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Changing the Narrative About Social Determinants of Health: Testing messaging with Ontarians

By

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Abstract

Social determinants of health (SDOH) are conditions in which people live, such as physical environment or political context, which impact health. In Canada, SDOH are the greatest determinants of life expectancy. Despite evidence that broader social structural factors are key determinants of health, a majority of the public Ontario hold an individualistic view of health and do not see the government as having a role in decreasing health inequities. It is imperative to address the gap between public opinion and existing evidence as governmental policy will have the greatest effect on decreasing health inequities caused by SDOH. This thesis is a two-phase project. Phase one is a media content analysis and literature review, which inform the development of messages about SDOH and health inequities to deliver to the public. Messages reflect current Canadian media portrayals of SDOH and health inequity, as well as a wide range of narrative styles. Phase two includes an experimental study testing the efficacy of these different narrative message styles. The goal of this work is to determine the most impactful message style, specifically for subgroups which have been hypothesized as more difficult to reach. Changing the current public narrative about SDOH will contribute to changing attitudes and political will, and eventually to achieving social justice through related health policy in Ontario.

Acknowledgements

Table of Contents

LIST OF FIGURES AND TABLES

Introduction

Health inequities are systematic, avoidable, and unjust differences in health between populations (Braveman, 2006). These differences in the health of populations are often determined by social factors such as income, education level, race, or gender, which are referred to as social determinants of health (SDOH). In 2008, the World Health Organization (WHO) released a report on SDOH and health inequity, stating that "…reducing health inequities is… an ethical imperative" (WHO, 2008, p. 26). Without strong SDOH, health inequities arise that place already marginalized populations at a further disadvantage in terms of their health. According to the WHO's report, people living in Japan and Sweden have average life expectancies of over 80 years, but for citizens of Brazil the average lowers to 72, for India it is 63 years, and in some countries the average life expectancy is less than 50 years. Although personal autonomy has a role to play in health it is ultimately social factors that determine these patterns of health inequity. Any socially-based health inequity is avoidable, making negative effects of SDOH an issue of social justice.

The pattern of health inequities between countries also manifests within countries. Within Canada, SDOH are the greatest predictors of life expectancy (Mikkonen & Raphael, 2010). As products of social contexts, political climate and policy greatly affect SDOH. It is widely recognized that policy change is the most effective way to strengthen SDOH and reduce health inequities (Mikkonen & Raphael, 2010; WHO, 2008). While Canada spends a great amount of money on health care in comparison to other wealthy nations, it is not developing policy and focusing energy and funding on maintaining a strong social safety net (Mikkonen & Raphael, 2010). Likewise, in Ontario – Canada's most populous province – there has been action to create more equitable access to health care, but little policy development focused on strengthening

other SDOH (Kirst et al., 2017; Lofters, et al., 2014). Due to the considerable impact of social

determinants on health, "what good does it do to treat people's illnesses, to then send them back

to the conditions that made them sick?" (Mikkonen & Raphael, 2010, p. 5).

This thesis project builds on past work by Dr. Maritt Kirst and colleagues, focusing on

public opinion in regard to SDOH and health equity in Ontario. Kirst and colleagues conducted a

series of analyses in order to gain an understanding of current public opinion on health inequities

in Ontario. Using random digit dialing, survey data was collected from 2,006 Ontarian adults.

Findings from this study suggest that many Ontarians are unaware that health inequities exist

between the rich and the poor, do not believe that major changes in society need to take place to

address health inequities, and do not see the government as having a responsibility to address

health inequities (Kirst et al., 2017). These findings show that it is necessary to raise Ontarians'

consciousness about the causes of health inequity in the province. The purpose of raising

awareness among the public about SDOH and health inequities is to increase the salience of

these issues in Ontario, which will in turn increase political will to act through effective public

policy on SDOH and health inequity.

This thesis project sought to determine the best messaging techniques for delivering

information about SDOH to the Ontario public and will focus specifically on raising awareness

with populations previously identified as more difficult to reach. The preceding literature review

shows that shifting the dominant narrative about an issue can influence public attitudes and

opinions and that public opinion can influence health policy outcomes in democratic countries

(Davidson, 2016; Jones & McBeth, 2010; Mikkonen & Raphael, 2010; WHO 2008). This paper

will cover the principal aim and specific research questions of the thesis project, a layout of the

theoretical framework, methods, results, and a discussion of relevant ethical considerations and potential limitations and implications of this work.

<div align="center">**Literature Review**</div>

Conceptualizing Social Determinants of Health in Canada

In North America, the term health has been co-opted by industry and is often subjective and steeped in underlying social connotations. Metzl (2001, p. 2) states that "… the term is used to mark moral judgements, convey prejudice, sell products, or even to exclude whole groups of persons from health care". Therefore, a definition of health needs to be as inclusive as possible and consider power, equity, and justice (Prilleltensky & Prilleltensky, 2003). This particular research project conceptualizes health by using the World Health Organization's definition which Prilleltensky & Prilleltensky (2003, p. 198) summarize as "…more than the absence of illness, [health] comprises positive physical and emotional features that enable individuals and groups to pursue their goals in a context of equality and justice".

Mikkonen & Raphael lay out 14 explicitly Canadian SDOH in their pivotal report titled "Social Determinants of Health: The Canadian Facts". According to this report, the 14 Canadian SDOH include Aboriginal status, gender, disability, housing, early life, income and income distribution, education, race, employment and working conditions, social exclusion, food insecurity, social safety net, health services, and unemployment and job security (Mikkonen & Raphael, 2010, p. 9). This is, by no means, an exhaustive list of SDOH in Canada. Additionally, the act of listing out each SDOH separately is not intended to suggest that there is no overlap or relationship between SDOHs. In fact, as indicated in the descriptions to follow, all SDOH are related, and those effected negatively do not experience any SDOH from the list in isolation. However, for our purposes the list provided by Mikkonen & Raphael offers a well-established

way of conceptualizing SDOH within Canada (2010). Each of the social determinants described in the report are affected by systems-level injustices and are inter-related and inter-woven in complex ways.

Aboriginal status.

It is important to note that some Indigenous scholars reject the inclusion of "Aboriginal Status" as a SDOH, as it does not aptly attribute the true causes of inequity to racism, but instead could be interpreted as status alone leading to poor health. In reality, it is the exclusion, active disregard, and structural racism of the state that contributes to determining the health of Indigenous peoples (Loppie, Reading, & de Leeuw, 2014). This manifests in many ways. Loppie and colleagues explain, "experiences of harm and lack of trust can translate into diminished utilization of serevices critical to Aborignal peoples' health…" (p. 9, 2014). The average life expectancy of Indigenous peoples ranges from 5 – 14 years less than that of non-Indigenous Canadians, while infant mortality rates range from 1.5 – 4 times greater than that of non-Indigenous infants (Mikkonen & Raphael, 2010). The structural and institutional racism towards Indigenous people in Canada is exemplified by the country's vote for adopting the United Nations Declaration of the Rights of Indigenous Peoples (UNDRIP); Canada was one of only four countries to vote *against* UNDRIP, while 143 countries voted for the adoption of the declaration (Mikkonen & Raphael, 2010).

Gender identity and sexual orientation.

Specific gender identities and sexual orientations are subject to social inequities, which in turn affect health. In terms of sexual orientation, those identifying as LGBTQ+ experience more discrimination compared to people who do not identify as LGBTQ+, which results in increased stress levels and poor health (Mikkonen & Raphael, 2010). In terms of gender identity, men in

Canada experience more extreme forms of social exclusion, have higher suicide rates, and make up 95% of the prison population, all of which contribute to a shorter life expectancy compared to other genders (Mikkonen & Raphael, 2010). On the other hand, Canada holds a very low rank – 19th out of 22 countries – when it comes to reducing the wage gap between men and women (Organisation for Economic Co-operation and Development, 2009). Women tend to have the unfair burden of more responsibilities (e.g., raising children, housework), lower paying jobs, and women experience more work-place discrimination (Mikkonen & Raphael, 2010). Additionally, the lack of affordable and good quality childcare services also puts more of a burden on women. All-in-all, while women have a greater average life expectancy when compared to men, women's lives involve more long-term disabilities and chronic diseases.

Disability.

The Canadian government's support for those with disabilities is alarmingly low. More than 40% of Canadians with disabilities are unemployed and Canada provides some of the lowest benefits to people with disabilities, ranking number 27 out of 29 countries studied (Mikkonen & Raphael, 2010; Organisation for Economic Co-operation and Development, 2003). The effects of unemployment and low-income result in undue and ongoing health issues for people with disabilities (Mikkonen & Raphael, 2010).

Housing.

A lack of appropriate and safe housing has numerous negative effects on health. For example, homelessness or precarious housing can lead to stress, unhealthy coping mechanisms, and exposure to the elements (Mikkonen & Raphael, 2010). People experiencing homelessness are likely to experience more physical and mental health problems and are 8 – 10 times more likely to suffer an early death compared to the rest of the Canadian population (Mikkonen &

Raphael, 2010; Hulchanski, 2007). Canada's housing crisis has caused the prices of housing to rise above the cost of living. Canada is also accused of not fulfilling its guarantee of providing shelter, as outlined in several human rights agreements (Mikkonen & Raphael, 2010).

Early life and childhood development.

Early life and childhood development can affect health in several ways. There are three types of effects: latency, pathway, and cumulative (Mikkonen & Raphael, 2010). Latency effects are factors during early life that predispose children to poor (or good) health. Pathway effects are factors that lead children to situations which have a poor impact on health. Finally, cumulative effects refer to the length of time that a child is exposed to poor conditions in early life; the longer and harsher the conditions, the greater the effect on health. In Canada, 15% of children live in poverty and only 17% of families have access to affordable and high-quality childcare (Mikkonen $ Raphael, 2010; Organisation for Economic Co-operation and Development, 2008).

Income and income distribution.

Income and income distribution are often considered the most important SDOH. This is because income shapes many things such as living conditions, psychological functioning, health-related behaviours, and other SDOH such as food security, housing, and social exclusion (Mikkonen & Raphel, 2010; Auger & Alix, 2009). In Canada, services including childcare, housing, post-secondary schooling, and recreation are paid for by individuals whereas many similarly wealthy countries provide these services as citizen rights (Mikkonen & Raphael, 2010). Canada is also one of two wealthy and developed countries out of the 30 countries listed to have the greatest increase in income inequality and poverty during a 10-year span (Mikkonen & Raphael, 2010; Organisation for Economic Co-operation and Development, 2008; Wilkins,

2007). Canada's increasing wage gap, disappearing middle class, and lack of services are severely influencing the health of many of its low-income citizens.

Education.

Education is associated with several of the other SDOH such as income, employment security, and working conditions (Mikkonen & Raphael, 2010). In Canada, parental education level predicts a child's school performance. There are two plausible mediating variables affecting this correlation. One is the lack of affordable early learning programs in Canada. The second is the cost of post-secondary education; in countries that provide free post-secondary schooling, this link is much weaker than it is in Canada (Mikkonen & Raphael, 2010).

Race.

Systematic racial discrimination means that race is a determinant of health and life expectancy. Due to exclusion and racism, people of colour in Canada experience many of the interdependent SDOH such as social exclusion, income inequality and more unemployment rates when compared to Canadians of European descent (Mikkonen & Raphael, 2010; Statistics Canada, 2003). Even among immigrants to Canada, the health of immigrants of colour declines overtime compared to European immigrants (Ng, Wilkins, Gendron & Berthelot, 2005).

Employment and working conditions.

Employment and working conditions have clear links to low income and education level and are therefore the result of systematic injustices at play in Canada. High-stress workplaces and jobs with an imbalance between demands and rewards cause health problems such as high blood pressure, cardiovascular diseases, physical difficulties, depression, and anxiety (Mikkonen & Raphael, 2010). In Canada, 30% of workers report feeling as though their job puts their health at risk while 33% of men and 12% of women work more than 40 hours a week (Mikkonen &

Raphael, 2010). Canadian employers and policy also allow for less vacation time compared to many European countries (Ray & Schmitt, 2007).

Social exclusion.

Social exclusion within Canada normally applies to Indigenous people, people of colour, recent immigrants, women, and people with disabilities (Mikkonen & Raphael, 2010). Those who are socially excluded typically have less employment or lower income and less access to both social services and positive health outcomes. Social exclusion contributes to a sense of powerlessness, which can lead to depression or several other chronic diseases (Mikkonen & Raphael, 2010). It is important to note that Canada's labour market contributes to social exclusion because people of colour and recent immigrants are more likely to have a poor-quality job compared to the rest of the population (United Way of Greater Toronto, Institute for Clinical Evaluation Sciences, & Statistics Canada, 2010; Statistics Canada, 2003.)

Food insecurity.

Food insecurity refers to the inability "…to have an adequate diet in terms of quality or quantity" and it affects 9% of Canadian families (Mikkonen & Raphael, 2010, p. 26). Food insecurity is more likely to affect families with children, single mothers, and Indigenous families and is therefore related to other SDOH (Mikkonen & Raphael, 2010). Additionally, food insecurity can cause chronic diseases as well as difficulty managing diseases due to potential dietary deficiencies (Mikkonen & Raphael, 2010).

Social safety net.

A social safety net is a "…range of benefits, programs, and supports that protect citizens during various life changes that can affect their health" (Mikkonen & Raphael, 2010, p. 35). When compared to other wealthy countries Canada has a poor social safety net, spending less

money federally on early childhood education and care, seniors' benefits and supports, social

assistance payments, unemployment benefits, benefits and services for people with disabilities,

and supports and benefits for families (Mikkonen & Raphael, 2010; Organisation for Economic

Co-operation and Development, 2009). This is reflective of Canada's current neoliberal political

and economic climate, as reliance on a privatized market and individualized resilience does not

benefit the collective (Nelson, 2013; Wilkinson, 2009).

Health services.

Health services go hand-in-hand with a social safety net. Compared to other wealthy

countries, the Canadian health care system ranks 22nd out of 33 OECD nations in terms of total

health care coverage (OECD, 2009). Aspects of health care usually covered by the government

in wealthy countries, such as the cost of drugs or nursing and home care, are not covered in

Canada. Therefore, low-income Canadians are three times *less* likely to fill prescriptions and

60% less able to receive necessary tests and treatments when compared to those with an above

average income (Mikkonen & Raphael, 2010). Additionally, only 26% of low-income Canadians

have access to a dental plan (Mikkonen & Raphael, 2010). Low income Canadians also face

barriers to seeing specialists, getting care on weekends or evenings, and are more likely to wait

five or more days for appointments with a family physician than high income Canadians

(Mikkonen & Raphael, 2010).

Unemployment and job security.

Unemployment and job security affect Canadians because job insecurity has been

increasing over the past few years (Tremblay, 2009). Insecure employment usually involves

intensive jobs and irregular work hours, and Canada is ranked only 26 out of 28 countries when

it comes to protecting temporary workers (Organisation for Economic Co-operation and

Development, 2010). Unemployment or insecure employment can lead to stress, the adoption of unhealthy coping behaviours, depression, anxiety, and increased suicide rates (Mikkonen & Raphael, 2010).

Public Opinion and Policy Change in Canada

When trying to combat health inequity and the negative effects of SDOH in Canada, the way to achieve the most overarching and preventive change is through public policy (Mikkonen & Raphael, 2010; WHO, 2008). Research shows that public opinion influences policy change, especially for salient issues (Fischer et al., 2016; Burstein, 2003). A WHO report by the Commission of Social Determinants of Health outlines the public's role in policy change:

> *The role of governments through public sector action is fundamental to health equity. But the role is not government's alone. Rather, it is through the democratic processes of civil society participation and public policymaking, supported at the regional and global levels, backed by the research on what works for health equity, and with the collaboration of private actors, that real action for health equity is possible.* (WHO, 2008).

The previous section laid out a Canadian conceptualization of health and SDOH for the purposes of this study, but it is important to distinguish that definition of health from the public's understanding of health. Canada's political context influences the public's understanding of health, which in turn influences the way the public attributes causes of health inequities. Ultimately, this affects the types of policies that the public supports.

Canada's political context.

While the individual provinces and territories that make up Canada each have their own unique histories and contexts, it is important to consider the overarching economic and political

trends at a federal level, which inherently have an effect over the ideologies and worldviews of citizens from coast to coast. One such trend is neoliberalism, as nation-wide neoliberal ideologies impact Canadian understandings of equity and health. Nelson (2013, p. 212) explains, "neo-liberalism is based on the assumption that unfettered markets are the best way of allocating resources in a society and globally, and emphasizes individualism, competition, and reliance on oneself and the market rather than on the state". The beginnings of neoliberal markets coincide with the expansion of the global market. Technological advances allow for a global trade system and mass production of products unlike ever before, creating a competitive and quickly growing global economy (Saint-Arnaud & Bernard, 2003; Banting, 1992). There is a clear connection between increasing neoliberal ideals and increasing inequities within developed countries (Nelson, 2013).

In 2008, almost a quarter (24%) of American income went to the top 1% of wealthy citizens, with the other 76% of income distributed across 99% of US citizens (Nelson et al., 2013). Canada's individual-focused market economy closely models that of the United States (Coburn, 2004; Saint-Arnaud & Bernard, 2003). There has been a definite shift since Brian Mulroney's ministry (1984 – 1993) to a neoliberal philosophy (Nelson, 2013) in Canada. Since the mid 1990s, Canada has shown similar economic trends as America with income inequality on the rise and the "middle class" (those earning $30,000 - $60,000 a year) on the decline (Yalnizvan, 2013).

We know that inequitable income distribution reflects inequitable health. Currently, Canada's healthcare system as well as cost of education and certain other factors of the nation's social safety net put Canada ahead of the United States in terms of preventing socially-based inequities, and citizens of the United States do have poorer health on average than Canadians

(Mikkonen & Raphael, 2010). However, the current lack of government support for policies that address the negative effects of SDOH, along with government cutbacks to services such as unemployment benefits and environmental policies, show that Canada is closer to mimicking the income and health inequalities of the United States than we perhaps like to believe (Mikkonen & Raphael, 2010). The current neoliberal climate in Canada is a barrier to creating social justice policy change towards reducing health inequities (Nelson, 2013).

Understanding and attributions of health.

Neoliberal political trends in Canada have played a role in shaping the public's understanding of health. There have been several Canadian studies on public opinion and understanding of SDOH and health equity showing that many citizens overemphasize the role of the individual when attributing causes of health outcomes. For example, a study done in Ontario reported that roughly 53% - 64% of study participants were aware of the health inequalities that exist between the rich and the poor, and only 58% believe that major changes in society need to take place in order to minimize these inequalities while 64% of participants do not believe that the government is responsible for addressing inequities in Ontarians' health (Shankardass et al., 2012; Kirst et al., 2017). Additionally, Lemstra, Neudorf, & Beaudin (2007) conducted a study with a large sample (N = 5000) of Saskatoon residents and examined residents' understanding of income-related health inequities. A majority of respondents incorrectly believed that health issues such as alcohol abuse, illegal drug use, smoking, and a lack of physical activity were solely the result of individual behaviour, without taking into account the social factors that influence all health outcomes. Furthermore, respondents incorrectly believed that it is equally likely for any individual to have a health problem such as mental illness, suicide attempts,

diabetes, and HIV/AIDS, regardless of income, again largely overlooking the social factors at play.

In another Canadian study by Reutter, Harrison, & Neufeld (2002), 1,203 Albertans were surveyed and asked about their understanding of the relationship between poverty and health. While 68% of participants reported a "structural" understanding of the relationship between health and poverty, or believing that people experiencing poverty have health outcomes that are due to social factors which lay outside of their control, there are still 17% or respondents who reported a "behavioural" understanding, or believing that people experiencing poverty have health outcomes completely due to individual decisions and behaviours. Similarly, results from an Ontario study show that people either attribute health inequities to the "plight of the poor" (58.3% agreement), the "privilege of the rich" (58.7% agreement), or "blame the poor" (43.1% agreement) (Lofters, Slater, Kirst, Shankardass, & Quiñonez, 2014). A "plight of the poor" understanding of SDOH means that respondents attributed health inequities to the disadvantages of the poor, as opposed to a "privilege of the rich" understanding in which respondents attributed health inequities to the advantages of the rich, or a "blame the poor" understanding of SDOH in which respondents attribute health inequities as the fault of the poor.

