trans fats, as found in many margarines, increase the risk of death by 34 percent"[182] but this type of detail was not common throughout trans fat media articles. The other argument within the 'health' frame is that policy will have a positive impact on health and this was featured in 18 articles (9 sodium and 9 trans fat). Many of these articles reported cost savings or averted disease and death associated with reduction and/or regulation of trans fat and sodium. The cost savings in a trans fat article specified that "regulating the limits would save the health system between $5 billion and $9 billion over 20 years."[183] In a similar vein, it was reported that sodium reduction through regulation would save tens

of thousands of Canadian lives each year and reaching the target intakes “would save about $1.4 billion in health-care dollars each year."[184]

The second most common framing type in support of policy was ‘cultural or ideological’ which appeared in 25 articles. Within this framing there were two arguments used 1) policy is needed to combat industry tactics (16 articles in total – 16 sodium and 10 trans fat) and 2) it is the responsibility of government to support people (9 articles in total – 6 sodium and 6 trans fat articles). Throughout the argument of combating industry tactics it was often described that the food industry was guilty of creating misleading health and nutrition claims on their products. For example, one article stated “package labelling often promotes ‘all-natural’ ingredients or the presence of valuable nutrients and minerals. Alternatively, companies often focus on the absence of preservatives and substances linked to serious illnesses and disease” but they minimize harmful ingredients which could be present in high quantities.[185]

For this framing category, 6 articles highlighted lobbying by the food industry to influence nutrition policy. Most of these articles described the food industry’s involvement in the development of Canada’s Food Guide where “due to industry lobbying, it may be more about marketing than nutrition.”[186] While government officials denied food industry influence on nutrition policy making, the media stories showed that their involvement in the policy making process went beyond the policy advisory committees of which they were participants as they frequently lobbied the highest level bureaucrat in the nutrition department.[186]

Framing opposing policy

The most common framing used in opposition to policy was that focusing on the practicality of policy which appeared in 22 articles. A few articles which claimed policy is not necessary or appropriate because the industry is already self-regulating highlighted the restaurant sector as leaders, championing nutrition policies and reductions in trans fat or sodium. In one example, an article by the Toronto Star praised A&W (a fast food chain) for being the first chain hamburger restaurant in Canada to “offer zero or significantly lower trans fat menu items, including French fries.”[187] The article goes on to list other restaurants who have made similar pledges. Other arguments appeared in media stories about the trans fat ban in the US and illustrated that bans on trans fat would be unfeasible and cost prohibitive for bakeries.

Arguments in opposition of policy using health framing tended to downplay the link between intake and poor health outcomes. However, such framing was used in nutrition media articles that featured more than just sodium and trans fat. In fact, within the sample of articles included for this study, it

was more common for an article to include multiple nutrition issues, over rather than just trans fat or sodium. Overall, 17 articles used health framing to oppose policy and downplayed the risk to health or the health benefit of the policy. As expected, based on the controversial nature of the sodium evidence base, sodium articles were more likely to illustrate a dispute in the associated health risk compared to trans fat articles. Specifically, 7 sodium articles featured new research or stakeholder perspectives that questioned the link between sodium and hypertension. The sodium debate which showed a divide between medical professionals, researchers and public health practitioners on the contributions of sodium to hypertension was featured in 3 articles. On the other hand, there were no media articles that questioned the ill health consequences of trans fat consumption and the only content in trans fat articles that questioned the science linking intake to ill health were focused on saturated fats and sugar.

Thematic analysis

Beyond the categorization framework created by Rowbotham et al, two additional themes of interest emerged, relating to regulation and nutritional content of food.

Regulation

The theme of regulation appeared in 97 articles and included examples of specific government or organizational policies adopted or being proposed. This theme is important to assess because the media framing analysis guided by the Rowbotham et al. framework above did not exclude articles without mention of regulation. In fact, many of the framing categories and arguments (mainly health risks) used across media articles did so broadly, without reference to policy or regulatory measures but were narratives thought to build awareness and education among consumers about nutrition and health. As such, it's important to look specifically at the articles which featured regulation/policy measures to better understand how the media influenced the advancement or hinderance of nutrition policy. Regulation appeared in 65 (40%) sodium articles and 50 trans fat (63%) articles and it was further classified into sub-themes. The comparison between regulation and its sub-themes in sodium and trans fat articles is illustrated in Table 13.

Regulation as a theme in trans fat articles. Numerous media articles described the trans fat ban in Denmark and starting in 2015 many reported on the US decision to ban trans fat. This brought into question why Canada had not yet done the same. Similarly, articles in the early 2010's highlighted updates to the nutrition facts table in the US and Canada which was credited with reducing trans fat intake due to industry reformulation. In relation to organizational policy, many of the articles showcased the elimination of trans fat at food establishments and in food processing. Restaurants

chains like A&W and local diners were celebrated in the media articles for their leadership in removing trans fat from their foods. Another article reported the choice to consume trans fats "is vanishing anyway, thanks to a U.S. phase-out of trans fats from food produced there, and its elimination by many processed-food companies like Frito-Lay, because of negative associations with trans fats' health consequences."[186] However, some articles described that trans fats were still used in baked good and cafeterias, and widely available in the food supply chain and most importantly, those foods are often sold without nutritional information and labeling, meaning Canadians are unaware that the foods their eating out of home contain trans fat. Also related to regulation and policy making, the industry friendly viewpoint of the government was captured in 11 trans fat articles. Some of these articles described longer than necessary implementation periods for industry related to nutrition policies and others mentioned a hands-off government values. An article in the Globe and Mail stated that "in 2009, Health Canada abandoned its plans to enforce regulations and stuck with a voluntary approach putting the interest of industry before the health of the public."[78] The media made it clear that the government was opposed to creating barriers for industry, with numerous articles quoting the Minister of Health saying "I have instructed my department to continue its engagement with stakeholders to identify the challenges and how best to overcome them without adding a regulatory burden."[80] Frustration on government policies or decision making was featured in 14 trans fat regulation media articles (28%). Most often, articles illustrated a disappointment in the decision making around trans fat reduction policies. A National Post headline read "Critics accuse health minister of 'deliberate inaction' on important issues" and showcased frustration from health community stakeholders on the Minister of Health's "sidelining of efforts to ban trans fat."[76] A regional paper described the Minister of Health's actions according to an opposition MP as "poisoning Canada's kids by backing away from a plan to limit trans fats in Canadian food products."[183] An article by CBC News used a similar approach, sharing the views of a Liberal opposition MP who stated "Obviously this minister thinks that she is a scientist and she knows more than her department… [She] has her head in the sand" when it comes to trans fat decision making "[80]

Regulation as a theme in sodium articles. Regulation within the sodium media articles often described new school food policies at the provincial levels which would limit sodium content of foods served in cafeterias. Other articles highlighted the policies recommendations – such as uniform serving sizes on the nutrition facts table for prepacked foods - as set out by the SWG which had been unfulfilled by the federal government. The issue of marketing unhealthy food and beverages to children was also illustrated along with the need for better regulation of the food industry's tactics to lure young people. In 44 sodium articles (68% of sodium articles within

regulation theme), the need for regulation was described related to unhealthy food environments with media articles explaining that most of the food products being marketed to children are high in sodium among other unhealthy ingredients. Compared to trans fat, more sodium related articles (34% or 22/65) illustrated opposition to nutrition policies. The opposition was shown to be from a range of sources including the food industry, governments who displayed an industry friendly ideology, and consumers who believed in personal choice over regulation. For instance, some students were cited as being frustrated by the new food items at served at school as a result of new school food policies. And the food industry was cited as being opposed to mandatory menu labelling as a nutrition policy to reduce sodium intake because their menus are "too complex and change too frequently."[188] Similar to trans fat articles, a little less than a third (20/65) of the sodium articles that featured regulation portrayed frustration with lack of policy adoption by governments. On article included opinions from a health researcher and clinician who said "Health Canada is really working together with industry. They say to lower the sodium in foods when they should really be looking at the health of Canadians first and looking at the health of industry second."[189] Other articles criticized the voluntary approach given that it "still enable[s] food manufacturers to sell items that are fairly high in sodium and without mandatory regulation these "guidelines are voluntary…. [and may] never really take off."[190] The pro-industry and pro-choice political ideology of the federal government was featured in 12 (18%) of the sodium regulation articles. One report described the "inordinately long" implementation timelines the government was granting to the industry on sodium reductions.[191] In another article criticizing the federal Minister of Health for inaction on important nutrition files, the Minister's communications director was quoted about the government's philosophy saying "As government we can play certain roles but, ultimately, we want to give people information that they can use to make decisions they feel are best for themselves … There is an element of personal responsibility that needs to be there as well."[76]

Nutritional content of foods

Almost half of all articles (46%) featured the nutritional content of food items, mainly in restaurants which lacked mandatory nutrition labeling. This included values for sodium and/or trans fat, but also sugar, calories, fat or saturated fat. This information sharing was meant to expose unhealthy ingredients in foods that consumers may otherwise be unaware of. The nutrition content theme was more common in sodium articles (93/162 or 57%) than trans fat articles (18 /80 or 23%). In sub-categorizing the specific nutritional content reported across the articles, there was a wide range with sodium levels being captured most often (n=82), and trans fat levels in food shared the least (n=5).

While providing information about nutritional content in foods is an important aspect of educating consumers and facilitating behaviour change to reduce trans fat and sodium intake, information sharing alone can be insufficient to improve outcomes. Evidence shows that nutrition information needs to be anchored in recommendations about how much of a particular nutrient or ingredient is considered healthy. As such, it was deemed important to assess how often the food content theme was accompanied by the application of dietary guidelines and advice. Of the articles which contained information about food content, 46 also included details on dietary advice. This means that the majority (51%) of articles which highlighted food content did not provide contextual information to help readers understand why those values were concerning or how the compared to nutrition guidelines. When assessing the articles which featured the theme of food content, the inclusion was regulation was featured in 31 (33%) articles and was equally common among the trans fat (6/18) and sodium (31/93) food content articles.

Table 13. Regulation themes within sodium and trans fat media articles

Theme	**Sodium**	**Trans Fat**
Regulation	40% of all sodium articles	63% of all articles
Regulation – food environment	68% of sodium articles with reg theme	58% of TF articles with reg theme
Regulation – government policies	58% of articles with regulation	100% of articles with regulation
Regulation – opposition to policy	34% of articles with regulation	17% of articles with regulation
Regulation – opposition to policy: industry friendly political ideology	18% of the articles with regulation	22% of articles with regulation
Regulation – frustration on lack of government policy	31% of articles with regulation	28% of articles with regulation

Discussion

This study finds that stakeholders have attempted to influence the trans fat and sodium reduction policy debates in Canada using media as a communications tool.

This research contributes to the growing yet limited literature on media in relation to trans fat and sodium issues. Jarlenski and Berry's media analysis on trans fat in the US looked at how policy solutions to trans fats were framed in newspapers and broadcast mediums.[192] They found the most commonly reported policy measure was voluntary measures by the food industry, followed by FDA nutrition labeling requirements, regional restrictions on trans fats in restaurants, lawsuits against food companies, and lastly policies to reduce trans fat school environments.[192] Another study looking at trans fat and media conducted by Niederdeppe and Frosch assessed media coverage pre and post the FDA labeling policy on trans fat.[193] The authors aimed to see whether news coverage impacted the sale of foods with trans fat and found an inverse relationship between news coverage of trans fat products and their sales.[193] Beyond these two American studies, the researcher was unable to find any other studies looking at trans fat policy and media. There were no studies focused on sodium reduction policy and media coverage.

However, findings from this study also suggest that there is room for improvement in leveraging media to advance public health goals. As Wallack described, the 3 stages of media advocacy, "1) Setting the agenda—framing for access 2) Shaping the debate—framing for content and 3) Advancing the policy"[149] the results of this media analysis show that stage 1 is well informed by public health, but there is opportunity to further shape the debate and advance the policy adoption. These opportunities will be further explored below and suggestions given to expand media advocacy in nutrition beyond just raising awareness about health issues, to ultimately set the stage for government policy adoption.

Within the media framing analysis, the reliance on the health and cultural or ideological framing as arguments to support policy was as expected. Basing the supportive framing around health was likely the most common approach used because it is the easiest and the one that initially gets the issue on the political agenda. That said, in order to shape the debate and advance the policy as described by Wallack and Dorfman, it could be worthwhile to expand to other framing categories. For that reason, exposing food industry tactics and the need to combat them creates a clear justification for policy that goes beyond the traditional health framing. This approach was a successful strategy used in tobacco control.[25, 28]

While health risks associated with dietary intake was the most common framing leveraged, it did not appear in most articles. Furthermore, when comparing how often the connection between dietary intake and heath implications was presented, there was a significant difference between trans fat (38%) and sodium articles (27%) and the specific health outcomes were often left out of sodium communications. The reason for the lower rate of health risks within sodium articles could be

explained by a number of factors. First, the evidence base on sodium reduction is less clear cut compared to trans fat.[11] In fact, the sodium evidence debate was featured in several articles and leveraged as one of the most common arguments in opposition of sodium reduction. The media may have been less motivated to convey health risks on an issue where that is less streamlined, and where the culprit not as clear as it was in trans fat. Existing literature calls the "bumpy road from evidence to policy" a barrier in the sodium reduction efforts around the world.[11] That said, there is room for improvement in both cases, where the media could have highlighted the well established and emerging health risks. This is especially true in the numerous articles that showcased food contents and specified sodium and trans fat content. Without knowing why these ingredient matter, and how their values compare to dietary guidelines, readers and the public would be less informed and motivated to change dietary habits. Furthermore, the case to build awareness and support for policy change is minimized because when media coverage only includes food content details without further context or calls to action.

Beyond the health and ideological framing, supportive framing related to the economy were only used a moderate amount. It was promising to see economic modeling used to demonstrate the burden of trans fat and sodium on the health care system. In a publicly funded, universal health care system like Canada, tax payers and governments are concerned about rising and avoidable costs. This is especially true given that Canadian federalism means both levels of government (national and provincial/territorial) could benefit from disease prevention and reduced health expenditures. Economic modeling depicting the burden of disease on people, health systems and the economy are powerful tool and should be further leveraged to frame the policy issues within the media and with governments.

According to Wallack and others in the field of public health media advocacy, framing policy solutions to align with goals is necessary to create the right conditions for stakeholders to succeed in influencing the policy process.[25, 150] Opposition to policy framing can do a great deal of damage to the third phase of media advocacy, advancing policy into adoption and implementation.[29] Dorfman and Nestle among others have extensively shown that media coverage and framing which endorse the narrative that people are free to decide what they want to eat, irrespective of how harmful it could be to one's health can reduce public support for nutrition policy, promotes individualism and takes away the onus on systems change thereby effectively sidelining political discussions about the commercial determinants of health (CDOH) including marketing and business practices of the food industry.[16, 25, 29] The findings from the trans fat and sodium related media analysis show that there was almost three times more supportive policy framing than opposing policy framing within the sample. This is a positive finding for public health, but it comes with a few implications. Most of the

media articles in the sample were from centrist or left of centre media outlets. For this reason, those outlets were more likely to be aligned with the values of public health and the framing arguments presented by health community stakeholders. Trans fat and sodium related media articles were less common in right-winged media outlets like the National Post and some regional newspapers. CBC and the Globe and Mail – thought to be left-winged media outlets in Canada – included the most trans fat and sodium related media articles. Although framing seems to be slanted towards policy support, the sample itself is biased towards media outlets which deem nutrition issues worthy of media coverage.