Policy support.

The public must see social determinants as the true cause of health inequity and call for governments to affect the change necessary to diminish these gaps as opposed to placing blame with the individuals affected. The current public understanding of health inequities, as laid out above, reflects low health literacy in Canada (Canadian Council on Learning, 2008; Rootman & Gordon-El-Bihbety, 2008; WHO, 2008). Health literacy has several definitions, but in this case it is conceptualized as the "…ability to access, understand, evaluate and communicate information

as a way to promote, maintain, and improve health in a variety of settings across the life-course"

(Rootman & Gordon-El-Bihbety, 2008, p. 11). Low health literacy exists within developed and

wealthy nations and is a large contributor to health inequity (WHO, 2008; Kickbusch & Maag,

2008).

This is because when the public does not understand the root causes of health inequity,

they are less likely to support policy changes that strengthen SDOH. In the study by Reutter et al.

(2002), those who chose a behavioural explanation were less likely to support government

spending for poverty policies in comparison to those who chose a structural explanation.

Similarly, in the Ontario study, participants who attributed health inequities to the "plight of the

poor" were more likely to also support targeted interventions, such as more subsidized nutritious

food for children (89%), encouraging more volunteers in the community (89%), and more

healthcare treatment programs (85%) (Lofters et al., 2014; Kirst et al, 2017). Nelson (2013)

describes the role of a Community Psychology researcher as a public intellectual and argues for

the researcher's duty in reframing any policy positions that blame an individual for a problem. In

order to affect policy change there must be engagement with knowledge translation so that the

public is informed about their options (Nelson, 2013). Hickman & Riemer (2016) make the case

for raising critical awareness about a problem as a first step towards engagement with complex

issues.

Policy learning and problem definition.

Increasing awareness and shifting public opinion around social issues is one way of

contributing to health policy change (Davidson, 2016; Fischer et al., 2016; Peacock, 2015;

Cerna, 2013; Nelson, 2013; Mikkonen & Raphael, 2010; Burstein, 2003). As Wlezien & Soroka

(2010, p. 3) state, "A principal function of representative democracy is to provide a

mechanism… through which public opinion and public policy are reliably and regularly

connected." In a democratic country, public support for an issue is necessary for getting issues

on the policy agenda, and moving policy change forward (Jones & McBeth, 2010). Cerna (2013)

describes this type of policy change as the theory of policy learning and describes policy learning

as shifting the beliefs of the public.

     A relevant example of policy learning in action is the recent federal legalization of

recreational cannabis use in Canada. By tracking different polls over the past few decades, one

can see the upward trend in support for cannabis decriminalization or legalization. Canadian

polls from the 1970s show support for legalization as low as 19% while a 2015 poll reported that

65% of Canadians supported decriminalization (Fischer, 2016). In response to high public

support, Liberal candidate Justin Trudeau incorporated legalization into his election platform. In

2015, Trudeau was elected into the federal office, reflecting the fact that public support for an

issue can influence the electoral agenda. In response to Trudeau's election, the issue of marijuana

legalization continued to be very important to the public and showed the second highest response

rate to online government surveys (after prostitution) with 30,000 survey responses in 2016

(Cullen, 2016). Finally, in 2017, the culmination of the public's support for the legalization of

recreational cannabis use and the addition of legalization into Trudeau's electoral platform

resulted in the federal government announcing the legislation to legalize cannabis in April 2017.

     In this example we see that policy learning and change is not always a direct path, but

somewhat of a back-and-forth interaction between policy-makers and the public. Policy learning

is an initial step towards policy implementation. Cerna (2013, p. 19) explains that "policy

implementation often takes place because a wide range of stakeholders interact between different

levels – thus both central policy-makers and local actors on the ground are important for

successful implementation." Increasing the health literacy of Ontarians and their understanding

of SDOH can empower citizens to gain control over their own health by raising awareness of

root societal causes of health inequities and increasing political engagement with policy change

(Mikkonen & Raphael, 2010; WHO, 2008; Kickbusch & Maag, 2008).

Changing the publics' understanding of a problem can also be thought of as changing

problem definition. Problem definitions are subjective ways of thinking about and explaining

issues (Portz, 1996). Problem definitions affect which issues get on the policy agenda and what

types of interventions are perceived as pertinent to the issues (Portz, 1996; Rochefort & Cobb,

1993). As Rochefort and Cobb explain, "From pollution, to child abuse, to AIDS, to illiteracy,

there are divergent perceptions of any problem's origin, impact, and significance within the

societal context" (1993, p. 56). Rochefort and Cobb describe four major themes of problem

definition, the first of which is causality. Herein lies the crux of health inequity problem

definition; shifting perceived understanding from an individual responsibility framework to a

framework that recognizes the responsibility and role of social factors in determining health.

Research shows that the best way of presenting a particular problem definition is through the

deliberate use of language and rhetoric, as "use of language is critical in determining which

aspect of a problem will be examined" (Rochefort & Cobb, 1993, p. 56).

Narrative Change

In line with policy learning and problem definitions, narrative change refers to shifting or

broadening existing worldviews of an individual or collective (Davidson, 2016). Narratives are

"…powerful, socially constructed mental models that shape our perception and understanding of

reality and thus guide individuals' decision-making and behavior" (Davidson, 2016, p. 2). In

order to increase the Ontario public's understanding of SDOH, there needs to be some review of

existing literature on what has been shown to effectively communicate this type of information in the past.

Science and statistical evidence certainly have their place in the decision-making process. However, research suggests that using narratives as opposed to didactic, fact-based messages is more effective when communicating complex, health-related information as well as more effective for communicating information in a way that can shift attitudes and behaviours (Pielke, 2014; by Hastall and Knobloch-Westerwick, 2013; Niederdeppe and Lundell, 2012). Pielke (2004) explains in his book *The Honest Broker: Making Sense of Science in Policy and Politics*, science is the most useful when decision-makers hold similar values and want a similar outcome. When dealing with complex issues such as SDOH in which the public and decision-makers across sectors may hold different values, it is not as effective to use statistical evidence. More often than not, statistics can be interpreted in a way that aligns with pre-existing values and is not a great tool for shifting understanding of a topic. It is important to create a complete picture of a situation and lay out all of the existing options for people so that true changes to values can be made (Pielke, 2004). Pielke argues that in order for the public to have the tools to affect policy change that aligns with their values, information on complex topics should be delivered in the form of narrative content.

This concept is reflected in a U.S. study conducted by Hastall and Knobloch-Westerwick (2013) on delivering health risk messages. When given an option between health risk related articles, participants were more likely to select articles that used exemplar evidence rather than statistical evidence. A second study by Niederdeppe and Lundell (2012) looked specifically at public campaigns addressing SDOH and health inequity. This study compared narratives to statistical evidence in the form of visual representations (i.e., charts, graphs, etc.). Just as Pielke

(2004) suggests, Niederdeppe and Lundell (2012) found that it was easy for the public to misinterpret the meaning of the charts. It is more likely that their pre-existing knowledge and values played a role in the interpretation of this visual statistical evidence. Furthermore, narratives were found to be superior when it comes to giving a full understanding of the causal relationship between social determinants and health. From this evidence, it is clear that narrative communication is preferable when dealing with this complex social issue.

Narrative change can lead to attitude change, which can impact policy decisions (Davidson, 2016; Jones & McBeth, 2010). This relates directly to the eventual large scale SDOH policy change that we hope to accomplish with this work. Davidson (2016, p. 7) describes how "narrative strategies play a particularly important role with respect to a particular type of policy change, in which there is large-scale change involving a fundamental redefinition or reframing of an issue". In fact, the name "narrative change" can be a little misleading; we are not necessarily concerned with *changing* the public's beliefs, but with *reframing* the dominant narrative of individually attributed health outcomes in Ontario. A previous study found that 98% of respondents already believe that everyone in the province deserves an equal opportunity to live a long and healthy life (Kirst et al., 2017). The point of progress therefore lies within presenting a new model for people to understand the root causes of health and what needs to be done in order for equal opportunity to become reality. For the purposes of this thesis, narrative change will serve to frame an issue (health inequity) through a new lens (SDOH) in order to increase the salience of the narrative of collective responsibility for health as opposed to individual responsibility and blame. This process will affect policy in three stages, as actors such as policy decision-makers and the public experience narrative change. First, the issue will become more salient to those who experience the new narrative, then the issue will be defined

differently, and finally the policy decision-makers and public who now feel qualified to express their opinions will use their authority on an issue where they may normally not (Davidson, 2016; True, Jones & Baumgartner, 2006).

Overall, narrative change "…is a means to the end of transformed power relationships, and greater social justice and realization of human rights" (Davidson, 2016, p. 17). Narrative change is a crucial step in a larger process leading to policy change and shifts in collective worldviews. This review demonstrates that there is strong evidence to show that policy change is an important way to combat health inequities caused by SDOH. Narrative change is not a short-term process but shifting the public's understanding of health is a crucial step in decreasing health inequities in Ontario.

Project Objectives

This thesis project is embedded within a larger and ongoing project, beginning with studies on public opinion of health inequity and SDOH related solutions in Ontario (Shankaradass et al., 2012; Lofters et al., 2014; Kirst et al., 2017). This thesis will build upon public opinion research by developing messages based on a media content analysis and literature review during phase one, followed by an examination of how messages resonate with particular subpopulations in Ontario during phase two. The goal of this research is to determine the optimum way to deliver information about social determinants of health (SDOH) and health inequities to the Ontario public, and to determine whether there are different styles of messaging that resonate better both with Ontarians overall and with specific key subpopulations. The principal aim for phase one of the research is to develop approximately four messages which represent a wide range of relevant narrative styles and accurately reflect recent Canadian media coverage of SDOH and health inequity. The principal aim for phase two of the research, in the context of this thesis project, is

to determine which message type is the most effective across the sample, and whether certain

subpopulations (Conservative voters, males, older participants, Canadian-born participants,

participants with a high socioeconomic status), which have been previously identified as less

knowledgeable about health inequity and less likely to support broad health interventions

addressing SDOH, respond positively to a certain message type.

Research Questions

Previous research on health inequity messaging demonstrates the importance of

considering the way local media portrays health inequities in order to create messages that will

resonate with the public (Gollust & Cappella, 2014). In order to develop messages that reflect

recent Canadian media coverage of SDOH and health inequities, two research questions will be

addressed:

(1) Which SDOH and health equity frames are represented in Canadian media the most

over the past two years?

(2) What can be found in the literature about narrative messages as a tool for raising

awareness about health topics?

Findings from phase one were used by the research team to determine the optimum way to

deliver information about health inequity and SDOH to the general Ontario public, and thus

inform message development for testing in phase two. My research questions during phase two

of the project are:

(3) With which attributions (e.g., messages emphasizing individual responsibility,

societal responsibility) for health inequities do the Ontario public most strongly agree?

(4) Which message style is the most effective for communicating information to

subpopulations that are more difficult to reach?

Research question (4) is based on previous findings on public opinion. Findings from a study

conducted on Ontarians show that certain subpopulations have less understanding of income-

based health inequities and show less support for health interventions (Kirst et al., 2017;

Shankardass et al., 2012). Five specific population subgroups were identified as more difficult to

reach in terms of increasing awareness about the effects of SDOH and supporting health equity

solutions: people with a Conservative political affiliation, people who identify as male, people

with low socioeconomic position (i.e., low annual income, unemployment, or low educational

attainment), people who were born in Canada, and people under the age of 35.

Theoretical Framework

Presenting new studies through the lens of existing theory has long been a staple of

empirical research (Flick, 2009; Jason, 2016; Padgett, 2012; Rappaport, 1987). By

conceptualizing this research in relation to ecological theory (Kelly, 2006), as well as attribution

theory (Ross, 1977) and affective disposition theory (Raney, 2004), we contextualize the project

(Flick, 2009; Padgett 2012). Guiding theories reflect the values and biases of the researcher, as

well as the goals of the research (Rappaport, 1987). This work grounds itself in attribution and

affective disposition theoretical pathways to produce messaging strategies through which

individuals may shift their attitudes and attributions for health inequities, and it does so through a

holistic, ecological understanding of health, as understood within the field of Community

Psychology.

Ecological Theory

Originally conceived to theorize how an individual's environment shapes the course of

their development, Bronfenbrenner's (1979) ecological model consists of five levels of analysis;

the individual is situated in the middle surrounded by the microsystem (e.g., personal

relationships, family), then the mesosystem (e.g., interaction between family and school teachers), followed by the exosystem (e.g., school, work), and finally the macrosystem (e.g., society, culture). This ecological model for human development has since been used to understand phenomena in several other areas of research and applies to a study of SDOH.

SDOH themselves are holistic in nature and must be understood through an ecological lens. Whitehead and Dahlgren (1991) developed a model of the determinants of health based on Bronfenbrenner's (1979) original model (see *Figure 1. Ecological model of SDOH)*. This model of determinants helps to explain the multiple levels of social factors affecting individual health, but it is also meant to describe levels of social policy intervention. Like the Bronfenbrenner (1979) model, the Whitehead and Dahlgren (1991) model consists of five levels of analysis; individual factors such as age and genetics, which are static; followed by actions taken by individuals; support from family, friends, neighbours, and the community; conditions in which people live and work; and finally, the structural environment. Whitehead and Dahlgren (1991, p.13) state that "all too often, strategies are only considered at one policy level, yet concerted effort at several levels… is in fact the very key for improving the impact of health policies in gender and strategies to reduce social inequities in particular". An ecological model of power, SDOH, and policy is crucial for understanding this work. Kelly (2006) argues that we should analyze any Community Psychology work through the lens of ecological theory. SDOH must be considered from all ecological levels and the relationships within and between each level are important for analysis.

Figure shows one influential model of the determinants of health that illustrates how various health-influencing factors are embedded within broader aspects of society.

Source: Dahlgren, G. and Whitehead, M. (1991). Policies and Strategies to Promote Social Equity in Health. Stockholm: Institute for Futures Studies.

Figure 1: Ecological model of SDOH

Attribution Theory

Attribution theory describes the process by which people explain the causes of social phenomena (Ross, 1977). The field of attribution theory is vast and expanding, but there is a general consensus that the process involves three main factors: antecedents (such as known information, beliefs, or motivations), the attributions themselves, and the consequences (such as a behaviour or feeling) (see *Figure 2. General model of the attribution field*) (Kelley & Michela, 1980). Two broad categories of attribution influence the antecedents. These categories are internal (i.e., caused by an individual's choices or characteristics) and external (i.e., caused by societal or environmental influences outside of the control of an individual).
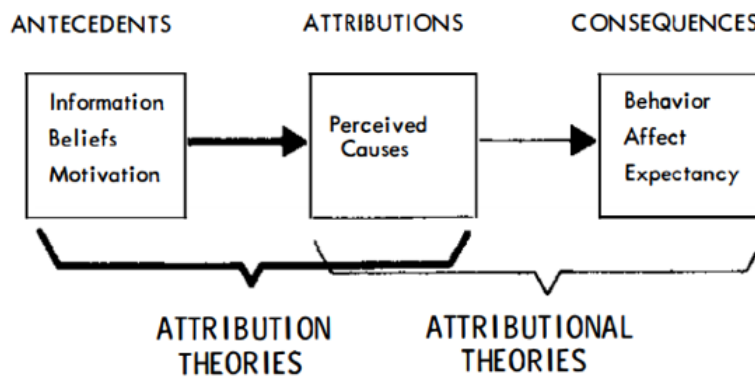
Figure 2: General model of the attribution field

In North America, we know that the general population tends to over-attribute the role of the individual in health outcomes (Metzl, 2001). Government public health campaigns largely focus on what citizens can do to improve our own health, such as smoking less, exercising more, and controlling our diets, while often discounting effects of SDOH (Rock, 2005; Gollust & Lantz, 2009; Kim, Kumanyika, Shive, Igweatu, & Kim, 2010; Kim & Willis, 2010;). Attributional theorists suggest two reasons for this: the *moral model of attribution* and the *fundamental attribution error* (Appelbaum, 2001; Ross, 1977). The moral model of attribution posits that individuals alone are responsible for their health and therefore no-one else is obligated (or even able) to improve the health of another person (Appelbaum, 2001). The underlying suggestion is that poor health is due to a lack of effort on behalf of the individual. This moral stance leads to a fundamental attribution error, or an error in the assumptions we make about the cause of poor health. Shiraz & Biel (2005, p. 97) state that when fundamental attribution error occurs, "…we tend to ignore or underestimate situational, often invisible, factors" and "…overestimate the centrality of the person as an autonomous, independent actor".

Attribution of causation has an effect on policy. We know that the way people attribute responsibility for health outcomes translates to the policies and interventions that they support (Lemstra, 2007; Kirst 2017). Citizens who attribute poor health to internal, individual, moral factors are less likely to support health solutions that focus on strengthening SDOH as opposed to combatting individual contributors to poor health (Lofters et al., 2014). We also know that people who haven't experienced the negative effects of SDOH, such as low income or food insecurity, are less likely to support policies that strengthen SDOH (Neiderdeppe et al., 2008). Just as attribution theory suggests, antecedents like information directly influence attributions; if

people do not have an understanding of SDOH they will not have a framework in which to

attribute health outcomes to social causes.

It is therefore necessary to shift understandings and attributions of health outcomes and

SDOH. As Niederdeppe et al. (p. 488) state in their 2008 article on health equity policy,

"Because population health research emphasizes social and structural factors such as poverty,

limited education, and racial discrimination and their effect on health disparities, communication

regarding these more structural determinants should theoretically help generate public support

for societal interventions to reduce health disparities by addressing SDOH". Attribution theory

will guide us in designing messages that frame SDOH in a way that allows for people who have

never experienced negative effects of SDOH themselves to understand fundamental attribution

errors.

Affective Disposition Theory

Affective disposition theory (ADT) maps onto attribution theory. ADT helps to explain

consequences of an attribution. ADT posits that people make moral judgements of characters in

media messaging and narratives, which influence and shape their feelings about said character

(Raney, 2004). These feelings towards characters are born out of their original judgement of the

character's morals. As Raney (p. 350 - 351) states in his 2004 article on ADT, "…we come to

like characters whose actions and motivations we judge as proper or morally correct while we

dislike characters whose actions and motivations we judge as improper or morally incorrect".

Furthermore, people want good things to happen to the characters they judge as morally correct,

because this initial moral judgement leads to positive feelings and empathy towards the

character. Raney (2004, p. 351) explains that "once characters are liked, viewers can identify

with their struggles, empathize with their pain, and hope for their ultimate success".

Since we know that people in North America consider health to be largely within the control of the individual, it has been hypothesized that people who read a narrative message about SDOH would be more likely to make positive moral judgements about a character who clearly demonstrates taking responsibility for their own health (Niederdeppe et al., 2015). Attribution theory and affective disposition theory considered together will help in the development of SDOH messaging; Ontarians' limited knowledge and understanding of SDOH will lead to a fundamental attribution error in which they blame the individual for their state of health, which in turn means that they will judge a character as morally correct if said character claims responsibility over their own health, ultimately leading to positive feelings of empathy towards the character and the hope that good things will happen to the character. If we can develop messages about characters suffering from the negative effects of SDOH that Ontarians want to help, we can shift attitudes and attributions of health inequities to a more ecological view of health, and ultimately increase support for health equity solutions.

Paradigms

Like guiding theories, paradigms reveal a researcher's worldview and therefore help to contextualize both the goals and design of a study (Nelson & Prilleltensky, 2010; Darlaston-Jones, 2007; Guba & Lincoln, 1994). Because paradigms are worldviews or beliefs, there is no way to objectively rank one paradigm higher than another (Darlaston-Jones, 2007). So, the paradigms that I subscribe to were chosen based on my own beliefs and their compatibility with this project. Both the constructivist paradigm and the transformative paradigm guide this work and different aspects of these paradigms' ontologies, epistemologies, and axiology are relevant.