Regulation as a theme was featured in a majority (63%) of trans fat articles whereas it was only found in 40% of sodium articles. Furthermore, trans fat articles often described a lack of federal regulation in Canada or highlighted policy adoption in other countries, whereas sodium articles often featured provincial policy solutions and did not mention national solutions in Canada or elsewhere. While federalism means that both federal and provincial/territorial levels of government can address "health" through public policy, the federal government is uniquely positioned to protect population health given its mandates on public health, consumer protection and food safety. This variation between sodium and trans fat may suggest why trans fat media coverage was more successful in shaping the debate, creating public interest and support and then advancing policies. While neither trans fat or sodium reduction cases led to formal policy, the voluntary approach to trans fat reduction adopted by the government was a "structured" approach which included monitoring and reporting and was considered a moderate success compared to the laissez-faire sodium strategy. When assessing how the media influenced the policy process, a higher frequency of regulation related media coverage on trans fat may have put pressure on the government to create a policy solution that demonstrated tangible outcomes – structured voluntary approach with monitoring and reporting. On the other hand, the limited regulation discussion in the sodium reduction debate may have enabled government to take a more hands-off approach – informal voluntary agreement.

The inclusion of quotes in media is a key approach to ensure that stakeholder viewpoints and framing of the policy solutions are portrayed in the public discourse.[25] Quotes enable a direct line of communication with the public and decision makers, and add credibility and legitimacy to voices and perspectives.[25] The health community was most often quoted in trans fat and sodium related media articles suggesting that the health community in Canada is well respected by journalists who value their contributions to media production. It also suggests that the health community has been able to insert themselves into the media discourse in an effective manner. All media outlets showed a favourability towards health community contributions over the food industry, with the exception of

CTV. This, and the lack of food industry stakeholder quotes within the National Post media articles is surprising. CTV is considered a centrist media outlet and the National Post is a right-winged newspaper and has a subsidiary called the Financial Post, focused solely on economic and business issues. It would be expected that the National Post featured more quotes from the food industry, and that CTV would have a more balanced number of quotes among various stakeholders. That said, this study only measured direct quotes, not ideas or concepts that were attributed to stakeholders or used as contextual background in media stories. For that reason, the analysis of stakeholder quotes should not be perceived as the only opportunities stakeholders had to influence the content and framing in media articles on trans fat and sodium. It would also be useful to know how many stakeholders from each category a journalist interviewed for media articles, and which perspectives were left out of media stories. Such information would fill existing knowledge gaps about media advocacy and further highlight how the media utilizes stakeholder perspectives to develop stories and framing.

In the timeframe being analyzed, the federal government was Conservative, and right of centre with a political ideology that preferred voluntary agreements over industry regulation. Given that the right-winged media did not give the sodium and trans fat stories much coverage, and the criticisms about lack of government regulation were featured in centre and left of centre media outlets, it could be interpreted that the government was not pressured by the media in which they were most concerned about. Assuming that their voter base was likely not reading CBC or the Globe and Mail (furthest left leaning publications), the government may not have felt the public pressure to regulate trans fat and sodium reduction. Instead, the right winged media who displayed the highest rate of policy opposing frames and industry friendly narratives may have contributed to the lack of pressure, which meant that policy was not advanced.

Limitations

First, this study only included digital print, not broadcast (television or radio) and was limited to English publications that featured an online platform. The media analysis also focused on traditional media, and did not include social media which expanded around the year 2005.[194] Second, regional newspapers were grouped together into a "regional" category. Regional newspapers cover a range of distribution and readership levels, and it would be more powerful to group these newspapers into additional categories based on province/territory. For instance, papers in the western part of the country are more right-winged and conservative in their ideology compared to those in central and eastern Canada where a left-winged and liberal viewpoint is more common.[195] An analysis comparing regional newspaper was beyond the scope of this research but is an opportunity for

future study, assessing regional differences in how policy issues are portrayed across the country. Third, while the discussion section highlights gaps and lost opportunities to advance public health nutrition advocacy and policy making, it is unclear whether stakeholders (including the public health community) attempted to insert their influence into the media coverage. In order to assess this, research would need to look at stakeholder communication channels such as organizational press releases and social media accounts throughout the timeline to determine how various groups were presenting the issues and framing the policy solutions. Lastly, this study is not truly representative of Canada, since it only includes English media articles. Canada is a bilingual country and 22.8% of Canadians speak French as their first language which means that almost a quarter of the Canadian population as a media audience was left out of this study.[196]

Conclusions

This research is the first of its kind to assess the trans fat and sodium related media coverage in Canada. Existing literature shows that public health media advocacy and the framing of policy solutions are key to advancing policy and the coverage within Canadian media outlets may have contributed to the government's structured voluntary approach to trans fat reduction and the minimal intervention on sodium reduction. While the findings of this research study are promising, show good penetration of the health community into the media coverage, and more framing in support of than opposed to nutrition policy, there are lessons to be learned for the public health community. Public health stakeholders should consider ways to get nutrition issues into right-winged media outlets, such as using economic framing, quantification and modeling which could pique the interest of journalists and readers of these newspapers who are more business and economy oriented. This study also highlights the need for more research in the area, to assist public health stakeholders in using media advocacy to advance nutrition policy. Sodium remains an unregulated area needing public heath intervention. At present, public health advocates are struggling to advance nutrition policies in Canada on Front of Package food labeling and restrictions on food and beverage marketing to children under a Liberal government. Future research on nutrition issues in the media should assess whether policy supportive framing continue to dominate, and whether the food industry has gained traction in inserting their viewpoints into media coverage.

7. Discussion, implications and conclusions

This chapter provides an overview of the thesis as a whole - bringing together the three methods and two cases studies, with a synthesis of the findings from each chapter as related to the research objectives. The chapter also suggests the implications of the findings on public health policy and research. It concludes with a dissemination plan of research findings to advance knowledge transfer and exchange in public health nutrition policy.

7.1 Synthesis of study findings achievement of research objectives

My first objective was to clarify and understand the influence of non-state policy actors/stakeholders on the processes leading to voluntary measures for trans fat and sodium reduction in Canada which was achieved using three distinct but complementary methods (lobby analysis, media analysis and stakeholder interviews). The second objective aimed to apply public health frameworks and a policy process theory to explain and analyse the contextual factors within the policy ecosystem that affected government decision making around these nutrition policy processes. This was achieved using the ACF to the overall study design and analysis, along with Rowbotham et al framework for media narratives and Malekinejad et al to distinguish the use of evidence by various stakeholder groups. Implications were addressed within each study write-up and synthesis of findings (below) satisfy my third objective; providing public health nutrition practitioners and advocates with a better understanding of the complexities in nutrition policy making in Canada.

Combining the findings from the three studies – lobby analysis, media analysis and stakeholder interviews – provides a more detailed and vivid illustration of the policy process, stakeholder influence and decision making in Canada around trans fat and sodium reduction. Figures 7 and 8 below integrate the findings from each study and leverages the established and emerging theories and frameworks (ACF in combination with the Rowbotham et al framework for media narratives and Malekinejad et al framework for evidence in policy making) to visually depict how the policy process worked, and why the voluntary agreements in sodium and trans fat were adopted by the government in Canada.

Figure 7 below depicts the contextual and stakeholder actions that seem to have led to the adoption of the trans fat voluntary agreement. The peach boxes represent the ACF foundational framework and the blue box relates to the Rowbotham et al media findings while the green box depicts the evidence discordance results from the Malekinjad et al framework. The three frameworks are layered together to show the intersections between various factors. In looking at the external

environment effecting the policy subsystem, the shift in government from LPC to CPC meant a change in political ideology during the time which the TFTF was studying the issue and making recommendations, and this is thought to change the course of policy decision making. Media coverage vilifying the food industry and highlighting the health risks associated with trans fat intake created public outrage which put pressure on the government to address the issue. The food industry demonstrated greater access to lobby government officials as detailed in the lobby analysis and stakeholder interview chapters. Evidence discordances threatened to block the adoption of the TFTF report recommendations, but the health community was able to adjust their policy analysis to suit the political ideology of the government and secure a structured voluntary agreement with reporting and monitoring. However, when the voluntary agreement fails to achieve the reduction goals the government blocks the attempts for regulation citing lack of data to accurately explain the issue – this is thought to be a new type of discordance that can be added to the theoretical framework.

Figure 7 below synthesizes the results of all three methods into an overarching illustration of the sodium reduction policy process. To start, discordances (different interpretations of evidence) created rifts among the health community and led to the formation of multiple "health" coalitions working on sodium reduction. A fraction in the health community emerged and some health organizations were accused of having conflict of interests because of food industry funding and partnerships. The differing evidence interpretations led to a range of policy recommendations which confused the government and public about the seriousness of and solution to this nutrition problem. Within the media articles, sodium is not covered as a major health risk, in the same way that trans fat was publicly presented. This may have resulted in less public pressure for the government to "solve" the issue. The food industry involved in the sodium reduction policy process was larger and included more companies because sodium was a more widely used ingredient. This meant more capacity and opportunity to influence the government. Similar to the findings around trans fat, it was expressed that the food industry engaged in lobbying behind the scenes to voice their displeasure with the SWG report recommendations. However, the health community demonstrated their highest volumes of lobbying in the years around the SWG implementation debate in parliament. The health community may have been more aware and prepared for industry opposition after having learned from the TFTF case. Yet, the health community lobbying efforts were not successful, the SWG report recommendations were never implemented, and the government instead adopted informal an informal voluntary agreement.

Figure 7. Trans fat policy process in Canada 2003-2014 as depicted using ACF in combination with Rowbotham et al + Malekinejad et al frameworks

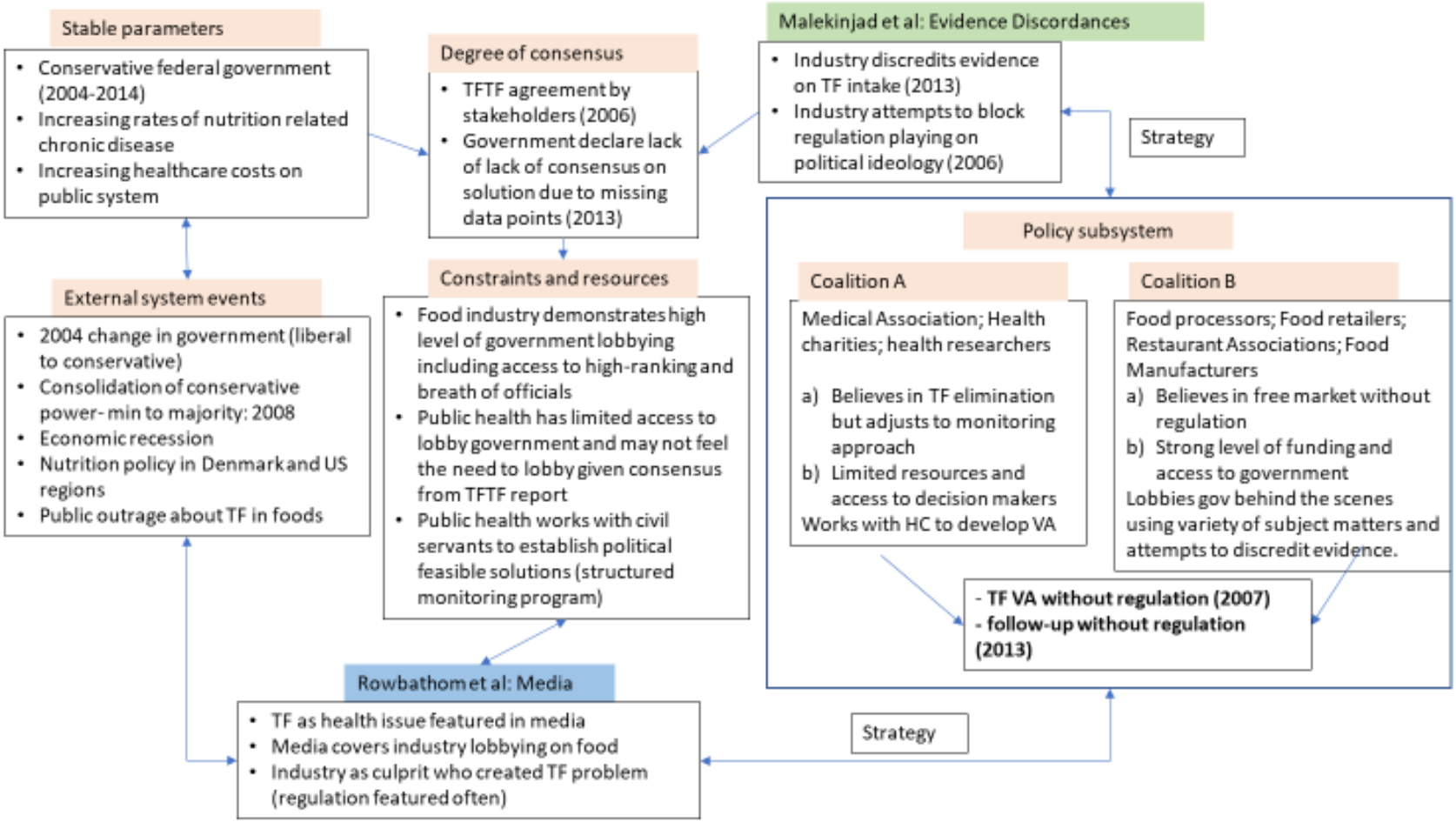
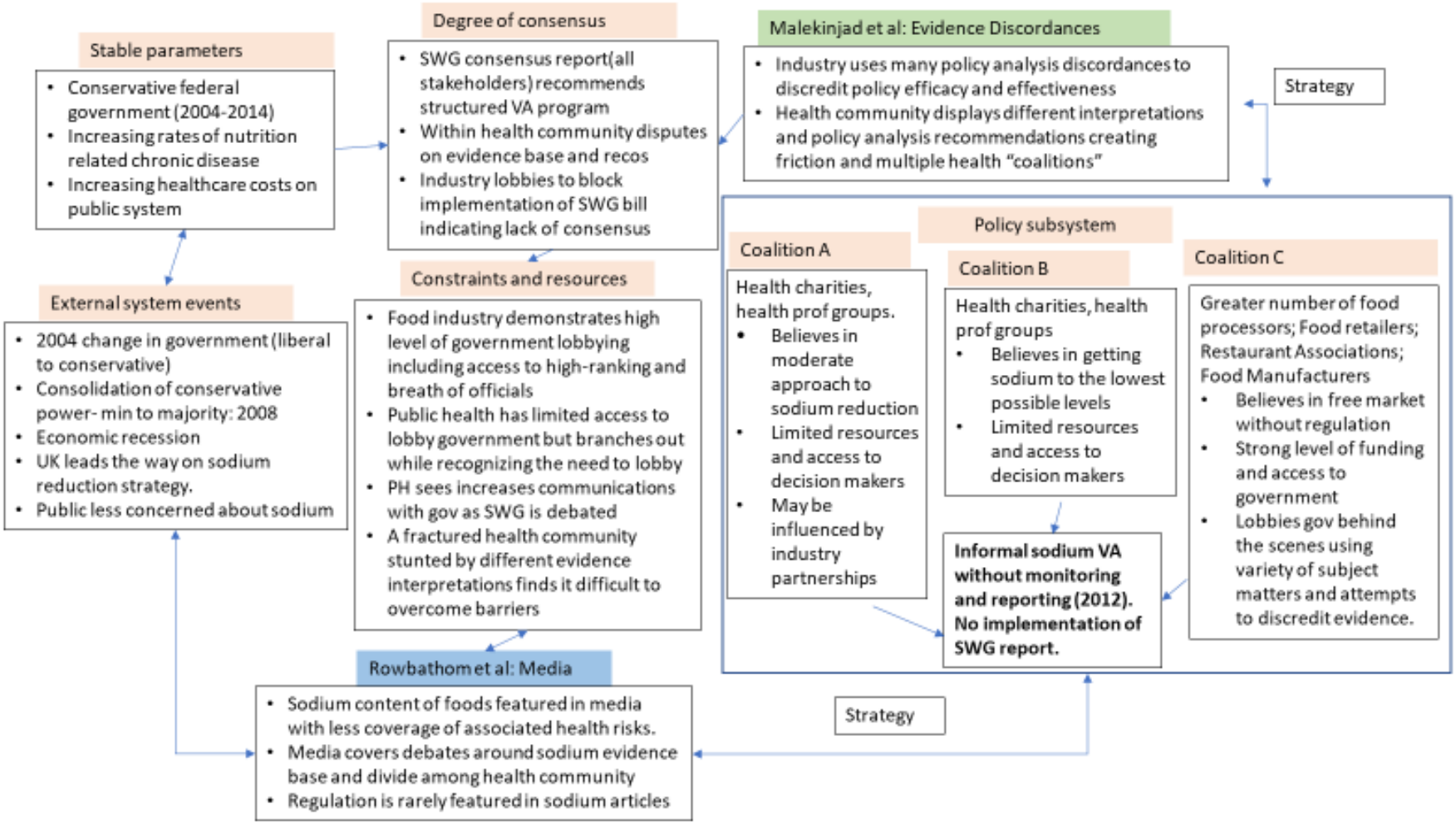