Ontology

A constructivist ontology is relative; it decrees that there are multiple realities which exist (Padgett, 2012; Nelson & Prilleltensky, 2010; Guba & Lincoln, 1994). These realities are made up of experiences and the meanings that individuals draw from these experiences. A constructivist ontology maintains that reality is not absolute, and therefore it is impossible to obtain "truth" through empirical research. As a researcher, I see reality as constructed by the individual so that everyone experiences a different world; although some worlds may overlap more than others. A constructivist ontology has been critiqued for determining that there is no single experience of reality and therefore socially constructed concepts such as race and gender do not have any basis in reality; however, it is known that these socially constructed concepts have a very real bearing on health and wellness (Padgett, 2012). This is of particular importance to work on SDOH.

For this reason, I also gravitate towards a transformative ontology in which there is a single external reality and that this reality has been shaped by history and factors such as politics, economy, culture, race and gender (Nelson, 2010). While I do not personally prescribe to the former notion of a single reality, I draw upon a transformative ontology for the latter idea. A transformative ontology assumes that there are "social inequities that are contested and that there are conflicts between dominant and subordinate groups" (Nelson & Prilleltensky, 2010), thereby acknowledging the place for abstract social concepts within reality and giving a basis to SDOH. As I see it, a combination of these two ontologies (constructive and transformative) suggests that there are multiple realities which can be understood to be influenced by history, culture, values, and power.

Epistemology

I subscribe to both a constructivist and a transformative epistemology and see a fair amount of overlap between these two paradigms. A constructivist epistemology fits with this research because the larger objective is to understand the multiple realities of Ontarians, and to discern the best ways to communicate information to different groups and individuals. Similarly, a transformative epistemology is relevant to this work because of the emphasis placed on consciousness-raising as a form of acquiring knowledge. A transformative epistemology engages in self-reflexivity and consciousness-raising and self as a primary form of obtaining knowledge, which aligns with this research project's emphasis on creating narrative change (Nelson & Prilleltensky, 2010).

Axiology

Both constructivist and transformative paradigms emphasize the connection between values and obtaining knowledge (Padgett, 2012; Nelson, 2010; Guba & Lincoln, 1994). I draw on a transformative axiology for this research for two reasons. First, the goal of this project is social justice through shifting ideas about SDOH. Second, I try to remain self-reflexive throughout the entire research process by obtaining feedback from colleagues and considering different perspectives. I consulted the project advisory group during the development of messages (see Partners) and a held a pilot test with graduate students in fields outside of Community Psychology to obtain feedback on the research tools. I also consulted with several others at different stages throughout the research process, such as a librarian when I was conducting phase one and my supervisor and her colleagues during the phase two data analysis. I have also included this process of reflexivity within the body of this thesis by making my own values, positionality, guiding theories, and research paradigms clear.

Positionality of the Researcher

It is important to discuss my positionality as a researcher, in order to contribute to the trustworthiness of this work (Shenton, 2004), to give more context to the research questions, designs, and methods, and to iterate why I am the right person to take on this project. I presented my constructivist and transformative paradigms, as well as my guiding theories, which is a good start in terms of overviewing my biases and mentioning how paradigms and theory inform this work overall. Other important concepts are my values as a researcher, which also contribute to contextualizing this research project and the research design, my social location, and my position as a student in the Community Psychology graduate program at Wilfrid Laurier University.

Values and Social Location

Holding the value of accountability means that I act on my values in research, practice, and everyday life (Nelson & Prilleltensky, 2010). Both a transformative paradigm and ecological theory align with my values of social justice and holism. Framing health in regard to inequities and social, systematic determinants within this research reflects the value that I place on positive health and wellbeing for all. The purpose of this work is really to shift away from the current neoliberal, individualist, viewpoint of health towards a collectivist, socially determined view of health, and to attempt to make change where change is needed; within systems, and not with individual behaviour.

I have also engaged in a fair amount of health promotion work in the past four years and have seen what an individualistic view of health promotion looks like. I was a volunteer for my university's Health Services department, during which I had the role of a "peer educator" on the Mental Health team. The health promotion that I engaged with was very individually-focused and we would hold events to teach students about the importance of eating well, exercising, and

getting enough sleep on their mental health. These events often had very low attendance, perhaps because this is information that students hear quite often and does not really address the root societal causes of their mental health issues/challenges, i.e., social determinants of health. I see the need for new ways of conceptualizing health, and the root causes of health inequities.

Another important point to mention during a discussion of SDOH in Ontario, and certainly during any research process endorsed by an academic institution, is my own social location. I am white, able-bodied, and was born and raised by a middle-class family in Ontario. My struggles with the healthcare system and the social determinants affecting me personally are minimal. The purpose of this work is not to speak on behalf of Ontarians who suffer from unjustly socially determined health consequences, but to utilize the resources that I am privileged to have as a graduate student to raise awareness about an issue that I deem important. I recognize that I have a lot to gain from this research in terms of scholarly achievement, potential publications, and of course a master's degree. Education is a SDOH, and I hope that having this research thesis as a platform will allow me to use my position as a student to give back to Ontario in the form of education and critical awareness raising.

This work is rooted in action, with the aim of affecting policy change though the development of public awareness campaigns across the province of Ontario. To start, I aim to share my findings with the members of Ontario Public Health Unit Health Equity Working Group on the project advisory committee. I also wish to iterate that the purpose of this project is not to manipulate Ontarian citizens into adopting one belief system, but rather to present a collectivist, socially determined view of health inequity as another way to frame an issue that persists in the lives of many Ontarians with the goal of developing related solutions.

Community Psychology at Laurier

Being in the Community Psychology program at Wilfrid Laurier University allowed me to engage with critical social justice theories and to understand SDOH from an ecological lens with empowerment in mind. This graduate program is unique, and likely I would not have proposed this thesis if I had chosen a different graduate program. My learning over the past two years and the resources that were available to me within this program and field of psychology positioned me as a researcher well-suited for this work. Importantly, working under the supervision of Dr. Maritt Kirst also situated me well to take on this research. This project builds on past work by Dr. Kirst and colleagues on public opinion of Ontarians around SDOH and health inequity. It is from this previous work that the gap between SDOH evidence and public opinions on the issue was first identified within Ontario (Kirst et al., 2017; Lofters et al., 2014; Shankardass et al., 2012) This specific project is a first attempt to address the gaps recognized by earlier work and therefore to focus on shifting public opinion as a strategy to address health inequities in the province.

Methodology

Procedure and Timeline

Phase one consisted of a media content analysis and a literature review, with the goal of gathering information to develop messages to test in the experimental study. Phase one was carried out during July and August of 2018. The media content analysis followed guidelines laid out by Macnamara (2005). First, we made decisions about which media to consider for inclusion in the analysis, as well as which databases to search. Next, the media sample was determined and coded. Partners with expertise in the field were consulted throughout this process. Further information about sampling, analysis, and results of the media content analysis will follow. The

literature review, originally proposed as a scoping review but pared down with the advice of my

thesis committee members to make the project more feasible, was conducted simultaneously

with the media content analysis. Phase one ended with the development of four unique narrative

messages about SDOH and health inequity.

Phase two, survey development for the experimental study began in October 2018. Once

draft of the survey was designed and approved by the advisory committee (see Message

Development), we applied and received approval from the Research Ethics Board (REB #5946)

in early February 2019. The survey was piloted late in February by a group of graduate students

from the Social Psychology program at Laurier. Recruitment began in March 2019 and was done

through a market-based research firm (Dynata) in order to select a representative sample of

Ontarians to participate in the study. The market-based research firm randomized the sample to

receive the online surveys containing one of the four SDOH messages or to a control group. The

recruitment and randomization stage lasted about four weeks. Once data collection was

complete, analysis began in April and continued into June. Once this was complete, the

remainder of June and July were spent writing up final results and discussion.

Suitability of Methods

A media content analysis is appropriate because its utility aligns with the purposes of

phase one. Content analysis is a very flexible method and can be quantitative, qualitative or both

in design, as well as utilized to look at many different types of text. Content analysis has grown

in popularity as more forms of media, from magazines, to television, to websites, have become

popular, and this approach is also frequently employed as a tool for analyzing health-related

content (Jordan, 2009). Content analysis is used for work with media in a variety of research

projects. Topics of media content analysis projects include: analyzing media coverage of breast

cancer (Champion, Berry, Kingsley, & Spence, 2016); analyzing print news about medication risks (Ledford, 2013); analyzing the transparency of social media users (DiStaso & Bortree, 2012); analyzing the portrayals of schizophrenia in contemporary movies (Owen, 2012); analyzing gender roles in media (Collins, 2011); and even analyzing media representations of the conflict between humans and leopards in Mumbai (Bhatia, Athreya, Grenyer, & Macdonald, 2013).

There are also several books about the utility of using content analysis to understand media through both quantitative and qualitative approaches, including *Qualitative Media Analysis* (Altheide & Schneider, 2013) and *Analyzing Media Messages: using quantitative content analysis in research* (Riffe, Lacy, & Fico, 2014). Overall, media content analysis is suitable for this research because of its flexibility, the method's ability to address both research questions, and due to its widely supported use within media analysis work. Additionally, Macnamara (2005) summarizes two main uses of media content analysis: evaluation or gaining strategic insights. Strategic insights for the purposes of this work serve to identify trends in public opinion surrounding the topic of SDOH and health inequity in Canada (Macnamara, 2005; Stemler, 2001), ultimately informing the development of messages for phase one.

For phase two, an online survey was administered through a market-based research firm. A survey best serves the purpose of this study because we wanted a large sample representative of and generalizable to Ontarians for the larger study. The use of a market-based research firm to recruit participants allowed for rapid access to a representative sample of Ontarians through their existing survey panel databases. Furthermore, working with the research firm also ensured high data quality and management during data collection, given the randomized study design involving the administration of multiple surveys. Overall, an online survey is a reliable, cost-

effective, and practical way to assess general trends in the opinions of Ontarians towards health equity messaging and SDOH.

Partners

It is important to consult with relevant partners in order to establish credibility by gaining their input and expertise throughout the project. Partnerships will also be essential during the knowledge translation stage of this study. As part of this approach, a study advisory group was formed in August, involving research team members and key stakeholders in the area of study. This advisory group provided input on all stages of the study, including survey development, pilot testing, and data interpretation, and met at key timepoints throughout the study. Members of the advisory group include members from the Laurier Institute for the Study of Public Opinion and Policy (LISPOP) and the Ontario Public Health Unit Health Equity Working Group.

The advisory group met in person for the first time in November to provide feedback on the working draft of the four narrative messages and both surveys (message and control). This meeting acted as a pseudo-pilot test before the true pilot test took place, with each advisory group member using their unique expertise to critique and improve the research tools. The advisory group will meet again in the summer of 2019 to review the data that we collected from the surveys, and to provide their insights on the findings that we have thus far. This will be integral to finalizing this master's thesis work. We will also continue working with the advisory group past the defence date of this thesis on knowledge translation activities. In particular we hope to hold workshops with the Ontario Public Health Unit Health Equity Working Group to share our findings and to come up with ideas for crafting public health campaigns that would use our findings to raise awareness about SDOH in Ontario. We also hope that members of LISPOP

will ensure that these campaigns translate into policy change in our province. We hope to continue working with these partners as the rest of the survey data is analyzed in the future.

Phase One Methods

Media Content Analysis

In general, research shows that media do not dictate what people think or sway public opinion (Dearing & Rogers, 1996). However, media have the interesting role of dictating what people think *about*. The media contributes to "agenda-setting" or determining which issues the public deem important (Iyengar & Kinder, 1987). So, while media coverage of SDOH will not necessarily change the public's view of health inequities for better or for worse, the more often that SDOH are reflected in the media the more the public may think that health equity is an important issue. In fact, agenda-setting and the saliency of an issue portrayed in the media will even exceed reality. That is to say, the more that an issue is represented in the media the more that people consider it an important issue even if said issue is really on the decline (Gozenbach, 1996). Mass media have a strong role to play in bringing the public's attention to the effects of SDOH and raising public consciousness, e.g., through public awareness campaigns.

A media content analysis was conducted in order to answer research questions (1) and (2). Media content analysis is a subtype of the broader method of content analysis. Content analysis itself is a method with many uses and formats, which have evolved and developed over time (Elo & Kyngäs, 2008). Traditionally, content analysis was strictly quantitative and analyzed frequencies of key terms in order to find themes in large bodies of text. Both manifest and inductive analysis processes were used for this project. In this way both research questions are addressed, because we analyzed how often SDOH and health inequity appear in Canadian media

and how media frames SDOH, to get a better picture of the messages that Ontarians already receive.

Manifest content analysis is a type of quantitative content analysis used to track the frequency of topics appearing, in this case, in media sources (Macnamara, 2005). Manifest content analysis was used to study which SDOH the media mentioned the most, which topics the media focused on the most, and what type of frame the media mentioned the most. SDOH were sorted based on the fourteen Canadian SDOH (Mikkonen and Raphael, 2010), with the expectation that additional topics may emerge that do not fit these categories. Topics were sorted as they emerged, with like topics grouped together as themes became apparent. Four codes for frame were predetermined based on previous research by Lofters et al. (2014): "blame the poor", "plight of the poor", "privilege of the rich", and "hybrid", with the expectation that new frames would emerge while coding.

Considerations about search terms and databases were made in consultation with a Wilfrid Laurier University librarian. It was determined that the database Factiva would be the most pertinent for this particular analysis. Key words used for the Factiva search were "social determinants of health". The search results were filtered by region (Canada), language (English), and time period (January 2016 – June 2018), and the initial search produced 1,426 results. The time period was chosen as a media content analysis often generates a very large amount of resources, making sampling and the establishment of selection criteria necessary processes. For the purposes of this review, media was looked at from 2016 – present. This two-year time period was chosen as we wanted to analyze recent media trends, and there was a spike in the amount of media sources in Factiva during these two years (see *Figure: SDOH media results by year*).
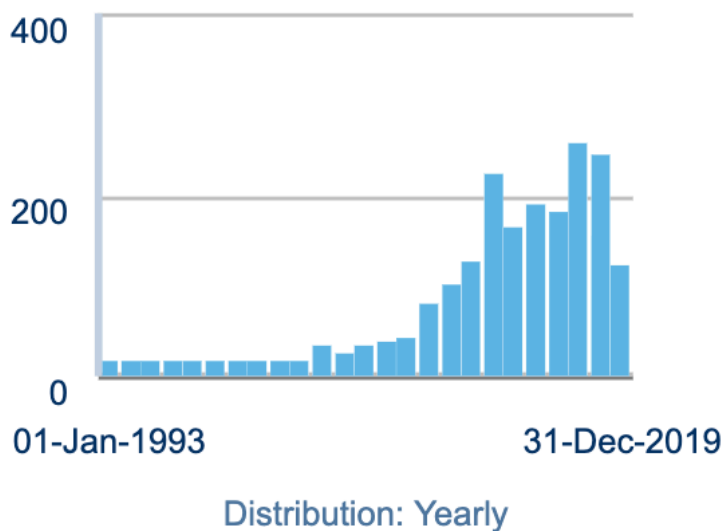
Figure 3: SDOH media results by date

The key criterion for inclusion of media documents was that SDOH were the main topic of the piece. Media sources were excluded if "social determinants of health" were only mentioned in one or two sentences or if SDOH were clearly not the main topic. Duplicate articles were also excluded. The final sample of relevant media articles consisted of 103 Canadian media sources about SDOH published during a two-year time span from 2016 – 2018.

Literature Review

An extensive search was conducted in order to ground our message development in current communications and health equity literature. In collaboration with a librarian at the Wilfrid Laurier University library, a comprehensive list of potential search terms was generated in order to cast a broad net and understand the scope of current knowledge on communicating information about SDOH. In order to understand the scope of current information available, the eligibility criteria of included studies is widespread and flexible, both the design and quality of included studies vary (Arksey & O'Malley, 2005).

Inclusion criteria was based on relevance to the topic of communicating information about health equity and social determinants of health. After trying out several search terms, we narrowed our search terms to "health communication", "health equity", "health disparity", "social determinants of health", and "messaging" in different combinations, producing a total of 64 results. Results were eliminated based on the title, then based on the abstract, once the content was determined to be irrelevant to the topic. A total of nine papers were selected as highly relevant to the research topic and from there a snowball sampling technique was used to find more literature through the reference lists included within those nine papers. Again, articles from the reference lists were chosen based on their title and perceived relevance to the topic, followed by elimination based on an initial reading of the abstracts. In the end, information was compiled from twelve key papers (see Table 7: Phase one literature review key themes regarding message style**)** and themes were used to inform development of four unique narrative SDOH messages (see Message Development).

<div align="center">**Phase One Data Analysis**</div>

Media Content Analysis Steps

Nvivo software was used to analyze the articles selected for the media sample. Coding took place over the course of two months. A simple codebook was created prior to the start of coding, with the understanding that new themes would likely emerge throughout the process (see Methods: Media Content Analysis). The sample was coded three separate times, in two stages. First, the sample was coded for topic (see Table 1: Topic codebook). This was an entirely inductive process, with categories collapsed as themes began to emerge. After the first stage of coding for topic revealed potential themes, I began a second stage in which I went through the articles again and finalized the list of topic themes and subthemes.

Table 1: Topic codebook, emergent themes and subthemes

Themes	Subthemes
Canada's health care system	General
	Public health system
Specific health issue	Diabetes
	HIV
	Obesity
	Opioid crisis
	Mental health
	Suicide
	TB in Nunavut
Community initiative or intervention	General
	Special event
Specific population	Children's health
	Indigenous health
	Northern health
	Rural health
	Senior's health
	Sex worker health
Government Spending	General
	Basic Income Guarantee (BIG)
	Living wage
	Political message
Expert opinions	MacLeod's book
	Physician advocacy
	Public opinion
	Reports, recommendations, and mandates

Violence	Family violence
	Gang violence
Transportation	General
Young people and poverty	General
Public libraries	General
Incarceration	General
House fires	General
Environmental conditions	General

Table 1: Topic codebook, emergent themes and subthemes

Next, the sample was coded for SDOH (see Table 2: SDOH codebook). This differs from topic because it is not about what the article is discussing generally, but about which SDOH are specifically mentioned in the text of the article. We started by using Mikkonen and Raphael's (2010) list of 14 Canadian SDOH and added new themes when an SDOH was mentioned that did not explicitly fall under one of the predetermined SDOH themes. We also added a theme for general mentions of SDOH. Due to the way that we selected our sample, a lot of the articles mention SDOH in a broad sense. Again, we coded for SDOH in two stages.

Table 2: SDOH codebook

Theme	Description
General SDOH**	References to SDOH in general as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Aboriginal status*	References to indigeneity as an influence on individual and population health outcomes and health equity due to colonialism and systematic discrimination (Mikkonen & Raphael, 2010)
Gender*	References to gender-based discrimination as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Disability*	References to a lack of "…support and opportunities necessary to participate in Canadian life" as an influence on individual and

	population health outcomes and health equity (Mikkonen & Raphael, 2010, p. 50)
Housing*	References to homelessness or poor-quality housing as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Early Life*	References to events in early childhood as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Income and income distribution*	References to the income of individuals or income distribution of a society as influencers of individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Education*	References to low educational attainment as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Race*	References to racism as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Employment and working conditions*	References to adverse working conditions as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Social exclusion*	References to a lack of opportunity to participate in society due to group membership as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Food insecurity*	References to inadequate diets due to lack of availability or accessibility of food as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Social safety net*	References to a lack of "…benefits, programs, and supports that protect citizens…" as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010, p. 35)
Health services*	References to a lack of access to health care services as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Unemployment and job security*	References to unemployment or precarious work as an influence on individual and population health outcomes and health equity (Mikkonen & Raphael, 2010)
Complete streets**	References to unsafe and inaccessible public street transportation as an influence on individual and population health outcomes and health equity

| Immigrant or refugee status** | References to immigrant or refugee status and a lack of support due to discrimination as an influence on individual and population health outcomes and health equity |
| LGBTQ+ identity** | Reference to discrimination based on LGBTQ+ identity as an influence on individual and population health outcomes and health equity |

*Predetermined theme
**Emergent theme

Table 2: SDOH codebook

Finally, we coded for health equity frame (see Table 3: Frame codebook). Again, we predetermined four potential frames: "plight of the poor", or framing health inequities as attributed to the disadvantages of a low-income population, "privilege of the rich", or framing health inequities as attributed to the advantages experienced by a high-income population, "blame the poor", or framing health inequities as the responsibility of a low-income population, and "hybrid", or framing health inequities as attributed to any combination of the first three frames (Lofters et al., 2014). We also conducted emergent coding and were open to looking for new frames that fell outside of the predetermined themes. Again, we coded this in two stages, for a total of six rounds of coding.

Table 3. Frame codebook

Theme	Description
Plight of the poor*	Framing health inequities as attributed to the disadvantages of a low-income population (Lofters et al., 2014).
Privilege of the rich*	Framing health inequities as attributed to the advantages experienced by a high-income population (Lofters et al., 2014)
Blaming the poor*	Framing health inequities as the responsibility of a low-income population (Lofter et al., 2014)
Hybrid*	Framing health inequities as attributed to any combination of the first three frames
Government responsibility**	Framing health inequities as the responsibility of the government

Social responsibility**	Framing health inequities as the responsibility of society

*Predetermined theme
**Emergent theme

Table 3: Frame codebook

Phase One Results

Media Content Analysis

The media content analysis results informed the research question, (1) Which SDOH and health equity frames are represented in Canadian media the most over the past two years? We also coded for topic to get an idea of how different each media article was, and to generate ideas about topics for the narrative messages that we developed that might be more salient with the Ontario public.

Topic results.

A total of thirty-three different topics emerged following analysis of the 103 media sources, with eleven of the topics occurring in four or more articles and the rest occurring one to three times. Table 4 gives an overview of the eleven most frequently occurring topics. Government spending was the most common topic, with 21 of the 103 sources explicitly discussing government spending (~20%). Examples of sources discussing government spending include quotes such as, "more spending on social services per dollar spent on health-care services is associated with better health outcomes. In other words, if a government had $600 million to spend, it might do more for population health to spend that money on social services than health care" (Dutton & Zwicker, 2018).

Government spending is closely followed by community initiative or intervention with 19 of the 103 sources (~18%) specifically discussing a local initiative or intervention with the goal of strengthening SDOH. Some example quotations include, "the Health With Dignity Program

was launched in late 2015 as a four-year pilot to help vulnerable clients navigate the health-care

system and improve their capacity to manage their health" (Keung, 2018) and, "A new program

aimed at the maternal health needs of indigenous communities will seek to reduce the risk of

death during childbirth" (Clancy, 2016). The topics that were also mentioned frequently included

Indigenous health (~12%), political messages (~7%), Basic Income Guarantee or Canada's

health care system (~6% each) and the opioid crisis (~5%). The other twenty-six topics were

each discussed by only 1 – 5 sources.

Table 4. Manifest content analysis, topic results (frequency of occurrence = 4 or more)

Topic	Total # of Articles
Government Spending	21
Community initiative or intervention	19
Indigenous health	13
Political message	8
Reports, recommendations, and mandates	8
Basic Income Guarantee (BIG)	7
Canada's health care system	7
Opioid crisis	6
Northern health	5
Special event	5
Incarceration	4

Table 4: Manifest content analysis, topic results (frequency of occurrence = 4 or more)

Social determinants of health results.

Seventeen different social determinant-related themes emerged from the 103 media

sources, with some sources referring to more than one type of determinant (see Table 5: Manifest

content analysis, SDOH results). By far, general mention of the social determinants of health

occurred the most with 67 of the sources referring to SDOH generally, as opposed to specific

determinants (approximately 65% of sources). Examples of a source referring to SDOH in

general included quotations such as "Health care is complex and must be seen in the context of

the social determinants of health…" (West, 2018) or, "Every Ontarian deserves equal access to

high-quality care, and we know how important improving the social determinants of health is to

the wellbeing of our province" (Fox, 2018).

The second most-mentioned SDOH is income, which was referred to in 25 of the 103

sources (or approximately 24%). Example quotations include, "a steady income, one that is

secure enough to enable people to plan for their future with a reasonable expectation of a

successful outcome, has a clear and positive impact on healthcare costs" (Howley, 2018) or "The

ongoing struggle to pay for food, shelter and medical supplies is as much a threat to Patricia's

health as her chronic renal failure… from inflammatory bowel disease" (Keung, 2018).

The third most-referenced SDOH is Indigeneity (~13.5%), and the fourth is early

childhood development (~9%) followed closely by housing (~8%). After this, references to

specific SDOH are spread fairly evenly, with food insecurity mentioned by six sources,

immigrant or refugee status by five sources, gender and education each mentioned by four

sources, health care access, race, and social isolation each mentioned by three sources, "complete

streets" referenced as a SDOH by two sources, and finally disability, LGBTQ identity, social

status, and work conditions each mentioned by one source.

Table 5. Manifest content analysis, SDOH results

Social Determinants of Health	Total # of Articles
General SDOH	67
Income	25
Indigeneity	14
Early childhood development	10
Housing	9
Food insecurity	6
Immigrant or refugee status	5
Education	4
Gender	4
Health care access	3
Race	3
Social isolation	3
"Complete Streets"	2
Disability	2

LBGTQ+ identity	1
Social Status	1
Work conditions	1

Table 5: Manifest content analysis, SDOH results

Frame results.

Six potential frames were identified either a priori ("blame the poor", "plight of the poor", "privilege of the rich" and "hybrid") through the team's previous research and thus we were seeking confirmation in media reports, or as emergent frames ("government responsibility" and "social responsibility") (see Table 6: Manifest content analysis, frame results). The two emergent frames, "government responsibility" and "social responsibility", occurred the most, each making up 48% of the coded articles. This aligns with the coding for topic, as the top two most common topics were "government spending" and "community initiative or intervention". An example of a "government responsibility" frame is, "We have all the tools and resources we need, but we need political courage and will to act" (Bender, 2016). An example of the "social responsibility" frame is, "This is your Ontario, so I implore you to get involved in being part of what the future of this province looks like" (Bruckner, 2018).

"Privilege of the rich" frames were found in more articles, making up about 12% of the coded sample. An example of a "privilege of the rich" frame is, "Manitoba's health-care system is undergoing major changes. Many fear the changes are more about saving money than improving health" (Silver, 2018). "Plight of the poor" was the most common of the four predetermined frames, making up approximately 20% of the coded articles. An example of a "plight of the poor" frame is, "By helping those who need it most, we can create a society that can be sustainable and healthy for all" (Young-Hoon, 2018). There were no examples of a frame

that was a hybrid of "plight of the rich" or "privilege of the poor"; most articles seemed to stick to one frame with which to deliver their message.

Table 6. Manifest content analysis, frame results

Frame	Total # of Articles
Government responsibility	49
Social responsibility	49
Plight of the poor	21
Privilege of the rich	12
Blaming the poor	3
Hybrid	0

Table 6: Manifest content analysis, frame results

The "blame the poor" frame only appeared three times and the instances were not solely aligned with this frame; that is to say that the media articles could have been coded differently, either as a critique of the "blame the poor" frame or "plight of the poor". For example, "A Nova Scotia MLA is apologizing for a social media post that appeared to blame rising health care costs on the 'lifestyle choices' of the province's residents" (The Canadian Press, 2018). The article is really framed as a "Plight of the poor" narrative, as the author criticizes the politician responsible for blaming the poor for their own health. Another example is, "The solutions to the inequities facing people in the north need to be found in the north by those who live and work there" (Health Quality Ontario, 2017). Again, this could be coded as "Social responsibility", depending on how one reads it.

Literature Review

The purpose of the literature review was to supplement the media content analysis findings by conducting a broader search of the current literature and answering research question (2) What can be found in the literature about narrative messages as a tool for raising awareness about health topics? While the media content analysis was useful in looking for elements of narrative topics that will be believable and easily accessible for our audience, the literature

review helped determine what narrative devices and communication techniques have proven to be effective in the past.

We conducted a review of the current literature on messaging, narratives, and social determinants of health in order to inform message development. The findings are summarized in Table 7, below. Several themes emerged from the literature review findings. The review confirmed prior reviews specifically on effectiveness of narratives for conveying information about the social determinants of health. Several studies showed that narratives are an ideal technique because of the ability to explain complex social problems, lead to behavioural change, and change perceptions of an issue so that more participants understand the social causes of the issue (Niederdeppe, Shapiro, & Kim, 2014; Niederdeppe, Shapiro, & Porticella, 2011; Durkin, Biener, & Wakefield, 2009).

Many studies show that value-driven messages are effective, particularly for social determinants of health messaging (Robert Wood Johnson Foundation, 2010). It is important to consider the values such as individual responsibility or social responsibility, and emotions such as empathy, anger, or fear, that a narrative elicits from participants. For example, a narrative could invoke the value of individual responsibility by framing health as the result of diet and lack of exercise and could invoke the emotion of anger by blaming the individual for their health. When a narrative invokes a value or emotion, participants often use that framework to develop their own thoughts about an issue (Brewer & Gross, 2005). However, health messages using a social determinants of health framework inherently evoke traditionally liberal values (Gollust, Lantz, & Ubel, 2009). Therefore, it may be of interest to consider including the values of personal responsibility, opportunity, and freedom, which research has shown to relate to values

held by people with conservative political ideologies, in order to appeal to both liberal voters and

conservative voters (Robert Wood Johnson Foundation, 2010).

As for emotions, again there are several studies which show that emotional narratives are

more effective for conveying information about social determinants of health, as well as more

likely to lead to behavioural change, than other types of messaging (Robert Wood Johnson

Foundation, 2010; Durkin, et al., 2009). While there are many studies on the effectiveness of

fear, shame, and guilt-based messaging, this has not been shown to be effective for

communicating about social determinants of health, and the ethics of purposefully eliciting

negative emotions from participants is often questioned (Friedman, Uhrig, Poehlman, Scales, &

Hogben, 2014). Instead, it may be just as effective or even more effective to have a narrative

based on positive emotions such as love, hope, or empathy (Friedman et al., 2014).

While it is important to frame a narrative so that it brings out certain emotions and values

from participants, findings suggest that there are some narrative frames to be avoided.

Specifically, framing a narrative so that it highlights racial or socioeconomic health disparities is

often ineffective (Friedman et al., 2014; Lundell, Niederdeppe, & Clarke, 2013; Niederdeppe,

Bu, Borah, Kindig, & Robert, 2008). A racial or socioeconomic disparities frame can reinforce

stereotypes about already disadvantaged groups (Friedman et al., 2014), as well as make

participants self-conscious and more likely to counterargue or resist the message (Lundell et al.,

2013; Niederdeppe et al., 2008).

Instead, it is more effective to have a message that does not completely attribute health

inequities to problems with society. However, messages that solely blame an individual for their

own health are also poorly received (Gollust et al., 2014). Almost all studies reviewed show that

messages which attribute health inequities to both society and the individual are received the best

by the most participants (Gollust et al., 2014; Lundell et al., 2013; Gollust et al., 2009).

One last finding to note is that messages that evoke a sense of personal responsibility or

that directly layout actions that a participant can take to alleviate the issue are often better

received than messages that do not (Lundell et al., 2013; Robert Wood Johnson Foundation,

2010; Niederdeppe et al., 2008).

Table 7. Phase one literature review key themes regarding message style

Theme	Key Findings	Articles Sourced
Values	"Exposure to frames invoking a value… led participants to use that value to describe their own thoughts about an issue..."	Brewer & Gross (2005, p. 943)
	"…value framing can help to promote shared frames of reference for understanding issues. Such shared frames, in turn, may facilitate more effective deliberation among citizens about policy choices…"	Brewer & Gross (2005, p. 944)
	Social determinants messages inherently contain embedded value-based cues (presumes a liberal worldview)	Gollust, Lantz, & Ubel (2009)
	Values-driven messages are more effective	Robert Wood Johnson Foundation (2010)
	"…combining the notion of personal responsibility, which is wholly embraced by conservatives with a message about opportunities, language that also appeals to progressives, will appeal to a broader audience."	Robert Wood Johnson Foundation (2010, p. 5).
Emotions	"Smokers who were exposed to highly emotional and personal testimonial ads were significantly more likely to have quit smoking by follow-up…"	Durkin, Biener & Wakefield, (2009, p. 2222)
	"…appeals based on positive emotions (e.g. love, hope, empathy, empowerment, positive role models) may be equally or more effective in prompting desired attitudinal, behavioral and social changes…"	Friedman, Uhrig, Poehlman, Scales & Hogben (2014, p. 1002)

	Messages with emotionally compelling language are more effective	Robert Wood Johnson Foundation (2010)
Narratives	"Smokers who were exposed to highly emotional and personal testimonial ads were significantly more likely to have quit smoking by follow-up…"	Durkin, Biener & Wakefield (2009, p.2222)
	"…short stories with persuasive intent can successfully convey information about the causes of complex social problems"	Niederdeppe, Shapiro, & Kim (2014, p.440)
	"…a short personal narrative illustrating these causes was successful in increasing public perceptions that societal factors indeed contribute to obesity…"	Niederdeppe, Shapiro & Porticella (2011, p.312)
	"…narratives increased societal attributions for the causes of a social problem (when combined with a summary of evidence) and solutions to the problem (at least for liberals)"	Niederdeppe, Shapiro & Porticella (2011, p.313)
Racial disparities frame	"…research has cautioned against the broad dissemination of health or social statistics presented in a racial disparities frame, which, even when communicated by well-intentioned public-health advocates, may reinforce existing stereotypes of 'separateness' and distance minority concerns from those of the majority"	Friedman, Uhrig, Poehlman, Scales & Hogben (2014, p. 1002)
	Framing messages about public health "…in terms of class and racial inequalities seemed to politicize the discussion in a manner that made participants self-conscious, stymieing further debate"	Lundell, Niederdeppe & Clarke (2013, p.1127)
	"Stories framing poverty, unemployment, and racial discrimination as exclusively social problems are likely to be resisted"	Niederdeppe, Bu, Borah, Kindig & Robert (2008, p.491 - 492)
Individual vs. social frame	In response to a US survey on health disparities, "respondents frequently counterargued and evaluated as weak a message attributing disparities in health exclusively to personal behaviors"	Gollust & Cappella (2014, p. 504)
	Respondents judged a typical message endorsing social factors as important explanations for socioeconomic health disparities as strongest.	Gollust, Lantz & Ubel (2009)

However, a message that discussed social factors as most important but also acknowledged a role for personal responsibility fared well in terms of lowest elicitation of anger and counterarguing to the message among respondents.

	"Findings point to the potential utility of messages that stress the assigned and shared responsibility of those in authority over certain populations…in taking health-promoting actions"	Lundell, Niederdeppe & Clarke (2013, p.1127)
	"The extent to which stories acknowledged personal responsibility for weight loss, while emphasizing environmental factors, shaped societal cause attributions (among all groups) and policy support (among conservatives)"	Niederdeppe, Shapiro, & Kim (2014, p.440)
	"The MPR [moderate personal responsibility], condition led to greater complex integration of societal and individual causes of obesity than the other two experimental conditions. This complex integration, in turn, was positively associated with societal cause attributions (which also predicted policy support)"	Niederdeppe, Shapiro, & Kim (2014, p.441)
Political alignment	"…republicans reacted negatively to the social determinants message, tending to disagree with the idea of social determinants after viewing an article that deliberately described these factors"	Gollust, Lantz & Ubel (2009, p.2165)
	The social determinants message contained embedded values-based cues to which political partisans responded: "…the social determinants media frame may have presumed a liberal worldview to which the Republican study participants disagreed or found factually erroneous (i.e., not credible), but with which Democrats felt more comfortable or found more familiar"	Gollust, Lantz & Ubel (2009, p.2165)
	When communicating about SDOH, "…some phrasing appealed to one political perspective over another, progressives had a tendency to be more open to conservative frames… combining the notion of personal responsibility, which is wholly embraced by conservatives with a message about opportunities, language that also appeals to progressives, will appeal to a broader audience"	Robert Wood Johnson Foundation (2010, p.5)

Personal responsibility/guilt	"The personal responsibility measure was associated with message reactions more than the traditional individualism value used in studies of political beliefs (e.g., Feldman 1988), suggesting future research should continue to explore how responsibility values are activated in health-related messaging"	Gollust & Cappella 2014, p.506)
	Incorporate the role of personal responsibility when communicating about SDOH "…made respondents more receptive to the idea that society also has a role to play in ensuring that healthy choices are universally available"	Robert Wood Johnson Foundation (2010, p.5)
	"Successful anticipated guilt appeals appear to require strong efficacy information, however, so that a person can act to prevent the onset of actual guilt in the future"	Niederdeppe, Bu, Borah, Kindig & Robert (2008, p.502)
Actions	"Respondents, particularly opinion leaders, prefer messages that include some kind of direction—either an example of the kind of action that would address the problem or a set of principles that can guide us to where we need to be"	Robert Wood Johnson Foundation (2010, p.5)
	"…emphasize that policy changes can make incremental differences in shaping people's behaviors and help them make better decisions without compromising their freedom…"	Lundell, Niederdeppe & Clarke (2013, p.1127)
	"Successful anticipated guilt appeals appear to require strong efficacy information, however, so that a person can act to prevent the onset of actual guilt in the future"	Niederdeppe, Bu, Borah, Kindig & Robert (2008, p.502)

Table 7: Phase one literature review key themes regarding message style

Message Development

The messages went through several stages of development. First, the research team developed narrative messages by combining the strategies obtained from the literature review and the most common themes found during the media content analysis. Based on the literature review, we determined that there would be two different ways to frame attributions of health outcomes: social determinants or a hybrid social determinants and individual responsibility

(Niederdeppe et al., 2008; Gollust & Cappela, 2014; Niederdeppe et al. 2014). Based on the

content analysis, we determined that there would be two ways of framing SDOH: as a "plight of

the poor" or as a "privilege of the rich". In total there would be four message types: (1) plight of

the poor, social frame; (2) plight of the poor, hybrid social and individual frame; (3) privilege of

the rich, social frame; (4) privilege the rich, hybrid social and individual frame. Different

versions of the four messages were created with a female and male character, as well as versions

in which the main character had children or did not have children. Also based on the literature

review, we determined that narrative messages are more effective than factual or statistical

messages and that only one fact about SDOH included in each narrative message (Robert Wood

Johnson Foundation, 2010; Niederdeppe et al., 2011; Niederdeppe et al., 2014). The messages all

invoked the values and emotions of Brian by adding in quotations for readers to have a sense of

his feelings about the situation that he is in (Durkin, 2009; Robert Wood Johnson Foundation,

2010). We avoided using a racial disparities frame or a sole personal responsibility frame, as the

literature showed that both of these frames can elicit strong negative feelings from readers

(Lundell et al., 2013; Gollust et al., 2014). Not only did we want to avoid reactions to the

messages that could potentially be attributed to factors other than the effects of SDOH, but

purposefully evoking negative feelings borders on unethical.

Based on findings from the media content analysis, we drew on four of the most common

SDOH topics found in the media analysis, including income, housing, food security, and

education in all four versions of the narrative. Previous research shows that people in Ontario

either attribute health inequities to the "plight of the poor" (58.3% agreement), the "privilege of

the rich" (58.7% agreement), or "blame the poor" (43.1% agreement) (Lofters et al., 2014). The

media content analysis further confirmed that the "blame the poor" frame is not common in

Canadian news articles from the past two years, so we included the top two predetermined

frames, with two of the messages written with a plight of the poor framework and two of the

messages written in a "privilege of the rich framework", and did not include a "blame the poor"

narrative.

These draft messages were shown to the advisory group and for general feedback. It was

decided in collaboration with the advisory group that, while the findings of the emergent frames

"social responsibility" and "government responsibility" were interesting, it would be best to

build upon previous research that tested the predetermined frames in an Ontario context to allow

for continuity of the research and comparison of the new findings to previous work.