Figure 8. Sodium policy process in Canada 2003-2014 as depicted using ACF in combination with Rowbotham et al + Malekinejad et al frameworks



7.2 Original contribution

This study is the first to capture the perspectives of various stakeholders involved in the trans fat and sodium reduction voluntary agreement policy processes in Canada. This work provides an in-depth analysis of why the Canadian federal government adopted voluntary measures for sodium and trans fat reduction between 2003 and 2014.

This is also the first study to apply the Malekinejad et al conceptual framework to better illustrate and understand the public health policy process in nutrition. This novel application and the suggestion to expand the framework are strengths and can contribute to the knowledge of this important public health area.

A third novel undertaking is the analysis of the Registry of Lobbyists of Canada as related to trans fat and sodium. It serves as only the second piece of public health research in Canada to utilize this data set for a study of lobbying efforts. The use of this method can also provide insight on how the Registry of Lobbyists can be improved in terms of transparency to ensure a more accountable nutrition policy making process.

In using both novel (lobby analysis) and established (media analysis and key informant interviews) methods, the research project analyses the influence of stakeholder groups from a variety of angles which makes the research unique and a valuable contribution to the knowledge base. The application, supplementation and extension of theories and frameworks serves as a contribution to academia and may enable improvements to existing and emerging public health theories/frameworks. The overall synthesis of research findings into a suggested explanation for government decision making can enhance the understanding of nutrition policy making for public health professionals, and is especially relevant as advocates continue to push for nutrition policies for restrictions on marketing of unhealthy food and beverages to children and front-of-package nutrition labelling in Canada. These policy measures have been included as mandate features of the current Canadian federal government, but their adoption has been delayed numerous due to food industry lobbying, and as such, this thesis research can serve to provide lessons learned and new insights for current and future nutrition policy advocacy strategies.

7.3 The current state of nutrition policy in Canada

After a decade of voluntary agreements on trans fat and sodium, the new LPC government created a Healthy Eating Strategy (HES) after being elected in 2014. The HES included 2018 regulation to eliminate trans fat from the Canadian food supply along with pledges to update the food guide (completed in 2016), restrict the marketing of unhealthy food and beverages to children and

mandate front of package nutrition labels on food products with the latter two being unfulfilled as of Autumn 2021. In 2017, an assessment of the sodium voluntary agreement deemed the initiative was not successful and Canadians continued to consume excess sodium.[8] The government's assessment report cited the upcoming front of package and marketing restrictions as measures to address the sodium issue.[8] However, a 2018 PMB (Bill 228) which legislated restrictions on marketing to children was defeated in the Senate. Similarly, regulations to mandate front of package food labelling have stalled in the consultation and development phases.

As the world exits the global pandemic and governments regain the bandwidth to focus on other public health measures, advocates are ready to secure the two remaining HES pledges to address sodium intakes.

7.4Policy and practice implications

In explaining and capturing the past policy process around trans fat and sodium reduction taken by the Canadian federal government, the researcher is able to make recommendations about lessons learned, areas of opportunity and weaknesses as related to the advancement of influencing public health nutrition.

Lessons learned:

- Diverging interpretations of evidence among the health community can be difficult to overcome.
- The process from evidence to policy is not straightforward and can be manipulated by all stakeholders to suit their interests.
- Working with civil servants to overcome political ideology blockages is strategic and can be a timely solution to advance an issue in an incremental manner.
- Canadian media heavily features perspectives from health stakeholders; however, this may not be powerful enough to influence government decision makers.
- Direct access to government decision makers seems highly important. Industry demonstrated good access whereas public health did not, and this could have been a hinderance in their influence on policy process.

Areas of opportunity:

- Negotiating within a policy coalition is important and can prevent fractures among the public health community which can ultimately block progress. Finding consensus in policy

recommendations among the health community might mean some policy beliefs are compromised, but public health organizations need to decide whether incremental policy change is better than no policy change.

- Media coverage needs to better shape public opinion can increase pressure on governments. In relation to sodium, the government needs to feel that the voting public want to see change as was the situation in trans fat. Public health advocates should adopt tactics that better engage the public in the policy discourse and discussions.

- Improved access to government officials can drive influence. Public health organizations should pool resources to secure meetings with members of parliament or include additional representatives (constituent from riding, high profile researcher or clinician, numerous charities in one meeting) in invites that could improve chances of securing a meeting.

- The narratives used by the food industry to block nutrition policy can be retrieved from the media. Public health organizations should be prepared with counter arguments to refute industry messages in media and in government discussions.

- The research did not uncover any involvement or leadership from the Public Health Agency of Canada (PHAC) on these nutrition policy issues. This could be because trans fat and sodium were introduced onto the political agenda around the same time that PHAC was being established in the mid-2000s. Going forward, public health advocates should explore working with PHAC to secure more inside government support for specific policy measures.

Recommendation for public health policy practitioners and advocates:

- Advocate for more frequent and detailed population level dietary habits and intake data. The data drought of 10 years severely impacted the ability of public health to advance nutrition policy because the problem was more easily ignored due to out dated surveillance data.