The advisory group discussed the difficulties of detecting the individual biases of

respondents with an experimental design, and thus thought it best to have a male main character

to counteract potential responses based in misogynistic worldviews. It was important to make

sure that the narratives were similar enough and neutral enough that we could attribute the results

to differences in the message frame, and not any extraneous variables. The advisory group also

gave feedback on the wording of the messages to make sure that the frames were clear.

After incorporating the feedback from the advisory group and receiving ethics approval

from the Research Ethics Board at Wilfrid Laurier University (REB #5946) we conducted a

small pilot of the complete survey with all four versions of the messages. Four graduate students

in fields outside of Community Psychology (in order to allow for interdisciplinary views and

fresh perspectives) were recruited through a Faculty of Science Listserv. Each of the participants

had a different message type, which was randomly distributed amongst them upon arrival to the

pilot study. After filling out paper copies of the surveys, we held a short focus group to get

feedback. The focus group guide was open ended to allow for a structured yet flexible conversation about the survey and messages (See Appendix D: Focus group script).

After incorporating feedback from the advisory group and the pilot survey participants, and findings from the literature review and media content analysis, we finalized the four messages. The messages were all written in a narrative style featuring a fictional character named Brian, who graduated high school but did not attend secondary school. He works at a factory, but his hours were recently cut back causing him to move to a different neighbourhood in which he could afford rent, but there were less amenities. He also sold his car to make more money and began smoking again due to the stress of these transitions. In the two privilege of the rich messages (SDOH and hybrid frames), a second character named Pat is introduced as Brian's wealthy friend. Pat helps to emphasize the advantages of the rich with respect to health and well-being. The complete messages can be found in Appendix C.

Phase Two Methods

Data Collection and Sampling Criteria.

Data were collected from over 1500 survey participants through the market research firm Dynata. Comparing the message groups to the no message control group was not within the scope of this thesis project, which instead focused solely on comparing predictors of sympathetic reactions to the messages. Since the control group data (N = 725) was not analyzed at this time (see Data Collection and Sampling Criteria), the total sample size examined for this thesis project consisted of 805 participants across the four message groups. We used a sampling strategy, informed by an online sample size calculator (Clinical & Translational Science Institute, 2019), to ensure that our sample was large enough to detect statistically significant associations pertinent to the population of Ontario, as well as difficult to reach subpopulations;

specifically, we calculated an estimated sample size needed in order to include 50% male

identifying participants (q_1 = .5). Assuming a response baseline risk of P_0 = .75 based on an

earlier finding that 75% of Ontarians support SDOH housing interventions (Kirst et al., 2017), an

odds ratio of OR = .65 for males in agreement with both types of broader and targeted

interventions (Kirst et al., 2017), as well as an alpha of .05, we calculate a sample size of 843, or

approximately 169 participants per message or control group. Therefore, our sample size of 805

individuals across the four message surveys (approximately 201 per group) ensures that the

sample accurately represents Ontario. Screenshots from the online sample size calculator are

provided below.

α (two-tailed) =	0.050	Threshold probability for rejecting the null hypothesis. Type I error rate.
β =	0.200	Probability of failing to reject the null hypothesis under the alternative hypothesis. Type II error rate.
q_1 =	0.500	Proportion of subjects that are in Group 1 (exposed)
q_0 =	0.500	Proportion of subjects that are in Group 0 (unexposed); $1-q_1$
P_0 =	0.7500	Risk in Group 0 (baseline risk)

Figure 4: Sample size calculations (1)

P_1 =	0.6610	Risk in Group 1 (exposed)
OR =	0.650	Odds ratio $(P_1/(1 - P_1))/(P_0/(1-P_0))$
RR =	0.881	Risk ratio (P_1 to P_0)

Figure 5: Sample size calculations (2)

The standard normal deviate for α = Z_α = 1.960
The standard normal deviate for β = Z_β = 0.842
Pooled proportion = P = $(q_1 {}^* P_1) + (q_0 {}^* P_0)$ = 0.706
$A = Z_\alpha \sqrt{P(1-P)(1/q_1 + 1/q_0)}$ = 1.787
$B = Z_\beta \sqrt{P_1(1-P_1)(1/q_1) + P_0(1-P_0)(1/q_0)}$ = 0.764
$C = (P_1-P_0)^2$ = 0.008
Total group size = $N = (A+B)^2/C$ = 821
Continuity correction (added to N for Group 0) = $CC = 1/(q_1 {}^* |P_1-P_0|)$ = 22

Figure 6: Sample size calculations (3)

Previous research found that males are less likely to support interventions to target health

inequity (Kirst et al., 2017) and are a potential difficult to reach subpopulation that we used to

calculate sample size – this was the most conservative estimate of support for health equity

interventions. For our sample to include enough males for any statistically significant

conclusions to be drawn from this subpopulation, with 50% of respondents identifying as male,

and assuming a baseline risk of 75% based on an earlier finding that 75% of respondents support

health equity interventions (Kirst et al., 2017) as well as a desired accuracy of 5 percentage

points and taking into account a 0.65 odds ratio for males from a previous study (Kirst et al.,

2017), we calculated a sample size of 866.

As displayed in Table 8, the sample we collected data from for this project is fairly

representative of the Ontario population according to the most recent census data, particularly in

terms of gender identity, residence (urban vs. rural), and annual household income (Statistics

Canada, 2016). There are some minor differences, with our sample being younger, having higher

unemployment rates, higher percentage of Liberal voters, higher percentage of participants born

outside of Canada, and a higher percentage of people either in post-secondary school or

completed post-secondary school compared to the Ontario population.

Table 8. Descriptive characteristics of sample (N = 805)

		Sample % (N)	Ontario Pop %[1]
Age Group	18 – 34	34.5 (277)	19.6
	35 - 54	25 (201)	27.7
	55+	40.5 (325)	30.4
Gender Identity	Male	49.1 (394)	
	Female	48.6 (390)	
	Other gender identities	2.3 (19)	
Residence	Urban	84.3 (675)	85
	Rural	15.7 (126)	15
Place of birth	Canada	75.8 (606)	92.3
	Outside of Canada	24.2 (193)	7.7
Annual household income < $40,000	Yes	33.4 (269)	41.6
	No	66.6 (536)	58.4
Educational attainment	Some high school	5.5 (44)	10.4
	Graduated high school	16.6 (134)	24.5
	Some college or university	19.1 (153)	
	Completed college or university or further education	58.8 (471)	65.1
Currently unemployed	Yes	10.4 (84)	6
	No	89.6 (721)	
If the election were being held today, would vote:	Liberal	34 (271)	19.57
	New Democratic Party	22.4 (178)	33.59
	Progressive Conservative	24 (191)	40.50
	Other	19.6 (156)	4.6
Self-rated health	Poor	3.6 (29)	
	Fair	20 (160)	
	Good	42 (337)	
	Very good	24.2 (194)	
	Excellent	10.2 (82)	
Knowledge and understanding of the health issues affecting Ontarians	Poor	6.1 (49)	
	Fair	28.1 (225)	
	Good	43.4 (348)	
	Very good	17 (136)	
	Excellent	5.5 (44)	

Table 8: Descriptive characteristics of sample

[1] Ontario population percentage based on the most recent Statistics Canada data available. Not all provincial population demographic categories align with the demographic categories used for this project, so they represent the closest estimated comparison.

Measures

The online survey collected data to answer an array of research questions (see Appendix B:

Survey). In the context of this specific thesis project, data were examined to determine which

message style is the most effective for communicating information to the Ontario population and

subpopulations that are more difficult to reach (Kirst et al., 2017; Shankardass et al., 2012).

Participants read a message and answered questions measuring perceived message strength,

anger, and empathy (measured by sympathy towards the main character of the narrative and

feeling upset by the character's situation). Theoretically, messages perceived as strong, do not

illicit anger and produce high levels of empathy from respondents, will reveal which narrative

styles are the most effective.

Dependent Variables: Two indicators of message efficacy, *message strength* and *anger*, are

based on a study conducted by Gollust and Cappella (2014). In this 2014 study, perceived

message strength was measured based on a previously validated scale (Zhao, Strasser, Kang,

Capella, Lerman, & Fishbein, 2011). We slightly adapted the wording for the purposes of this

project. The Likert-scale, ranging from 1 (Strongly disagree) to 5 (Strongly agree) includes four

items (see Appendix B: Survey): **"**The message is believable", "The message is convincing", "I

agree overall with the message", "This message presents a strong argument". The message

strength scale was then created by averaging the four items (M = 3.66, SD = .84).

Gollust and Cappela's 2014 study measured *anger* by embedding four indicators of

anger, angry, irritated, annoyed, and aggravated, within a list of nine emotions, and having

participants rate each emotion on a 5-point scale from 1 (none of this feeling) to 5 (a great deal

of this feeling), based on a previously validated scale of reactance to messaging (Dillard & Shen,

2005). However, pilot testing revealed this item to be ambiguous, as participants had different

emotions towards the character and towards the character's situation. To mitigate this, we included the item twice, with the appropriate addendum: "How much of the following feelings did you experience toward *Brian* after reading the message?" and "How much of the following feelings did you experience toward *Brian's situation* after reading the message?" (See Appendix B: Survey).

A third indicator of message efficacy is empathetic responses to the message. *Empathy* was measured based on measures used in a study by Niederdeppe and colleagues (2015). The Neiderdeppe et al. (2015) study used previously validated items from the Empathy Response Scale (Campbell & Babrow, 2004) and from Weiner's (1993) work on sympathy. The two items that we focused on as measures of emotional responses and empathy toward the character (Brian) in the messages are *sympathy*: "How much sympathy do you have for Brian?", with responses ranging from (1) "Hardly any" to (4) "A great deal", and *upset by Brian's situation*: "I felt upset for those who suffer from the problem described in this message", with responses ranging from (1) "Strongly disagree" to (5) "Strongly agree".

Participants were also asked general questions that do not directly relate to the messages in order to measure support for health equity solutions and beliefs about health inequities. These items are the same questions used during the previous stage of this research project on public opinion and will be analyzed in the future to examine impact of the messages on support for health equity policies compared to a control group. At this time, the focus is on comparing the differences between the dependent variables across the four message types by building logistic regression models.

Independent Variables: A new variable named "Survey" was created to examine the effect of reading the different messages on the dependent variables (research question 3). This variable

was coded 1 for message 1, 2 for message 2, 3 for message 3, and 4 for message 4 (See Table 9:

Sample per message group). To address research question 4, variables were introduced as

predictors related to five subpopulations theorized as more difficult to reach with SDOH and

health inequities messaging, based in preceding literature (Shankardass et al., 2012; Kirst et al.,

2017). These subpopulations included:

1. People who identify as male

2. People under the age of 35

3. People who indicated that they would vote Conservative

4. People with low socioeconomic position (low educational attainment, low income, or
   unemployed)

5. People who were born in Canada

A male dummy variable was included in the regression model, with male identity coded

as one and all other gender identities (female, transgender male, transgender female, non-binary,

gender variant/non-conforming, not listed, prefer not to say) coded as zero and used as the

reference group. While previous research indicates that people over the age of 55 have more

knowledge about SDOH than younger age groups (Shankardass et al., 2012), our sample did not

include enough participants in the older age categories (55 – 64, and 65+) to create a valid

dummy variable. Therefore, a 35 plus dummy variable was created, with the age groups 35 – 44,

45 – 54, 55 – 64, and 65+ coded as one and all age groups under 35 years old including 18 – 24

and 25 – 34 coded as zero and used as the reference group. A Conservative voter dummy

variable was created, with Conservative voters coded as one and all other political affiliations

(NDP, Liberal, other) coded as zero as the reference group. A dummy variable for Canadian-

born was created, with born in Canada coded as one and born in a country other than Canada

coded as zero and used as the reference group.

Finally, a low SEP dummy variable was created, by first creating a SEP composite

variable consisting of annual household income, employment status, and educational attainment.

Participants were considered to have a low SEP if two or more of the following conditions were

met: annual household income of <$40,000.00; an employment status of part-time of

unemployed (as opposed to full time, retired, students, or other); an educational attainment of

some high school or graduated high school (as opposed to some college or university, graduated

college or university, some graduate school, or graduated graduate school). We wanted to

combine the variables to create one SEP variable for several reasons. First, we are more

interested in how low SEP functions as a predictor of empathetic reactions to the messages than

each of the variables making up SEP individually. Creating this composite variable will also

make it easier to compare our data with data collected in the previous study, as the researchers

also created an SEP variable in the same way (Kirst et al., 2017; Shankardass et al., 2012). It was

also a practical decision, as the three variables are significantly correlated at the .01 level and so

entering them as one SEP variable into the regression models helps to combat any potential

multicollinearity (Midi, Sarkar & Rana, 2010). To ensure that we were not missing anything by

combining the variables, we also ran the regression models with the three variables separately

and found that none of them had an individual effect on sympathy or upset greater than their

combined effect.

Phase Two Data Analysis

The first step in the survey data analysis process was to clean the data. Any cases in

which the respondent did not consent to completing the survey or consented but did not complete

at least 80% of the survey were excluded from analysis. Next, we separated the data by survey

group: message 1, message 2, message 3, message 4, and the control group. We then removed

the control group from our analysis sample and created a message type variable named Survey to

compare the four message groups (see Independent Variables). The sample was fairly evenly

randomized across the four message groups (see Table 9).

Table 9. Sample per message group

	% (N)
Plight of the poor, social	25.3 (204)
Plight of the poor, hybrid	25.1 (202)
Privilege of the rich, social	24.7 (199)
Privilege of the rich, hybrid	24.8 (200)

Table 9: Sample per message group

Bivariate Analyses: Chi-Square and Logistic Regression.

To address research question (3) *With which attributions (e.g., messages emphasizing*

individual responsibility, societal responsibility) for health inequities do the Ontario public most

strongly agree?, Pearson's Chi-Square tests were used to identify message conditions associated

with reactions to the different message types (dependent variables). To address research question

(4) *Which message style is the most effective for communicating information to subpopulations*

that are more difficult to reach? and to further explore research question (3), logistic regression

analysis using interaction terms to test for effect modification was conducted to examine

predictors of empathetic responses to the four message types.

We began by identifying dependent variables for subsequent regression analyses, using

chi-square and ANOVA tests of all the potential dependent variables as identified in past similar

studies, including message strength, anger, and empathy (operationalized as sympathy for Brian

and upset by Brian's Situation) (see Measures) by the message type variable. The ANOVAs for

message strength by message type ($p = .152$) and anger toward Brian ($p = .871$) and anger

toward Brian's situation (p = .181) by message type were not significant, suggesting that

message type is likely not a strong predictor of anger or perceived message strength in this study.

Then we ran a chi-square test with the message type variable by sympathy and with message

type by upset, both of which were significant (see Table 10), suggesting that there is a

relationship between message type and empathy, and that message type might predict empathy in

this study. We determined that we would focus on sympathy and upset as dependent variables.

We also noted that message two (plight, hybrid) appeared to have the highest percentage

of positive responses for both sympathy and upset. Therefore, we collapsed the message type and

variable conducted separate chi-square tests with a dummy variable of message two (1 =

message two, 0 = all other variables), to confirm what the findings of the first chi-square test

suggested and that the responses of participants who read message two (plight, hybrid) were in

fact significantly different than the responses of participants who read one of the other three

messages (see Bivariate analyses results: Tests for Significance of Dependent Variables).

After running collinearity tests to check the logistic regression assumption of no

multicollinearity between the predictor variables (see Absence of multicollinearity), we ran

several multivariate logistic regression models to find a best fit for the data (see Multivariate

Logistic Regression Results). We entered all of the variables simultaneously to create a base

model, and then used a backwards stepwise approach to find our final parsimonious models (see

Ratio of Cases to Variables for a complete justification of the chosen approach). In the end, we

have eight models; four for Sympathy and four for Upset. Models 1a and b include only the main

effects for each variable on each dependent variable, while models 2a and b include the

interaction effects. Interaction effects were interpreted following guidelines laid out by the

National Centre for Research Methods (Strand, Cadwallader, & Firth, 2011).

Phase Two Results

Bivariate analyses: Tests for Significance of Dependent Variables.

To address research question (3) *With which attributions (e.g., messages emphasizing individual responsibility, societal responsibility) for health inequities do the Ontario public most strongly agree?*, the initial chi-square results for sympathy by message type and upset by message type suggested that more participants who read Message 2 ("plight of the poor", hybrid) agreed that they felt empathy for Brian when compare to the other three message types.

Table 10. Indicators of upset and sympathy for health inequities messages

Message Type	Upset by situation %	Sympathy for Brian %
1. Plight, social	61%	60%
2. Plight, hybrid	70%	71%
3. Privilege, social	61%	67%
4. Privilege, hybrid	54%	59%
Chi-Square	$X^2(3) = 9.73$	$X^2(3) = 8.35$
n	796	797
p	.021	.039

Table 10: Indicators of upset and sympathy for health inequities messages

To further test whether Message 2 is a significant predictor of empathy, the message types were re-coded and a second series of chi-square tests were run with a dummy variable where 1 = Message 2 and 0 = Message 1, 3, and 4 by upset and by sympathy (see Table 11).

Table 11. Chi-square Message 2 by upset and sympathy

Message Type	Upset by situation %	Sympathy for Brian %
2. Plight, hybrid	70%	71%
Chi-Square	$X^2(3) = 7.12$	$X^2(3) = 5.17$
n	796	797
p	.023	.008

Table 11: Chi-square Message 2 by upset and sympathy

Message 2 was a significant predictor of empathetic responses, with about 70% of readers responding with both sympathy towards Brian ($X^2(3) = 5.17$, $p = .008$) and upset by Brian's situation ($X^2(3) = 7.12$, $p = 0.23$).

Testing Assumptions of Logistic Regression.

In order to perform statistically sound binary logistic regression analyses, it is important to ensure that a logistic regression model is a good fit for the data in question. Tabachnick & Fidell (2013) indicate two practical issues to take into consideration when conducting a logistic regression analysis.

Ratio of cases to variables.

To mitigate the fact that there are eight predictor variables (see Predictor Variables) plus interactions terms in our regression models, we used a backwards stepwise regression model to derive the final parsimonious models while avoiding overfitting the data. Both individual predictors and interactions terms can complicate a model and having too many predictor variables compared to cases in a study can result large standard errors (Tabachnick & Fidell, 2013). With both of our dependent outcome variables (sympathy and upset), we began with the full model, including all of this theorized predictor variables (male, younger than 25, Conservative, Canadian born, low SEP), then scaled the model back. Tabachnick & Fidell (2013, p.441) suggest that researchers "…simplify the model by eliminating some predictors while still maintaining strong prediction". This involved removing non-significant variables one at a time to create a final parsimonious model that is the best fit for the data (Tabachnick & Fidell, 2013).

Absence of multicollinearity.

We used two collinearity tests to assure that the predictor variables are not too highly correlated and therefore not all necessary to include in the model. First, we ran a Pearson's r test

of correlation between the dichotomous predictor variables and concluded that none of the

variables are highly correlated (see Table 13: Test for multicollinearity), as Tabachnick & Fidell

(2013, p. 88) suggest controlling for variables that are correlated at r = .90 or above, p < .05.

Multicollinearity was not suspected, however there were a few predictor variables that were

significantly correlated with multiple other predictor variables (e.g., Message 1 and Message 2).

Midi, Sarkar and Rana (2010, p. 258) explain that "In some situation[s], when no pair of

variables is highly correlated, but several variables are involved in interdependencies,

[correlation tests] may not be sufficient. It is better to use multicollinearity diagnostic statistics

produced by linear regression analysis". Midi, Sarkar, and Rana (2010) suggest calculating

variance inflation factor (VIF) and tolerance values to further detect multicollinearity and

recommend excluding any variable with a VIF as high as 2.5 or above. As shown in Table 12,

the VIF values for all of the variables are well below 2.5, with the exception of Message 1,

which SPSS excluded. Message 1 could be a source of multicollinearity within the logistic

regression models, so we used Message 1 as the reference category for message type instead of

entering it as a predictor variable in the models (see tables 14 and 15). Finally, all four message

types were significantly correlated although the correlations were not strong enough to suggest

multicollinearity with each other. This was an important finding, as it was important to ensure

that the narrative messages were similar enough that reactions to each message could be

attributed to the differences in frame and not to any extraneous factors.