- Similar to what has been adopted by the WHO on the Framework Convention for Tobacco Control, governments need to be transparent about industry influence on decision making. Public health organizations should advocate for government guidelines to prevent industry interference in food policy. This recommendation is emerging at global NCD discussions and in the meantime[197], Canada can take a leadership role and develop guidelines to prevent industry inference in nutrition policy making.

7.5 Research implications

This thesis and the series of research studies both filled gaps within the literature and highlighted numerous opportunities for additional research. Areas of additional exploration to further supplement the findings of this can be grouped based on methods. Media analysis research can expand to include temporal analysis on trans fat and sodium media coverage in relation to key policy milestones, expansion of media research into broadcast and social media platforms. Furthermore, key informant interviews could be used to supplement the assessment of how each stakeholder used the media to influence public opinion and create political pressure.

Given the lobby analysis was a novel method, frameworks and guides could be developed to support consistency in further investigations using these data sources. Additional research using the Registry of Lobbyists can expand into other domains like environmental issues where powerful coalitions may be influencing government decision making. Furthermore, research utilizing the Registry of Lobbyists should be undertaken to highlight the opportunities within this data set along with the weaknesses that could be improved with increased detail and transparency in reporting criteria.

Lastly, only the evidence theme emerging from the stakeholder interviews was presented as findings. There are numerous other thematic findings that could be explored and applied to the theoretical models to add additional layers of understanding and explanation around these cases. Another thematic area which was commonly found in the data collection was conflict of interest in the policy process, a topic of great relevance in public health research and policy.

7.6 Strengths and limitations

The main strength of this thesis is that it contributes a novel (see section 7.2), comprehensive and multi-perspective view of stakeholder influence on government decisions around trans fat and sodium reduction policy. Using a range of methods, including stakeholder interviews, document review, media analysis and a lobby analysis enabled the researcher to capture the complexity and extent of stakeholder influence on the government. The supplementary uses of data collection and analysis enable a more detailed and objective assessment of the public health nutrition issues. Another strength of this work is its applicability to other settings, for example other countries grappling with similar policy decision making challenges, and topics, for example policy processes to reduce the intake of sugar at the population level.

There were several limitations to this research. These include: 1) difficulty in accessing equal representation among stakeholder groups which may have skewed the findings to over-represent the views of the health community, as elected officials and media representative perspectives were

not captured; 2) assumptions regarding how stakeholders interjected their beliefs and position in communications with government and in attempts to share their voices with the media; and 3) an inability to decipher the efforts undertaken by stakeholders such as requests for government meetings and outreach/interviews with reporters, due to the way the lobby register works.

7.7 Reflexivity

I experienced the challenge of distancing myself from the research, given my position as a public health professional, registered lobbyist and practitioner involved in nutrition advocacy. While I implored every attempt to remain unbiased in data collection, synthesis, analysis and write-up, it was inevitably difficult to entirely detach myself from my values and allegiance to public health goals. My positionality also meant that I had both insider and outsider perspectives that needed to be declared and addressed. This was most obvious during the key informant interviews where I needed to be open about my position with stakeholders, and acknowledge how my position could impact the questions I asked or the information provided to me. My role as a public health advocate may have enabled some health community stakeholders to speak more openly but also limited the openness of food industry actors. My insider perspective as an advocate did enable access to ATIP documents from other health stakeholders that likely would not have been shared if I was solely a researcher. Lastly, my position may have hindered my ability to speak with media. I have been a media spokesperson on these topics along with other NCD and CDOH issues. Instead of viewing me as a researcher, the media stakeholders who I reached out to for participation in key informant interviews could have looked at me as a "source" and found it difficult for our roles to be reversed. To overcome this lack of participation from the media as a key stakeholder, I devoted a whole method and section to media analysis in an attempt to capture how the media influenced and was used by other stakeholders during the policy processes.

It should be noted that the findings and my analysis often highlight weaknesses and missteps on behalf of all stakeholder groups. This is particularly important to note given that I have been employed by the Heart & Stroke Foundation of Canada throughout this research study, and my findings suggest the organization, along with others, were perhaps plagued with food industry conflict of interests that hindered their ability to be unbiased and evidence-based nutrition advocates. As a researcher and practitioner working in the field, it is important to be impartial and present the research findings as they are without fear of condemnation. I am grateful that my employer recognizes the importance of this research and the reflective exercise it entailed.

7.8 Knowledge translation

This research study includes valuable insights that can support public health advocates as they try to influence nutrition policy both in Canada and around the globe. To share the findings of the three methods, each paper will be submitted to a peer reviewed journal. The lobby analysis paper will be submitted to the Canadian Medical Association Journal who have in the past published studies on stakeholder influence around healthy eating strategies. The stakeholder interview paper will be submitted the Canadian Journal of Public Health with an aim to better inform public health professionals about how evidence is used and misused within the policy system. Lastly, the media paper will be submitted to the Canadian Journal of Media Studies as it aligns with their interdisciplinary mandate. Lastly, the culmination of my findings will be submitted as a presentation abstract to the European Public Health Conference happening in November 2022. This enables me to share my learnings outside of a Canadian audience and engage in dialogue with advocates working in other jurisdictions.

7.9 Conclusions

This thesis set out to clarify, capture and assess how stakeholders and related contextual factors influenced the trans fat and sodium reduction policy processes which resulted in voluntary agreements. Based on the three distinct but complementary methods and related findings, as applied to political science theories and public health frameworks an illustration of the policy process can be formulated which suggests that stakeholders did in fact have a strong influence on the policy processes and government decision making.

The lobby analysis captured the extensive reach and resources available to the food industry, which provided ample opportunity for communications and influence with key government decision makers. As explained by the ACF and depicted in Figures 7 and 8, the food industry out-resourced and out-lobbied the public health sector on both trans fat and sodium reduction cases which supports the rationale as to why the government adopted industry friendly voluntary agreements.

Stakeholder interviews and the application of the Malekinejad et al. conceptual model on evidence to policy discordances show that while the health stakeholders were faced with obstacles related to political ideologies and industry friendly values, adaptation of policy analysis and recommendations enabled an alternative solution to regulation (a structured voluntary agreement) that still provided some public health benefit as it reduced trans fat content in the food supply and population intake levels. It can also be said that this incremental approach which left some trans fat in the food supply set the stage for the next government to fully ban trans fat. On the contrary, stakeholder interviews

also captured the unwanted evidence discordances including a massive rift in the public health interpretations of the evidence base that were strategically used by the food industry and government to halt adoption of sodium reduction measures. The Malekinejad et al. framework provided a very useful conceptual guide to clarify the various barriers that prevented the SWG recommendations from being adopted. This evidence oriented conceptual model is strategically supplemented onto the ACF in Figures 7 and 8 to add further details and interpretation around the role of use of evidence within policy subsystems. As depicted, too many discordances in the sodium policy subsystem meant policy adoption was unlikely regardless of how the other components of the ACF worked favourably.

Lastly, the media analysis offered insight into how the media portrayed these nutrition issues and how the voices of various stakeholders were presented. While the findings showed favour towards the health stakeholders as the most quoted voices in both cases, it was evident that the sodium media coverage may have been less beneficial in pushing for policy adoption. Sodium articles did not feature health risks in the same detail, were less likely to mention policy and regulation and showcased the divergent evidence base more often. Furthermore, it was found that right winged media outlets were less likely to feature trans fat and sodium articles or include criticism of the government's failure to implement the SWG and TFTF recommendations.