Table 12: Collinearity statistics (VIF and tolerance)

Independent Variables*	Tolerance	VIF
Low SEP	.97	1.03
Canadian	.98	1.02
Conservative	.97	1.03
Male	.98	1.03
35 Years and Older	.96	1.04
Message 2	.67	1.50
Message 3	.67	1.49
Message 4	.67	1.49

*Dependent variable: Sympathy for Brian

Table 12: Collinearity statistics (VIF and tolerance)

Table 13. Test for multicollinearity (correlations)

	Message 1	Message 2	Message 3	Message 4	Low SEP	Canadian	Male	Under 35	Conservative
Message 1	-								
Message 2	-.337**	-							
Message 3	-.334**	-.332**	-						
Message 4	-.335**	-.333**	-.329**	-					
Low SEP	.035	-.035	.026	-.026	-				
Canadian	-.022	.098**	-.035	-.042	.011	-			
Male	-.023	.002	.002	.019	-.001	-.066	-		
Under 35	.021	-.004	.021	-0.38	.158**	.077*	.078*	-	
Conservative	.034	.017	-.048	-.003	-.079*	.002	.111**	-.054	-

Table 13: Test for multicollinearity

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Multivariate Logistic Regression Results.

Upset by Brian's Situation.

Table 14 presents logistic regression models indicating main effects (model 1 and 3) and interaction effects (model 2a and 2b) of predictors of upset by Brain's situation. Just like the sympathy models, model 1 incudes all of the subpopulations that previous research identified as difficult to reach. Once again, of the three message types included in the model, Message 2 ("plight of the poor", hybrid) is a significant predictor of upset, with people who read Message 2 being 1.5 times more likely to respond with upset for Brian than people who read Message 1 (plight of the poor, social) (OR = 1.5, p - .043, 95% CI [1.01, 2.38]). Male gender identity and age group were highly significant predictors of upset in model 1. Readers identifying as male are less likely than all other gender identities to feel upset by the character's situation (OR = .55, p < .001, 95% CI [.41, .75]) and, contrary to previous research, younger people are almost two times more likely than older age groups to respond with upset (OR = .1.88, p < .001, 95% CI [1.38, 2.55]).

No other subpopulations significantly added to model 1, so we created models 2a and 2b and entered interaction terms to see if the significant predictors from model 1 are still significant predictors when interacting with each message type. Model 2a includes gender and message type interactions terms and model 2b includes age and message type interaction terms. None of the interactions terms significantly added to the models, so we created model 3, our final parsimonious model, through a backwards stepwise process in which we removed non-significant subgroup variables one at a time. In model 3, Message 2 remains significant (OR = 1.51, p = .054, 95% CI [.99, 2.30]), as well as age group (OR = 1.87, p < .001, 95% CI 1.38, 2.52]), as well as male and gender identity (OR = .53, p < .001, 95% CI [.40, .72]).

Table 14. Logistic Regression Models, predictors of upset by Brian's situation

	Reference	Upset by Brian's situation (odds ratios and 95% CIs)			
		Model 1	Model 2a	Model 2b	Model 3
Message Type					
2: Plight, hybrid	Message 1	1.56* (1.01, 2.38)	1.21 (.66, 2.12)	1.72[†] (.91, 3.28)	1.51[†] (.99, 2.30)
3: Privilege, social	Message 1	.99 (.66, 1.50)	1.04 (.57, 1.88)	.98 (.52, 1.86)	1.02 (.68, 1.54)
4: Privilege, hybrid	Message 1	.79 (.52, 1.18)	.70 (.39, 1.24)	.96 (.51, 1.78)	.79 (.53, 1.18)
Age					
Under 35 years	35 years and older	1.88*** (1.38, 2.55)	1.87*** (1.39, 2.52)	2.12* (1.18, 3.82)	1.87*** (1.38, 2.52)
Message 2 * Under 35				.79 (.34, 1.86)	
Message 3 * Under 35				1.07 (.46, 2.47)	
Message 4 * Under 35				.71 (.31, 1.62)	
Gender identity					
Male	Any other gender ID	.55*** (.41, .75)	.46** (.25, .81)	.53*** (.39, .71)	.53*** (.40, .72)
Message 2 * Male			1.53 (.66, 3.55)		
Message 3 * Male			.98 (.43, 2.24)		
Message 4 * Male			1.28 (.57, 2.90)		
Political Affiliation					
Conservative	NDP, Liberal, Other	.84 (.59, 1.19)			
Nationality					
Canadian	Not born in Canada	1.00 (.70, 1.41)			
SEP		1.10 (.78, 1.55)			
Low	High				

Table 14: Logistic Regression Models, predictors of upset by Brian's situation

***p < .001, **p < .01, *p < .05, [†]p < .10

Sympathy for Brian.

Table 15 presents logistic regression models indicating main effects (Model 1 and 2) and interaction effects (Model 3a and 3b) of predictors of sympathy for Brian. Model 1 includes variables for all of the subpopulations that were previously identified as difficult to reach. Of the three message types included in the model, Message 2 ("plight of the poor", hybrid) is a significant predictor of sympathy, with people who read Message 2 almost twice as likely to respond with sympathy for Brian than people who read Message 1 (plight of the poor, social) (OR = 1.69, p = .016, 95% CI [1.10, 2.60]). Once again, male gender identity and age group were the only significant predictors of sympathy in model 1. Readers identifying as male were less likely than all other gender identities to feel sympathy for Brian (OR = .75, p = .065, 95% CI [.55, 1.02] and, again contrary to previous research, younger people were more likely than the older age groups to respond with sympathy towards Brian (OR = 2.26, p < .001, 95% CI [1.66, 3.08]). No other subpopulation variables significantly added to the model, so we created model 2 through a backwards stepwise process in which we removed non-significant subgroup variables one at a time.

In model 2, Message 2 ("plight of the poor", hybrid) remains significant (OR = 1.69, p = .016, 95% CI [1.10, 2.57]), age group remains significant (OR = 2.37, p < .001, 95% CI [1.75, 3.20]), and male gender identity became a slightly more significant predictor of sympathy (OR = .72, p = .031, 95% CI [.53, .97]). We then created models 3a and 3b with interaction terms to examine whether the effects of each message type were moderated by age group and gender identity. In table 15 we see that model 3a includes age group and message type interaction terms and model 3b includes gender identity and message type interaction terms.

In model 3a, Message 2 ("plight of the poor", hybrid) remains a significant predictor, along with the main effects of age group and gender identity. However, none of the interaction terms are significant predictors. In model 3b, Message 2 remains a significant predictor (OR = 2.02, p = .018, 95% CIs [1.13, 3.64]) and Message 3 ("privilege of the rich", social) becomes a significant predictor as well (OR = 2.09, p = .015, 95% CIs [1.15, 2.78]). There are two significant interaction effects, both in model 3b: Message 3 * Male and Message 4 * Male (see Figure 7). To interpret the direction and strength of the prediction, we followed guidelines laid out by the National Centre for Research Methods (Strand, Cadwallader, & Firth, 2011) for evaluating interaction terms in logistic regression models. After calculating the EXP(β) values of Message 3 * Male, we find that males who read Message 3 were negatively associated with sympathetic responses and were only less likely to respond with sympathy (OR = 0.88, p = .028). Similarly, when we calculate the EXP(β) values of Message 4 * Male, we find that males who read Message 4 ("privilege of the rich", hybrid) were negatively associated with sympathetic responses and were only less likely to respond with sympathy (OR = 0.66, p = .043). Figure 7 charts the interaction effects for gender identity and message type on sympathy by plotting the predicted probabilities.
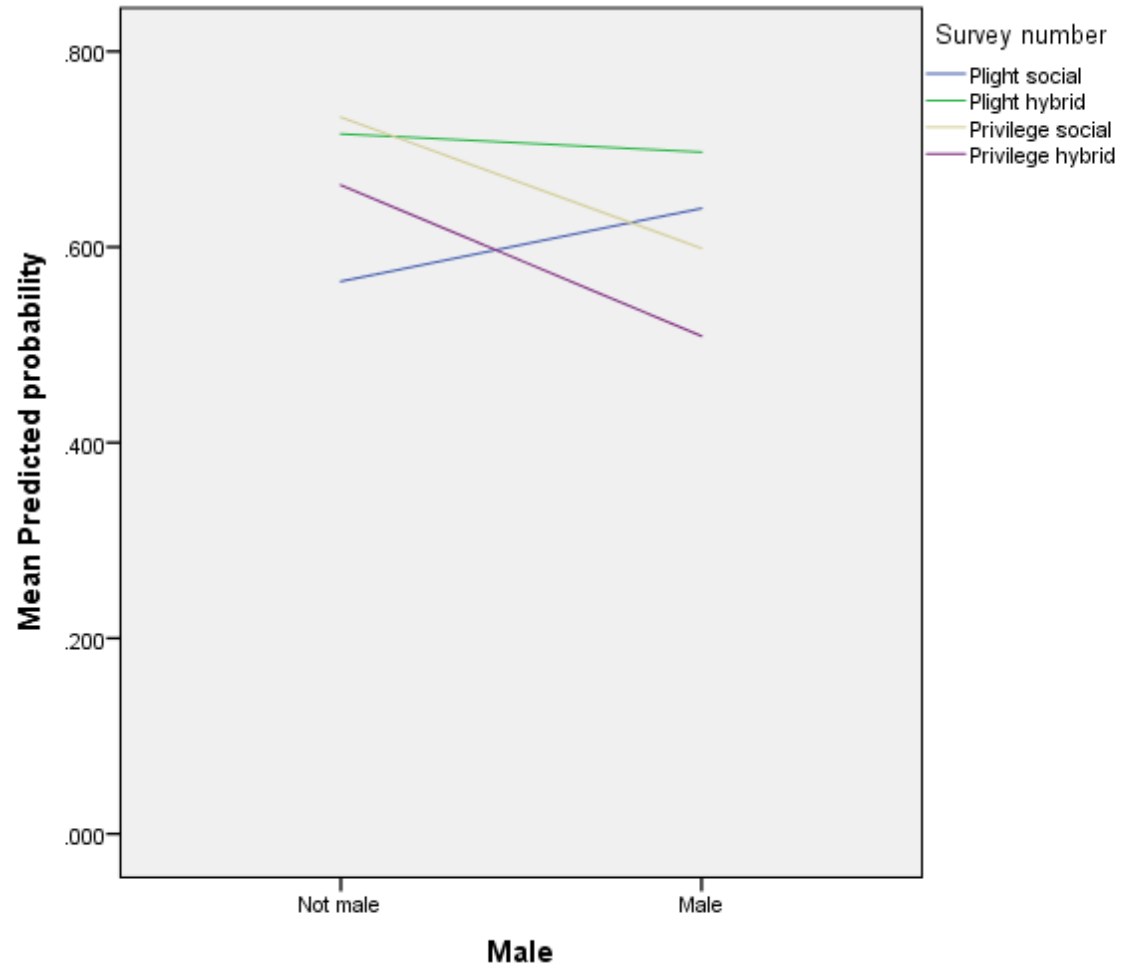
Figure 7: Predicted probabilities, gender identity x message type

Table 15. Logistic Regression Models, predictors of sympathy for Brian

	Reference	Sympathy for Brian (odds ratios and 95% CIs)			
		Model 1	Model 2	Model 3a	Model 3b
Message Type					
2: Plight, hybrid	Message 1	1.69* (1.10, 2.60)	1.69* (1.10, 2.57)	1.85* (1.05, 3.27)	2.02* (1.13, 2.64)
3: Privilege, social	Message 1	1.34 (.88, 2.04)	1.37 (.90, 2.08)	1.70† (.97, 2.98)	2.09* (1.15, 3.78)
4: Privilege, hybrid	Message 1	.98 (.65, 1.48)	1.00 (.66, 1.51)	1.15 (.67, 1.99)	1.47 (.83, 2.62)
Age					
Under 35 years	35 years or older	2.26*** (1.66, 3.08)	2.37*** (1.75, 3.20)	1.82* (1.02, 3.26)	2.32*** (1.72, 3.14)
Message 21* Under 35				1.26 (.54, 2.94)	
Message 3 * Under 35				1.65 (.71, 3.84)	
Message 4 * Under 35				1.39 (.61, 3.18)	
Gender identity					
Male	Any other gender ID	.75† (.55, 1.02)	.72* (.53, .97)	.73* (.54, .98)	1.20 (.67, 2.15)
Message 2 * Male					.67 (.29, 1.55)
Message 3 * Male					.42* (.18, .97)
Message 4 * Male					.45† (.20, 1.02)
Political Affiliation					
Conservative	NDP, Liberal, Other	.88 (.62,1.26)			
Nationality					
Canadian	Not born in Canada	1.02 (.72, 1.45)			
SEP					
Low	High	1.19 (.84, 1.68)			

Table 15: Logistic Regression Models, predictors of sympathy for Brian

***p < .001, **p < .01, *p < .05, †p < .10

Discussion

Which SDOH and Health Equity Frames Are Represented in Canadian Media the Most

Over the Past Two Years?

We addressed research question (1) using a media content analysis of Canadian news articles

over a two-year timespan from 2016 – 2018. We found that the most frequently mentioned

SDOH, after general mentions of SDOH, were income (24% of articles), Indigeneity (13.5%),

early childhood development (9.7%), housing (8.7%), food insecurity (5.8%), immigrant or

refugee status (4.9%), education (3.9%), and gender (3.9%), with the remaining SDOH

mentioned in only 2.9% or articles or less. It makes sense that the most frequently mentioned

SDOH was income, as two of the most frequently mentioned topics were government spending

and the Basic Income Guarantee pilot project. Indigenous health was also one of the most

frequently mentioned topics, leading to Indigeneity or Aboriginal status being the third most

frequently mentioned SDOH.

These results were somewhat expected, as two of the most frequently mentioned SDOH are

income and Indigeneity. With members of the Liberal party in office both federally and

provincially for Ontario in the years 2016 – 2017, there was a lot of media attention on

Indigenous Truth and Reconciliation federally and on the Ontario Basic Income Pilot (OBIP)[2]

provincially. We did not necessarily expect to find so many general mentions of SDOH, although

it does make sense considering our search technique; in the end we decided that our only search

term would be "social determinants of health" in order to combat the common issue when doing

a media analysis of having an overwhelming number of results that are not necessarily pertinent

---

[2] The OBIP, cancelled by the provincial Conservative government in 2018, was a pilot program in Hamilton, Thunder Bay, and Lindsay to test a poverty reduction strategy in which eligible participants were ensured a minimum income level, regardless of employment status (Ministry of Children, Community and Social Services, 2019).

to the topic (Macnamara, 2005). It is promising to see that there is such a large volume of news

articles from the past two years mentioning SDOH in general. This suggests that this may be an

optimum time to create evidence-based public awareness campaigns about the negative effects of

SDOH, as it is an issue commonly discussed in the media and may already be salient for many

Ontarians.

    As for health equity frames, we actually found that two emergent themes, government

responsibility and social responsibility, were the most common way for news articles to frame

health equity. These two frames are more action-based than the predetermined frames, "plight of

the poor", "privilege of the rich", or "blame the poor", with government responsibility framing

health inequity as a problem that the government should solve and social responsibility framing

health inequity as a problem that we need to work together to solve as a society. Again, these top

two frames coincide with the most frequent topics found, as government spending relates to a

government responsibility frame and community initiatives relate to a social responsibility

frame. The next most frequently used health equity frames were "plight of the poor" and

"privilege of the rich". Hardly any articles framed health inequities in a way that blamed the

poor. The frames used in the media articles were also very distinct, with almost no articles using

more than one frame to explain health equity.

    These results were somewhat unexpected in terms of the commonality of the two emergent

themes, government responsibility and social responsibility. Our findings suggest that the media

is focused more on solving the problem than attributing cause. Again, this suggests that this may

be a good time in Ontario to continue raising awareness and spurring political will to change

SDOH policy. It is certainly encouraging to see so many news articles critiquing current

governmental health care spending and asking more from their government when it comes to

taking responsibility for the negative effects of SDOH. The frequency of occurrence of the

predetermined frames was somewhat expected; just as Lofters and colleagues (2014) suggested,

most people in Ontario prefer a "plight of rich" or "privilege of the poor" frame over a "blame

the poor" frame. However, while previous research found that Ontarians have no preference

between "plight" and "privilege" frames, our media content analysis findings show that "plight"

frames are much more common that privilege frames (Lofters et al., 2014). The salience of a

plight frame with the Ontario public helps to interpret the results of our findings from the survey

data.

What Can Be Found in the Literature About Narrative Messages as a Tool for Raising

Awareness About Health Topics?

We addressed research question (2) by conducting a broad review of health

communications literature and compiling the key findings. A detailed account of these findings

and their subsequent application in the development of messages for testing in phase two can be

found earlier in this paper (see Literature Review and Message Development). Nine key findings

emerged from the literature:

1. Messages that evoke values are more effective (Brewer & Gross, 2005; Gollust et al., 2009;
   Robert Wood Johnson Foundation, 2010)

2. Highly emotional messages, particularly messages that focus on positive emotions such as
   empathy, are more likely to be effective (Durkin et al., 2009; Robert Wood Johnson
   Foundation, 2010; Friedman et al., 2014)

3. Narratives are more effective than fact-based appeals when it comes to delivering health
   information to the public (Durkin et al., 2009; Niederdeppe et al., 2011; Niederdeppe et al.,
   2014)

4. Racial disparities frames are unethical and ineffective (Niederdeppe et al., 2008; Lundell et al., 2013; Friendman et al., 2014)

5. Personal responsibility only frames are ineffective, but combining personal responsibility with a social determinants frame has been shown to be effective in communicating health information (Gollust et al., 2009; Gollust & Cappella 2014)

6. SDOH messaging communicates values that are inherently associated with Liberal voters, and effort should be made to include values that align with a Conservative ideology (e.g., personal responsibility, freedom) (Gollust et al., 2009; Robert Wood Johnson Foundation, 2010)

7. Guilt appeals are unethical and ineffective (Niederdeppe et al., 2008; Robert Wood Johnson Foundation, 2010; Gollust et al., 2014)

8. Emphasizing the action that people can take to alleviate a problem makes a health message more effective (Niederdeppe et al., 2008; Robert Wood Johnson Foundation, 2010; Lundell et al., 2013)

These findings informed that development of messages on health inequities that we tested in Phase 2.

With Which Attributions (e.g., messages emphasizing individual responsibility, societal responsibility) for Health Inequities Do the Ontario Public Most Strongly Agree?

To address research question (3), we conducted chi-square tests and created logistic regression models. Results show that message 2, the "plight of the poor" and individual/social responsibility hybrid frame, garnered the most empathetic responses, significantly more than the other three message types, across the entire sample. Message 2 had a significant relationship with both indicators of empathetic responses, including sympathy towards Brian and upset by Brian's

situation. Message 2 was also a significant predictor of both sympathy and upset across all eight logistic regression models.

These findings align with findings from phase one, as well as findings in previous studies of a similar nature. "Plight of the poor" was one of the most frequently occurring health equity frames that emerged from the media content analysis. This suggests that the media frequently frames health equity in this way, and therefore these frames of understanding health inequity are easily accessible to most Ontarians. It is also possible to infer that respondents would feel more empathy towards the character and the character's situation when it is framed as a "plight of the poor", or due to social disadvantages that the poor experience, as opposed to framed as due to advantages that the rich experience. Additionally, findings from previous studies of a similar nature also found that a hybrid frame was the most effective (Gollust et al., 2014; Niederdeppe et al., 2015). Introducing an individual responsibility component to the messages not only made the messages more believable, but also made it easier for readers to empathize with the character because his values (individuality) align with their own. This framework reflects research on health communication which suggests that emotional appeals to positive emotions such as empathy dampen reactions of anger and resistance to the messages (Durkin et al., 2009; Robert Wood Johnson Foundation, 2010; Friedman et al., 2014). In this case, a "plight of the poor", hybrid frame elicited both sympathy and upset.