Overall, the ACF and supplementary frameworks enabled a better understanding of how stakeholders influenced the policy process and the insight from each case can be utilized to advance effective nutrition policy going forward. Excess sodium intake remains a public health concern in Canada and around the world. Ideally, the barriers experienced by public health stakeholders in the Canadian sodium reduction case can be more easily overcome in the future as a result of this research which captures and assesses how stakeholders influenced the past reduction efforts.

8. Integrating DrPH Statement

The DrPH at LSHTM program aims to "equip its graduates with the knowledge and experience to deal with the particular challenges of understanding and adapting scientific knowledge in order to achieve public health gains as well as the analytical and practical skills required by managers and leaders in public health." I started the DrPH program in 2013 after working in public health policy for a few years at various NGOs, hopeful I would be able to further explore the intersections of public health, political science and organizational leadership. The content below captures how each component of the DrPH program has facilitated my growth as a public health professional.

1. Taught Component

I began the DrPH program as a full-time student and immersed myself in the opportunity to learn from some of the most accomplished scholars in the field. I was most familiar with the materials taught in the evidence-based public health practice (EBPHP) course, however the depth and breath of teachings was invaluable and enabled my growth in many areas. Most importantly, I learned the intricacies of critical appraisal for evidence, and was able to apply skills in this area through class assignments and in the real world while I worked at Heart and Stroke Foundation. I also found the focus on various policy process theories to be very helpful and enabled me to better understand how and why past policy decisions were made. As a public health advocate who had worked to influence a far-right government, it was comforting to discover the barriers to healthy public policy adoption had been well documented and researched in the literature.

The Understanding leadership, management, and organization (ULMO) course was more novel, as I was less experienced in issues of organizational change and strategic planning. In learning about organizational behaviour and culture, I was drawn to theories about change management and leadership. At the time, my employer was undergoing a massive shift, moving from 10 regional chapters to 1 national entity. With this "unification" came a lot of change and uncertainty and I was grateful to be granted the chance to learn about change while living through it. The LMD deepened my understanding of how public health organizations can successfully navigate change, and how they can best position themselves to meet their mandates. This sparked my interest for the next stage of my DrPH training.

2. Organizational Policy Analysis (OPA)

The second component of the DrPH programme was the OPA which allows students to "observe closely the workings of a public health organisation or a policy community, and from this develop a better understanding of how to design and develop effective public health organisations and/or shape public health policy." Given that I was employed with HSF and needed to return to work after the taught component in London, it was deemed most appropriate to conduct my OPA at my current organization. This was beneficial as my course work had already given me ideas for further exploration based on what I experienced in my day-to-day work. I was placed under the organization's strategy department and choose to assess how the current organization change (unification) was impacting the ability to influence obesity prevention policy. The OPA was entitled *The Heart and Stroke Foundation of Canada: how organizational change has affected work on obesity prevention and policy* and used documentary analysis, an online staff survey and key informant interviews for data collection. Business management and political science models/frameworks including the McKinsey 7S Model, Mintzberg's Organizational model, Kotter's 8

Step Model of Change and the Advocacy Coalition Framework guided thematic analysis and shaped results presentation.

3. Research thesis

The final component of the DrPH was the research thesis. At this point in time I moved to part-time studies as I was employed full-time and needed more work/life balance. While my original thesis proposal looked at obesity and nutrition policy in Canada, I realized there were other nutrition policy processes that needed investigation before I could start to unwrap what was currently going on related to obesity prevention in Canada. While advocating for restrictions on food and beverage marketing to children, I began asking my HSF supervisor a lot of questions about the historical efforts to reduce trans fat and sodium and he suggested that my inquisitive interest in the topic would translate to a research study.

This was an ideal thesis topic as it enabled me to utilize theories and skills from my DrPH course work and assess how public health organizations like HSF had worked in the past (before unification) to influence policy change. I eagerly looked at various policy process theories for one that would capture the complex nature of the trans fat and sodium reduction cases. The ACF which we discussed in detail during the EBPPH course and was applied in my OPA on a mirco level, was now ready for application externally to a large-scale policy problem.

Overall integration and professional growth

[redacted] I also started a family and took two maternity leaves when we welcomed our sons. Altogether, I've been pursuing the DrPH for over 8 years but with various "breaks" from my studies. I'm extremely proud to have reached this point of completion while balancing some health issues, becoming a wife and mother as well as working full-time in a demanding role.

As I look back on how the DrPH has enabled my professional growth, I am grateful for all the skills and connections I've made during my training. In my role with HSF, I often utilize my newly acquired skills in critical appraisal and analysis, strategic planning, stakeholder analysis and the principles of health economics. My thesis research taught me the importance of expanding communication framing and arguments for health policy into economic and ideological subject matters. I've begun to use this lesson as I advocate for other healthy public policies, and I'm proud to have arranged health economic assessments/studies to strengthen the evidence base and better position our campaigns on sugary drink taxes and e-cigarettes.

Most importantly, I'm grateful for the network of new colleagues that this program introduced me to. I've kept in touch with a handful of my classmates, and relied on them for support with various topics encountered during my career. The DrPH program brings together highly intelligent, motivated and hard-working public health professionals and I'm grateful to have had the chance to learn beside them and form some long lasting friendships. I look forward to leveraging these personal connections, the acquired leadership skills and my newfound expertise in the health policy decision making process to improve public health in Canada.

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10. Appendices

Appendix 1. Letter confirming ethics approval for this study

London School of Hygiene & Tropical Medicine
Keppel Street, London WC1E 7HT
United Kingdom
Switchboard: +44 (0)20 7636 8636

www.lshtm.ac.uk

Observational / Interventions Research Ethics Committee

Ms. Lesley James
LSHTM

21 December 2015

Dear Ms. James ,

Study Title: Nutrition policy in Canada: Analysis of trans fat and sodium policy processes

LSHTM ethics ref: 10454

Thank you for your application for the above research, which has now been considered by the Observational Committee.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Conditions of the favourable opinion

Approval is dependent on local ethical approval having been received, where relevant.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document Type	File Name	Date	Version
Investigator CV	LesleyJames_CV 2015	12/11/2015	1
Protocol / Proposal	LJ DrPH Review - FINAL post review	13/11/2015	1
Information Sheet	INFORMATION SHEET DrPH	13/11/2015	1
Information Sheet	Informed Interview Consent Form	13/11/2015	1
Advertisements	Email invite DrPH	13/11/2015	1

After ethical review

The Chief Investigator (CI) or delegate is responsible for informing the ethics committee of any subsequent changes to the application. These must be submitted to the Committee for review using an Amendment form. Amendments must not be initiated before receipt of written favourable opinion from the committee.

The CI or delegate is also required to notify the ethics committee of any protocol violations and/or Suspected Unexpected Serious Adverse Reactions (SUSARs) which occur during the project by submitting a Serious Adverse Event form.

At the end of the study, the CI or delegate must notify the committee using an End of Study form.

All aforementioned forms are available on the ethics online applications website and can only be submitted to the committee via the website at: http://leo.lshtm.ac.uk

Additional information is available at: www.lshtm.ac.uk/ethics

Yours sincerely,

[redacted]

Professor John DH Porter
Chair

ethics@lshtm.ac.uk
http://www.lshtm.ac.uk/ethics/

Appendix 2. Consent form

Project title: Nutrition policy in Canada: Analysis of national trans fat and sodium policy processes

Project lead: Lesley James, MPH, DrPH (c)
Doctor of Public Health Student, London School of Hygiene and Tropical Medicine, Department of Public Health Policy
15-17 Tavistock Place
London, WC1H 9SH, United Kingdom

Consent by participant

1. "I have read the information sheet concerning this study and I understand what will be required of me and what will happen to me if I take part in it."
2. "My questions concerning this study have been answered by the interviewer."
3. "I understand that at any time I may withdraw from this study without giving a reason."
4. "I agree to be interviewed for this study."
5. Please circle one of the following options as appropriate:
    a. "I agree to be quoted anonymously in any reports or publications arising from this study."
    b. "I do not agree to be quoted, even anonymously, in any reports or publications arising from this study."