On the other hand, the "privilege of the rich"- hybrid frame received the least empathetic responses in terms of both upset and sympathy across the sample and was in fact negatively associated with empathetic responses for male participants (see Which Message Style is the Most Effective for Communicating Information to Subpopulations That Are More Difficult to Reach?). The hybrid framework appears to strengthen empathetic responses when paired with a

"plight of the poor" frame, but not when paired with a "privilege of the rich frame". There is a

clear power dynamic introduced within the "privilege of the rich" messages that is not

emphasized in the "plight of the poor messages". Perhaps it was more difficult for participants to

accept the individual responsibility factor of the hybrid framework when the narrative displayed

health as attributed to the advantages of the rich. When there is already a clear socially

constructed power dynamic within the narrative, a social frame might be more believable for

readers.

Which Message Style is the Most Effective for Communicating Information to

Subpopulations That Are More Difficult to Reach?

To address research question (4), we fit logistic regression models to the data and observed

the interaction effects between significant subpopulation predictor variables (age group and

gender identity) and each of the message types included in the models (Message 2, Message 3,

and Message 4). Despite finding main effects of both gender identity and age group in predicting

responses of both sympathy and upset, there were few significant interaction effects in the

regression models. There were no significant interaction effects within the upset models, or

within the sympathy and age group model.

While two significant interaction effects were found in the model examining interactions

between sympathy and gender identity (model 3b), the results did not highlight any of the

message types as more effective for people who identify as male. As displayed in figure 7, the

interaction between male gender identity and Message 3 ("privilege of the rich", social) had a

significant effect on sympathetic responses, as well as the interaction between male gender

identity and Message 4 ("privilege of the rich", hybrid). The direction of the two significant

interaction effects are negative,), indicating that the interaction terms are significant predictors of

not responding with sympathy. This is interesting, as both Message 3 and 4 use a "privilege of the rich" frame, further supporting our findings that a "plight of the poor" frame is the most effective for evoking empathetic responses. This will have to be taken into consideration as future research is conducted using this data, and as these findings are applied to inform provincial public health campaigns.

Empathy and the Canadian Context

As the current study was modelled off of two American studies, it was of great interest to compare our Canadian findings to results found in the US (Gollust et al., 2014; Niederdeppe et al., 2015). Highlighting the similarities and differences between study findings is an important way to discover potential avenues for future research, as well as to help contextualize and explain the findings. Contrary to findings in an American context, we did not find that anger or perceived message strength were significantly related to the different message types. However, we found that both sympathy for Brian and upset by Brian's situation were strongly significantly related to the message types. This is perhaps the main difference in our findings compared to similar studies done in the US, and it could suggest that the indicators of message efficacy used in the US do not translate well to the Canadian context (Gollust et al., 2014; Niederdeppe et al., 2015). Colloquially, Canada is often thought of as "friendly", especially in comparison to our neighbours. Are these stereotypes true and, if so, does friendliness mean that Canadians are more empathetic? Some of the most drawn upon work for comparing American values to Canadian values has been done by sociologist Seymore Martin Lipset. In his many books and articles, Lipset presents historical events, as well as political and economic trends to illustrate differences between Americans and Canadians. One of Lipset's arguments is that "Canadians are more collectivity oriented than Americans and therefore are more likely to support government

intervention" (1986, p. 135). This supports our findings from the content analysis and suggests that perhaps Canadians are less likely to react with anger to messages on health inequities.

A more recent study quantified the differences between Canadian and American values by analyzing patterns in the language used in tweets between the two countries (Snefjella, B., Schmidtke, D., & Kuperman, V., 2018). Findings indicated that the patterns of language used reflect prominent stereotypes about Canadians and Americans and show that "…Canadian words are more positive" (Snefjella et al., 2018, p. 28). It was found that Canadian language use reflected low neuroticism, high agreeableness, high conscientiousness, high interpersonal warmth and positive emotions, low assertiveness, and high openness. Given these findings, it makes sense to infer that our sample was not as likely as the samples in previous American studies to react with anger to the messages and more likely to react with empathy.

Empathy alone is an indicator of message efficacy and is a driver of attitude and behaviour change. In communication and marketing literature, empathy appeals "…emphasize consequences, not to oneself, but to others with whose pain or grief one can empathize" (Slater, 1999, p. 72). Attribution theory is the starting point for empathetic reactions. Weiner suggests that attributions of responsibility for health outcomes ultimately lead to one of two affective outcomes: anger when the individual's health is attributed to a lack of effort, or sympathy when attributed to a lack of ability (see Figure 5: Model of health attributions). In this model, lack of ability is a broad term. It is considered to be an inference made about an individual, whether or not it is based in reality, and is usually conceptualized as a lack of aptitude but can also include "…any situation in which people are perceived as not personally responsible for their plights" (Weiner, 1993, p. 959). These situations can be anything from perceived moral obligations (e.g., an individual is unable to go to school because they are caring for a sick parent), to

uncontrollable social factors such as age and disability, any other factor considered to be

mitigating by the individual making the inference (Weiner, 1993). Overall, a lack of ability is a

lack of effort that is seen to be out of the control of the individual (i.e., not the responsibility of
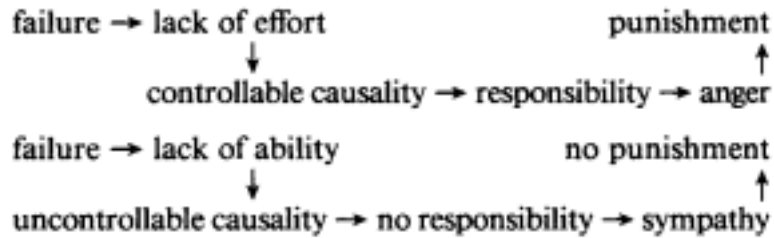
the individual).

failure → lack of effort   punishment
              ↓   ↑
         controllable causality → responsibility → anger
failure → lack of ability   no punishment
              ↓   ↑
     uncontrollable causality → no responsibility → sympathy

Figure 8: Model of health attributions

Eliciting empathy, sympathy, and upset from readers will lead to prosocial, helping

behaviours (Weiner, 1993), which can include supporting health equity policy to increase the

strength of SDOH (Lundell et al., 2013). According to Affective Disposition Theory, we may

empathize with the characters that we like in a narrative. When the reader likes a character, the

reader "…can identify with their struggles, empathize with their pain, and hope for their ultimate

success" (Raney, 2004, p. 351). Research shows that feelings of empathy can in turn lead to

persuasion (Shen, 2010), particularly when addressing health-related issues (Freidman et al.,

2014; Niederdeppe et al., 2015). It is the feeling of empathy that could inspire readers who do

not feel the negative effects of SDOH themselves, to support policy that will increase health

equity for those negatively affected by SDOH.

This is particularly important when addressing subpopulations who may be resistant to

messaging on health inequities or more difficult to reach, such as people who identify as male,

vote Conservative, or were born in Canada (Shankardass et al., 2012; Kirst et al., 2017). Just as

Weiner's (1993) model depicts, empathetic feelings such as sympathy arise in place of anger and

resistance to messages that one finds unbelievable or contradictory to their values and ideologies (Niederdeppe et al., 2011). Empathy appeals are "…difficult to avoid or counterargue. In appealing to fundamental norms of decency and concern about others, they are less easy to dismiss than messages that appeal to fear about one's own well-being" (Slater, 1999, p. 72; Shen, 2010). For this particular project, it may be most prudent to highlight empathetic reactions to the messages as an indicator of message efficacy when attempting to reach subpopulations that have been shown to be more resistant to health equity messaging. Additionally, Freidman (2014, p. 1002) suggests that positive appeals, including appeals to empathy, may "…foster positive relationships between public-health agencies and affected communities" and that "This will reflect the shift that is already underway in public health, from a disease/disparities focus, toward a health-promotion/equity focus." Overall, empathy appeals decrease message resistance, increase persuasion to support health equity policy, and work particularly well when trying to reach more reluctant subpopulations. These findings will be helpful in informing future public awareness campaigns in Ontario to take on an empathy-appeal framework.

Limitations

Limitations of methods.

Elo & Kyngäs (2008) address several main limitations of a qualitative content analysis. There is often a large amount of data to analyze, rendering analysis and the reporting of results a difficult task. Content analysis is also known to be complex when it comes to guidelines on analysis, as there are many different ways to use this method. Therefore, it is important that the researcher has a high degree of analytic insight. There is no single way to conduct content analysis that is better than another; the analysis style must fit the goals of the research. Another limitation of this method specific to this project is that there were only the resources for one

person to code the media sample. We attempted to mediate this by having the coder read through

the sample in two separate stages and consult with a supervisor who has expertise in media

content analysis throughout the process. However, content analysis literature suggests having

two or more coders in order to increase the rigour of the method and ensure reliability

(Macnamara, 2005).

There are several commonly cited limitations of using an online quantitative survey as a

method of data collection (Blackstone, 2012). Despite conscious testing for reliability and

validity, there may be items that do not work well. If a question is misinterpreted by a large

number of respondents, this will decrease the reliability of the item and the validity of the survey.

This is especially a problem when using a survey, because there is no option to probe

respondents. Additionally, there is no way to change the item once the surveys are distributed. A

final limitation is with the recruitment process. While there are many benefits to using an outside

research firm to recruit participants, this could also create an unrepresentative sample as all

participants will inherently have something in common – their affiliation with the firm. It is

important to keep all of these potential limitations in mind while analyzing the data. For

example, the age distribution in the sample was not representative of the province of Ontario.

Additionally, in the context of this specific project, the representativeness of the sample may be

limited as the survey was only in English, thus omitting non-English participants. Finally, social

desirability bias may affect participants' responses, particularly for items to which responses

may insinuate laying blame on individuals for health inequities.

Limitations of the research objectives.

There is also a limitation to point out about the research objectives themselves. The goal

of this work is to increase Ontarian's awareness about SDOH and health inequities in the

province in order to shift public opinion and increase political will surrounding health equity

policy changes. Ideally, narrative change will lead to attitudinal change, which will lead to health

policy change. It is recognized that this is not a short-term process, and that raising critical

consciousness about SDOH and changing attitudes and attributions of health inequity may not

lead directly to attitude change and policy change without a good knowledge translation and

exchange plan to encourage political action.

Even with a knowledge exchange plan, an evidence-based public health campaign, and a

shift in public opinion and problem definition of health inequity, there may still be barriers to

policy change. Greater public awareness does not necessarily mean that governments will act.

The concept of SDOH is not novel, yet there is little direct policy in place to reduce health

inequities (Mikkonen & Raphael, 2010; Lynch, 2017). This lack of action could be the result of

many barriers. For example, there may not be enough existing evidence about what changes to

policy work to decrease health inequity or there might be other actors within the health industry

that have more power over policy decisions than the general public (Lynch, 2017). Some

literature suggests that "…reframing social inequality as a problem of health medicalizes the

problem of inequality, making it seem less amenable to systemic or structural solutions" (Lynch,

2017, 656). It is a difficult balance to strike; while framing health inequity as solely the

responsibility of individuals will not results in policy that eliminates negative effects of social

determinants on health, framing health inequity as a social problem can make the issue seem

difficult to solve. Lynch suggests that, instead of focusing on framing health inequities as social

or individual, the best way to strengthen SDOH and reduce inequity might be to "…adopt a more

'traditional' plan for reducing social inequality consisting of taxation, redistribution and labor

market regulation" (2017, p. 658).

However, it has been documented that political will is often needed to make that change, and there is literature to support the need for a public understanding of a problem before political engagement and policy change takes place (Hickman & Riemer, 2016; Peacock, 2015; Cerna, 2013; Nelson, 2013; Mikkonen & Raphael, 2010; WHO, 2008), as well as literature to show the connection between narrative change, attitudinal shifts, and policy change (Davidson, 2016; Jones & McBeth, 2010), which has been the argument laid out throughout the body of this thesis. Considering past work on public opinion in Ontario around SDOH and health inequity, it is still clear that there needs to be a general shift away from the individualistic ideals of citizens to a collective view of health through increased awareness of the effects of SDOH before there will be any public traction behind SDOH related health policy changes (Kirst et al., 2017; Mikkonen & Raphael, 2010; WHO 2008). It is noted that the connection between awareness and policy change is indirect and should be framed as so.

Limitations of the results.

Limitations of the data emerged throughout the data analysis process, which may have an effect on the results of this study. Some of these issues arose due to the data collection process with the external market-research firm Dynata. One of these limitations is that our sample consists of a specific population of Dynata users. This has the potential to set our population apart from the Ontario population in unforeseen ways. One that emerged is the lack of older participants in our sample. With 18 participants in the 55 – 64 age group and only 3 in the 65+ age group, our sample does not reflect the Ontario population.

The lack of older participants made it difficult to compare our results with previous work done by the research team. When identifying subpopulations that were more difficult to reach, previous research stated that people 55 years and older had more knowledge about SDOH that

the younger age groups (18 – 24, 25 – 34, 35 – 44, 45 – 54). In order to create a dummy variable

for age group to use in our logistic regression models, we had to change the cut off age to 35,

with the younger age groups consisting of 18 – 24 and 25 – 34 and coded as 0, and the older age

groups consisting of 35 – 44, 45 – 54, and 55 – 64, and 65+ and coded as 1. While we still found

significant results with our findings, it is not as concise when making comparisons to previous

studies.

Another unexpected demographic spread was political affiliation. Whereas the previous

study conducted with Ontarians reported that most respondents were either liberal or

conservative voters, with few selecting other and even fewer selecting NDP, the current study

sample was almost evenly distributed across Liberal, NDP, Conservative, and Other

(Shankardass et al., 2012). While this is not a limitation of the current study, it does limit our

ability to compare results to our previous work. One reason for the "other" category having so

many more respondents could be that we did not provide a separate category for "unsure/don't

know", which was done in the previous study. However, there is an increase of over 10% of

respondents selecting NDP as the party they would vote for in the next election. This could be

due to the lack of older participants in the sample. However, it is also possible that Ontario's

current political context has shifted political ideologies of many Ontarians who are looking to a

different political party after feeling disappointed with the previous liberal or the current

conservative parties in power. This is a potential reason that the conservative voter subgroup did

not have a significant association with empathetic responses, despite previous research

identifying conservative voters as less likely to support health equity solutions (Kirst et al.,

2017).

Future Directions

The results present many opportunities for future research and action. The lack of angry

responses compared to those found in previous American research and the strong empathetic

responses to the narrative messages suggests that future research is needed on the effects of

empathy-appeals for a Canadian audience (Niederdeppe et al., 2014; Gollust et al., 2014). The

survey produced more data that has not been analyzed within the scope of this particular thesis

project. It will be interesting to look at the qualitative data that we collected in the form of

"thought listing" immediately after participants read their message. This is a measure of

counterarguing, an additional measure of message efficacy that lay outside the scope of this

thesis to analyze. This current thesis focuses on comparing the four message groups to each

other. Comparing these message groups to the control group will add value to our findings by

determining whether the messages led to attitude or behaviour change when it comes to their

opinions about SDOH and health equity interventions and solutions.

Knowledge Translation and Exchange Plan

Of course, future directions include how we will disseminate the findings from the project.

This has been ongoing as there was an integrated knowledge translation approach incorporated

throughout, whereby advisory group members were involved throughout every stage of the

project. As mentioned, our advisory group comprised of research team members and key

stakeholders in the area of study, such as a representative from LISPOP and representatives from

the Ontario Public Health Unit Health Equity Working Group. This advisory group provided

ongoing input on both phase one and two, as well as all stages of the study including survey

design, and data interpretation. This will allow for ongoing dissemination of study findings to

both academic and community partners through our semi-annual in-person meetings, as well as through email information exchange.

In terms of disseminating our findings to people outside of our research team and advisory group, we recently presented our preliminary findings at the Society for Community Research and Action Biennial Conference in Chicago, Illinois. This project was presented as a poster, and we had the opportunity to engage in conversation about our ongoing work with both researchers and practitioners from across North America. Another goal for the project is to produce two papers to be published in high impact journals including *Health Affairs, American Journal of Public Health,* or *PloS One*. Additionally, anonymized data collected during phase two will be archived and made available to researchers by request. There is still a lot of data from the survey to be analyzed, as this thesis project only touched on a small aspect of the data. Finally, this thesis paper will be published and made available through Wilfrid Laurier University for anyone to read online and make use of in their own projects.

Looking to the future, funding is being sought to support a knowledge translation event to be held in collaboration with the Ontario Public Health Unit Health Equity Working Group after analysis of the all of the experimental data is complete. The event should involve a workshop during which findings will be shared with additional stakeholders including service providers, researchers, and policy-makers. A key component of the event will be a brainstorming session on how to use study findings regarding message framing to develop public awareness campaigns. The workshop should also support a culture of innovation and change, provide an opportunity to generate new knowledge, and have opportunities for networking.

Impact

The WHO (2008) states that addressing SDOH and health inequities is an ethical

obligation. Any health inequity determined by a social factor is avoidable and therefore unjust.

Despite the evidence of the effects of social determinants on health outcomes, Ontario is not

allocating enough resources towards strengthening SDOH (Mikkonen & Raphael, 2010).

Changes to policy are considered to be the best way to decrease the negative effects of SDOH

(Mikkonen & Raphael, 2010; WHO 2008). Over half of Ontario citizens currently believe that

everyone in the province has an equal chance at a healthy life and that the government has no

role to play in addressing health inequity (Kirst et al., 2017), suggesting that part of the reason

that policy does not sufficiently address SDOH is due to the lack of public and political traction

on these issues (Mikkonen & Raphael, 2010; WHO 2008). Raising awareness through narrative

change techniques has been shown to contribute to shifts in attitude and subsequent policy

change (Davidson, 2016; Jones & McBeth, 2010). Our findings show that this can best be done

through eliciting empathetic responses to the messages, that will lead to attitudinal change and

eventually an increase of political will that will lead to policy change. Attempting to shift the

dominant narrative of individualistically determined health in Ontario will decrease victim-

blaming and increase Ontarians' recognition of the larger social structures influencing our own

health, while putting pressure on the government to act and address the issue of health inequity

in Ontario.