Name of participant_____

Signature _____ Date _____

Please sign and return this form indicating your consent to take part in the interview to Lesley James at lesley.james@lshtm.ac.uk.

Appendix 3. Information sheet

Nutrition policy in Canada: Analysis of national trans fat and sodium policy processes

Background

Project lead/researcher Lesley James is a doctor of public health (DrPH) student researcher at the London School of Hygiene and Tropical Medicine in the UK. This information sheet pertains to the student's research project entitled *Nutrition policy in Canada: Analysis of national trans fat and sodium policy processes*, which will lead to the production of a thesis and doctoral degree obtainment. The purpose of the DrPH programme is to equip students with the experience to deal with the particular challenges of understanding and adapting scientific knowledge in order to achieve public health gains, as well as the analytical and practical skills required by managers and leaders in public health. The DrPH therefore has a dual focus on developing both expertise to conduct and evaluate research and skills crucial for leadership roles in public health policy and practice.

Lesley James has also been an employee of the Heart and Stroke Foundation of Canada (HSF) for five years working in various health promotion and health policy roles. Lesley was not involved in the historical advocacy efforts on behalf of HSF related to trans fat and sodium reduction policy, and will be using the trans fat and sodium cases as an opportunity to learn about and understand the process for making nutrition policy in Canada. This explorative research study aims to advance the understanding of public health policy and your participation in the study should be viewed as a contribution to the student's educational pursuits with the potential to advance research in public health and disease prevention.

The particular public health area of interest related to the research project is nutrition policy making. Nutrition has been shown to be a key risk factor in chronic disease prevention and the issues of trans fat and sodium present key opportunities to study the process for making nutrition policy in Canada. World Health Organization has placed calls for action on both trans fat and sodium reduction, and similarly, both nutrition issues have made it onto the political agenda in Canada within the past 15 years. The study will investigate the role of key stakeholders and contextual factors in influencing the policy process.

Aim of this study

The aims of the research is to analyse, understand and explain the nutrition policy process in Canada through the lens of trans fat and sodium policies.

The objectives are to:

4. Clarify and understand the processes around trans fat and sodium reduction policy measures in Canada;
5. Apply a policy process theory to explain and analyze these nutrition policy processes;
6. Provide public health nutrition practitioners with a better understanding of the complexities in policy making in Canada.

Your participation
Your participation in the research is voluntary and will be entirely confidential and anonymous. Your identity will not be attached to quotations used in the report or any further publications. As per the consent form presented to, you may request not to be included in the project without having to give a reason.

What value has the study for you?
You will be contributing to the professional and educational development of the project lead. Your participation will provide useful insight and perspective on the process for making nutrition policy in Canada. The analysis of the trans fat and sodium reduction cases may be used to inform public health practitioners about the complexities of policy making.

How confidentiality will be ensured?
All information regarding identify collected during the interviews will be kept strictly confidential and anonymous. The only personal identifiers used will be a high level grouping (eg. government, academia/researcher, NGO, media, food industry or health care organization) as well as your membership on the government appointment trans fat and/or sodium task force/working groups if relevant. Any reports and/or publications ensuing from this research will not include individual names but instead will refer to affiliation with groups identified above. Please read, sign and return the attached consent form to the researcher at the time of the interview.

Costs and/or payments for participation in research
There will be no costs and or payments for participating in the interview.

Ethical approval
The London School of Hygiene & Tropical Medicine Ethics Committee have approved the study.

Further information
Should you have any questions about this interview please feel to contact me directly. Thank you very much in advance for your cooperation with this study.

Yours sincerely,

Lesley James
Doctorate of Public Health (c)

London School of Hygiene & Tropical Medicine

Department of Public Health and Policy

15-17 Tavistock Place, London WC1H 9SH

United Kingdom

Email: lesley.james@lshtm.ac.uk

Tel: 613-889-0132

Appendix 4. Topic Guide

Thanks again for agreeing to speak with me today. I appreciate your time and contribution as it will be very valuable to my doctoral research project.

Before we begin, could you please sign the consent form and indicate your preference for being quoted.

Are you comfortable with this interview being recorded?

I'm very pleased you have agreed to join me today. I'm here to speak with you today about the policy processes around nutrition policy in Canada related to sodium and trans fat reduction or both.

I have a series of 6 main questions. There are no right or wrong answers. Please answer to the best of your ability. Your perspective is very important and will shape the outcomes of my research project. It's important that I include a range of perspectives.

I'll be conducting key informant interviews with a wide range of individuals who were involved in the policy development processes. I also welcome recommendations around other people you would suggest I speak with.

Brief intro – I'm a doctoral student at the London School of Hygiene and Tropical Medicine studying in the public health policy faculty. I also work for the Heart and Stroke Foundation as a Senior Manager of Health Policy. I've been with the Foundation for about 5 years in various roles. I was not involved in historical policy negotiations around trans fat or sodium reduction, however my organization was. I am currently working on nutrition policy files at HSF but these are mainly related to sugar reduction. This research project is not connected to HSF.

1. ***General info about policies*** - Can you tell me about trans fat and/or sodium reduction policies in Canada?
2. ***Your involvement***- How were you involved with the policy making process around trans fat and/or sodium reduction in Canada? PROBE FOR ORGANIZATIONAL AFFILIATION, POSITION ON ISSUE AND TIME SPENT ON FILE.
3. ***Motivations*** - What do you think were the motivations and drivers for the policies on trans fat and sodium?
    a. PROBE HOW DID THESE ISSUES END UP ON THE POLITICAL AGENDA? PRIVATE MEMEBERS BILL? ROLE OF INTERNATIONAL PRESSURE? ROLE OF PUBLIC HEALTH ADVOCATES? ROLE OF EVIDENCE ON THE MATTER?

4. ***Process*** – can you tell me about the process of getting to these policies

    a. Role of various groups? Sub groups? Groups outside the inner work groups? Who was involved? Who was the most vocal? Who held the power in these groups?

    b. Were any dominant perspectives held, and how was that managed / and lead by the moderator or chair? Was there consensus or was it a majority rules?

5. Voluntary approaches –

    a. What are your thoughts about voluntary approaches as policy solution in the trans fat /and sodium policy processes?

    b. What moved the policy solution to a voluntary approach when the trans fat task force recommended regulations? What caused the government to limit the mandate of the Sodium Work Group to voluntary measures?

6. ***Summary*** –

    a. What do you think are the **barriers** to influencing nutrition policy in Canada? PROBE DID THESE BARRIERS PROHIBIT EFFECTIVE POLICY? HOW WERE THE BARRIERS OVERCOME?

    b. What are the **facilitators** to influencing nutrition policy?

if able to comment on both trans fat and sodium……

    *c. do you think there are **differences** between the two policy solutions?*

        i. Probe about possibly account for these different outcomes? PROBE WHAT MADE TRANS FAT POLICY A RELATIVE SUCCESS AND SODIUM POLICY LESS SUCCESSFUL?

    d. How do you see these issues being addressed in the **future** given the change in government? PROBE: What caused trans fat regulation and sodium reduction to become Liberal Party of Canada election platform and mandate issues? What else will it take to address the issue though policy?

7. Any other information you'd like to share about the processes or the trans fats and sodium reduction cases? Can you recommend anyone else I should speak with?

Thank you again for your time and insight. I'll be in touch if I have any follow-up questions or require clarification.