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Appendix A: TCPS2 Ethics Certification

PANEL ON
RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE

Certificate of Completion

This document certifies that

Emily Churchill

has completed the Tri-Council Policy Statement:
Ethical Conduct for Research Involving Humans
Course on Research Ethics (TCPS 2: CORE)

Date of Issue: **10 September, 2017**

Appendix B: Survey

Message Survey

Wilfrid Laurier University Department of Psychology   Changing the Narrative About Social Determinants of Health Inequities: Testing messaging with Ontarians (REB#5946)   Co-investigators: Dr. Maritt Kirst, Faculty & Researcher, Wilfrid Laurier University Dr. Ketan Shankardass, Faculty & Researcher, Wilfrid Laurier University Dr. Aisha Lofters, Faculty & Researcher, Saint Michael's Hospital and University of Toronto Emily Churchill, Graduate Student, Wilfrid Laurier University   You are invited to participate in a research study. The purpose of this study is to determine how to best raise awareness about how social factors can determine our health in Ontario.   INFORMATION   If you choose to participate, you will be asked to complete a brief online survey with questions about how social factors can determine good or bad health among certain groups in Ontario and you will be asked to provide socio-economic and demographic information, such as your age and gender identity. You may also be asked to read a story and answer some questions about the story. The survey is expected to take approximately 15 – 20 minutes to complete, and will be completed online. You will be randomized to one of five possible surveys that have questions about your opinions and thoughts on public health in the province of Ontario. The study will help to identify messaging strategies to help raise awareness about how larger, social factors can affect our health in the Ontario context. By doing so, we can work to create accessible campaigns to improve public and political support for increasing health equity in the province.   Participants must be English-speaking, 18+ years of age, and residents of Ontario. We expect approximately 960 participants to take part in this study.   RISKS   Your participation is voluntary and there are minimal risks associated with the research study. While the risk is low, it is possible that you will have experienced challenges with your health and may respond emotionally to the story or other questions in the survey. These feelings are normal and should be temporary. If you experience any lasting negative feelings as a result of participating in this study, please contact the researchers. We will provide a link at the end of the survey that provides information on services and resources should participants feel distressed as a result of completing the survey.   All survey responses are anonymous. Additionally, you are free to decline answering any question(s) or withdraw from the study at any time. All information will only be used anonymously in reports to the community, research presentations, and publications.   BENEFITS   Health begins where we live, learn, work, and play. The information gained from this survey will help to inform the development of strategies to raise awareness of the impact of social factors on health and solutions to these issues in Ontario. It will also lead to knowledge sharing workshops in which the findings will be shared with community partners (e.g., public health units in Ontario) in order for others to make use of these strategies. Ultimately, your responses will help to raise the consciousness of Ontarians about the effects of social factors on health, and potentially lead to positive health policy change.   CONFIDENTIALITY   All reasonable measures will be taken to ensure that your personal information is kept confidential. Please note, however, that while in transmission on the internet, confidentiality of data cannot be guaranteed. The researchers acknowledge that the host of the online survey (Qualtrics) may automatically collect

participant data without their knowledge (i.e., IP addresses). Although this information may be provided or made accessible, the researchers will not use or save this information without participants' consent. Your survey will be assigned a unique numerical identifier and will not be stored with your personal information. Electronic data will be stored on a password-protected high security access restricted network drive. The data, which contain no identifying information, will be retained indefinitely for future analyses. Only the researchers, Dr. Maritt Kirst, Dr. Ketan Shankardass, Dr. Aisha Lofters and Emily Churchill will have access to the data from this study.   COMPENSATION   For your participation, you will receive 15 – 20 or more opinion points through Dynata. If you choose to withdraw from the study, you will still receive the same amount of compensation.   CONTACT   If you have any questions at any time about the study or the procedures (or you experience adverse effects as a result of participating in this study), you may contact the lead investigator Dr. Maritt Kirst (mkirst@wlu.ca, 519-884-0710 ext. 3077) or co-investigator Emily Churchill (chur8490@mylaurier.ca, 519-884-0710 ext. 4250).   This project has been approved by the University Research Ethics Board (REB #5894). The REB is supported by the Research Support Fund. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Jayne Kalmar, Chair, University Research Ethics Board, Wilfrid Laurier University, 519-884-0710 ext. 3131 or REBChair@wlu.ca.   PARTICIPATION   Your participation in this study is voluntary. You may decline to participate without penalty. If you decide to participate, you can omit any question(s) or procedure(s) you choose, or withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you inform us that you would like to withdraw from the study, every attempt will be made to remove your data from the study, and have it destroyed. Please note that once data collection is complete, your data cannot be removed because they are stored without identifiers.   FEEDBACK AND PUBLICATION   Results of the research may be disseminated in academic journals such as the American Journal of Community Psychology or presented at a scholarly conference. The findings may be made available through Open Access resources. There will be a knowledge sharing event to present the findings at a date to be determined after the study is complete. You will be invited to provide your email address should you wish to receive an electronic summary of the results, which will be available by October 1, 2019.

Page Break ———————————————————————————————————

CONSENT Consent to participating in the study(Please check the appropriate box)

◯ I have read and understand the above information. I agree to participate in this study. [clicking here will lead to study]

◯ I have read and understand the above information. I do not want to participate in this study. [clicking here will bring you to the end of the survey]

——————————————————————————————————

Consent to using quotations(Please check the appropriate box)

○ I have read and understand the above information. I agree to have my responses published as anonymous quotations.

○ I have read and understand the above information. I do not want to have my responses published as anonymous quotations.

Thank you for agreeing to participate in this study. We would like to ask you for your opinion on topics related to health, and on the things that determine people's health in Ontario. We ask that you answer questions based on your level of agreement in general and on average. You may skip any questions that make you feel uncomfortable or that you are unsure of how to answer, and you can end the survey at any time.

To begin, we are going to ask you some general questions about your own health, as well as your knowledge of health issues in Ontario.

- -

——————————————————————————————————

In general, would you say your health is?

○ Poor

○ Fair

○ Good

○ Very good

○ Excellent

In general, would you say that your knowledge and understanding of health issues affecting Ontarians is...?

○ Poor

○ Fair

○ Good

○ Very good

○ Excellent

Page Break ———————————————————

The next series of questions will ask your opinion about health differences between the rich and the poor.

Page Break ———————————————————

Please tell me whether you agree or disagree with the following statements…

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
In Ontario, all people are equally healthy and can expect to live for more or less the same amount of time.	○	○	○	○	○
In Ontario, people who are rich are much healthier than those who are poor.	○	○	○	○	○
In Ontario, people who are poor are less likely to live into their 80's than people who are rich.	○	○	○	○	○
Over the last few years in Ontario, people who are rich have become healthier while people who are poor have become less healthy.	○	○	○	○	○

End of Block: Knowledge of Health Disparities by SES

Start of Block: Attributions

What is your level of agreement with each of the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The poor are less healthy because of their lifestyles – they smoke and drink more, don't exercise and eat junk foods.	○	○	○	○	○
The rich are healthier because they have money to buy things that make them healthy.	○	○	○	○	○
The rich are healthier because they live in better houses in better neighbourhoods.	○	○	○	○	○
The poor have less control and resources in their lives than the rich, which makes them less healthy.	○	○	○	○	○
The poor are less healthy because they have more stress and anxiety in their lives than those who are better off.	○	○	○	○	○

If you have poor
health it has
little to do with
the amount of
money you
have; more than
likely you
inherited it from
your parents.

    ○   ○   ○   ○   ○

If you work in a
poorly paying
job the
insecurity you
feel can have a
bad effect on
your health.

    ○   ○   ○   ○   ○

Because the
poor don't
invest in
continued
education, they
don't know how
to maintain their
health.

    ○   ○   ○   ○   ○

Even though
everyone in
Ontario has
access to
medical care,
the rich get
more out of the
health care
system than the
poor.

    ○   ○   ○   ○   ○

The rich have
more choices
and more
control over
their lives and
health than the
poor.

    ○   ○   ○   ○   ○

The rich are
healthier
because they
have better
access to high
quality foods.

    ○   ○   ○   ○   ○

Some people are at the top of the social ladder and some people are at the bottom; this is why the rich are healthier than the poor.

○ ○ ○ ○ ○

The poor smoke and drink more to help them cope with the stress and anxiety in their lives; that is why they have poor health.

○ ○ ○ ○ ○

The poor spend what money they have unwisely because they do not want to feel excluded from the good things in life.

○ ○ ○ ○ ○

The rich are healthier because their childhood experiences are much better.

○ ○ ○ ○ ○

The rich are healthier because they have more education and know how to stay healthy.

○ ○ ○ ○ ○

End of Block: Attributions

Start of Block: Message 1 (Plight, Social)

Now we'd like you to view a short message. Once you click the "next" arrow button, the text of the message will appear on your screen – please read along.

- -

——————————————————————————————————————

MESSAGE 1, 2, 3, or 4 HERE (see Appendix C)

End of Block: Message 1 (Plight, Social)

Start of Block: Thought Listing

Now that you have read the short message, the next few questions will ask you about your response to Brian's story.

- -

——————————————————————————————————————

We'd like for you to list five thoughts that came into your mind as you were reading the story. Just try to remember the thoughts that crossed your mind while you were reading the story. Please try to write out sentence-length descriptions of each thought.

_____

_____

_____

_____

_____

End of Block: Thought Listing

Start of Block: Responsiblity

How much do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The story emphasized the role of Brian's neighbourhood in his health.	○	○	○	○	○
The story emphasized the role of Brian's personal decisions in his health.	○	○	○	○	○
The story suggested that Brian is personally responsible for his health.	○	○	○	○	○
The story suggested that his society is responsible for helping Brian to maintain his health.	○	○	○	○	○
The story suggested that health is under Brian's control.	○	○	○	○	○
The story suggested that health is outside of Brian's control.	○	○	○	○	○

Page Break

How controllable was the reason for Brian's struggle with his health?

○ Uncontrollable

○ Somewhat uncontrollable

○ Neither controllable nor uncontrollable

○ Somewhat controllable

○ Very controllable

How much do you agree with the following statements about the message?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The message is believable.	○	○	○	○	○
The message is convincing.	○	○	○	○	○
I agree overall with the message.	○	○	○	○	○
This message presents a strong argument.	○	○	○	○	○

Thinking about the message you read…

	Hardly any	Just some	A good amount	A great deal
How much do you blame Brian for his circumstances?	○	○	○	○
How much anger do you feel toward Brian?	○	○	○	○
How much pity do you feel toward Brian?	○	○	○	○
How much sympathy do you have for Brian?	○	○	○	○

- -

Page Break ———————————————————————————————

How much of the following feelings did you experience toward *Brian* after reading the message?

	None of this feeling	A little of this feeling	A moderate amount of this feeling	A lot of this feeling	A great deal of this feeling
Anger	○	○	○	○	○
Apathy	○	○	○	○	○
Empathy	○	○	○	○	○
Aggravation	○	○	○	○	○
Happiness	○	○	○	○	○
Irritation	○	○	○	○	○
Sadness	○	○	○	○	○
Intrigue	○	○	○	○	○
Annoyance	○	○	○	○	○

Page Break

How much of the following feelings did you experience toward *Brian's situation* after reading the message?

	None of this feeling	A little of this feeling	A moderate amount of this feeling	A lot of this feeling	A great deal of this feeling
Anger	○	○	○	○	○
Apathy	○	○	○	○	○
Empathy	○	○	○	○	○
Aggravation	○	○	○	○	○
Happiness	○	○	○	○	○
Irritation	○	○	○	○	○
Sadness	○	○	○	○	○
Intrigue	○	○	○	○	○
Annoyance	○	○	○	○	○

Page Break

How much do you agree or disagree with the following statements about the message?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I was touched by Brian's situation.	○	○	○	○	○
I felt upset for those who suffer from the problem described in the message.	○	○	○	○	○
When I was reading the message, I felt sad for Brian.	○	○	○	○	○
I do not understand how people could get themselves into a difficult situation like the one described.	○	○	○	○	○
The message just seemed illogical to me.	○	○	○	○	○
I am baffled by people who get into situations like the one described.	○	○	○	○	○
My current situation is similar to Brian's situation.	○	○	○	○	○

There is someone I know who's current situation is similar to Brian's situation.	○	○	○	○	○
My real self is similar to Brian and I would react in a similar way if I was in his shoes.	○	○	○	○	○

End of Block: Emotional Responses

Start of Block: Importance of Addressing Disparities

Now we are going to move on to asking you some general questions about our government's role in the health of Ontarians.

Page Break

How much do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
It is important for governments to find ways of narrowing differences in health between the rich and the poor.	○	○	○	○	○
People should take responsibility for their own health and not expect the government to do it for them.	○	○	○	○	○
Government should work to close the health gap between the rich and poor.	○	○	○	○	○
Government should work to close the health gap between the rich and poor by raising taxes.	○	○	○	○	○
Government should work to close the health gap between the rich and the poor even by shifting resources away from the better off to the less well off.	○	○	○	○	○

If the government were willing and able to spend whatever was necessary, the government could eliminate the health gap between the rich and the poor.

| | ○ | ○ | ○ | ○ | ○ |

On a scale from 0 to 10, where 0 means an issue is not a problem at all and 10 means it is a very big problem, how big a problem do you think the health gap between the rich and poor is in Ontario?
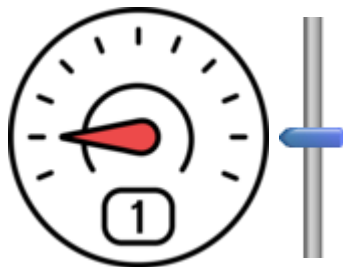
0
1
2
3
4
5
6
7
8
9
10

End of Block: Importance of Addressing Disparities

Start of Block: Possible Interventions

This next set of questions will ask you to think about possible solutions to the health gap between the rich and poor in Ontario, and which solutions you support.

Assuming limited financial resources to pay for new services, would you support transferring money from health care treatment resources to disease prevention services like health education campaigns?

○ Yes

○ No

Assuming limited financial resources to pay for new services, would you support transferring money from health care treatment resources to health-creating services like basic education and affordable housing?

○ Yes

○ No

Right now in Ontario, people are not taxed on their private health and dental insurance. This is not the case in other provinces. Do you think the government should tax these private health benefits to fund programs for the poor?

○ Yes

○ No

Page Break ―――――――――――――――――――――――

How much of your after tax income are you willing to forego to fund programs for those that are less well off?

○ 0%

○

○ 1 - 5%

○ 5% - 10%

○ >10%

If health does differ between the rich and the poor, what would you support to address this difference?

	Yes	No
Employment equity programs (these programs work to increase representation in the workplace of women, people with disabilities, Indigenous people, and visible minorities)	○	○
Increasing minimum wage	○	○
Increasing union membership for workers	○	○
Increasing pension amounts to seniors	○	○
Increasing welfare amounts to above poverty level	○	○
Increasing welfare amounts to above poverty level for parents with children	○	○
Creating work-earning supplements for welfare recipients (i.e., supplements for low-income families and individuals who are already in the work force)	○	○
Strengthening early intervention programs for infants	○	○
Creating more subsidized daycares and pre-schools	○	○
Increasing funding for education	○	○
Creating more after-school or after-work literacy programs	○	○
Providing more subsidized trades training for adults	○	○
Providing more health care treatment programs	○	○

Providing more health prevention programs (e.g., cancer screening programs)	○	○
Providing more health services in schools	○	○
More subsidized quality housing	○	○
More subsidized quality housing for parents with children	○	○
More subsidized transit	○	○
More subsidized recreation	○	○
More subsidized nutritious food	○	○
More subsidized nutritious food for children	○	○
Creating more community groups and social support networks	○	○
Encouraging more volunteers in the community	○	○
Giving those that are less well off more ability to influence government decisions	○	○

End of Block: Possible Interventions

Start of Block: Fairness

Please indicate whether you agree with the following statements.

	Yes	No
Everyone in Ontario should have the same opportunity to live a long and health life	○	○
Everyone in Ontario does have the same opportunity to live a long and health life	○	○
Ontario society needs major changes in order to make things more equal among its citizens	○	○

In this final section, we are going to ask some questions about you.

- -

What is your age?

○ 18 - 24 years old

○ 25 - 34 years old

○ 35 - 44 years old

○ 45 - 54 years old

○ 55 - 64 years old

○ 65 or older years old

- -

How do you describe your gender identity?

○ Male

○ Female

○ Transgender male

○ Transgender female

○ Non-binary

○ Gender variant/non-conforming

○ Not listed

○ Prefer not to say

Page Break

Please indicate your area of residence.

○ Urban

○ Rural

Page Break

What is your total annual household income?

- ○ <$10,000

- ○ $20,000 -

- ○ $40,000 -

- ○ $60,000 -

- ○ $80,000 -

- ○ >$100,000

Page Break ─────────────────────────────

Please indicate your highest level of education

- ○ Some high school

- ○ Graduated high school

- ○ Some college or university

- ○ Graduated college or university

- ○ Some graduate school

- ○ Graduated graduate school

Page Break ─────────────────────────────

What is your current employment status?

○ Full time

○ Part time

○ Unemployed

○ Retired

○ Student

○ Other

- -

Page Break —————————————————————————————————

How many children currently live with you in your home?

○ 0

○ 1

○ 2

○ 3

○ 4

○ 5+

- -

Page Break —————————————————————————————————

Were you born in Canada?

○ Yes, I was born in Canada.

○ No, I was born in a country other than Canada.

- -

Which country were you born in?

_____

- -

In what year did you come to Canada?

_____

- -

What is your current Canadian citizenship status?

○ Canadian citizen

○ Permanent resident/landed immigrant

○ Other

- -

Page Break ———————————————————————————————

Which language do you speak most often at home?

_____

- -

Page Break ———————————————————————————————

To which ethnic or cultural groups did your ancestors belong? You may select more than one option.

- [ ] Canadian

- [ ] French

- [ ] English

- [ ] German

- [ ] Scottish

- [ ] Irish

- [ ] Italian

- [ ] Ukranian

- [ ] Dutch (Netherlands)

- [ ] Chinese

- [ ] Jewish

- [ ] Polish

- [ ] Portuguese

- [ ] South Asian (e.g., East Indian, Pakistani, Sri Lankan)

- [ ] Norwegian

☐ Welsh

☐ Swedish

☐ First Nations

☐ Métis

☐ Inuit

☐ Other (specify) _____

- -

Page Break ————————————————————————————————————

If the provincial election were held today, what party do you think you would you vote for?

○ PC

○ Liberal

○ NDP

○ Other

End of Block: Demographics

Start of Block: Email

Would you like to receive information about the results of this study? If so, please provide an email address below and we will send you a summary of the findings by October 1, 2019. Your email address will be destroyed as soon as the results are sent to you.

_____

End of Block: Email

Appendix C: Messages 1 – 4

There are four different message types that this study compared. Two have a "Plight of the poor" narrative framework and the other two have a "Privilege of the rich" narrative framework based upon findings from research on Ontario public opinion of social determinants of health by Kirst and colleagues. Each message theme reflects one or two of the statements from this previous work (Lofters et al., 2014). Additionally, there is a plethora of health research to show that placing the burden of health on an individual or on society alone is not always well-received by the public (Gollust et al., 2014; Lundell et al., 2013; Gollust et al., 2009). To test this, one of the "Plight of the poor" narratives and one of the "Privilege of the rich" narratives will frame responsibly for health as a social responsibility, while the other two narratives will frame responsibility for health as a hybrid responsibility between an individual and society. Therefore, the four message types are:

1. Plight of the poor, social responsibility frame

2. Plight of the poor, hybrid responsibility frame

3. Privilege of the rich, social responsibility frame

4. Privilege of the rich, hybrid responsibility frame

Message 1: plight of the poor, social frame (third person, male)

Message Theme: If you work in a poorly paying job, the insecurity can have a bad effect on your health

Details

- Male (Brian), 35, Caucasian → public considers able-bodied males to be more individually responsible for their own health (Appelbaum, 2001); studies show that including a racial disparities frame can make a message more difficult to receive health (Friedman et al., 2014; Lundell, Niederdeppe, & Clarke, 2013; Niederdeppe, Bu, Borah, Kindig, & Robert, 2008)
- Education → high school diploma only
- Job insecurity → down to part-time shifts at factory; factory is downsizing
- Low income (the most commonly mentioned SDOH in Canadian media in the past two years, determined through our media analysis)
- Experiences food insecurity
- Health issues = he has type 2 diabetes (this was mentioned at least twice in the media analysis…), in the hybrid frames he also smokes

Brian is a 35 year-old Caucasian male who lives and works in Ontario, Canada. He has a high school diploma but never felt as though post-secondary school was an option for him, as his parents did not have the money to pay for him to go and his grades were not high enough for him to receive a scholarship. He got a job at a local factory right after graduating high school where he enjoyed working full-time for almost fifteen years. However, two years ago the factory underwent major downsizing and Brian's hours were cut back to part-time. Brian's job insecurity has taken a toll on this health, and he has developed type-2 diabetes since his hours were cut. Brian has recently moved to a smaller apartment with a roommate because he could no longer afford to live alone. The apartment is in a different neighbourhood where there are few amenities. The nearest grocery store is a 25 minute bus ride away. He had to sell his car, and now relies on public transit to get around. He frequents fast food restaurants because they are cheap and walking distance from his apartment. He does not feel like he has enough energy to exercise due to his increased stress levels and he can no longer afford his gym membership. "My doctor told me that I need to exercise and eat differently in order to help my diabetes. But it's just not easy for me to do. Since my hours were cut back, I don't have money to buy good food, or energy to exercise. I'm trying to stay positive but most days I feel like I'm fighting an uphill battle." - Brian

Brian wishes that he could get another job, but he does not have the money to move to where there is more work and he does not have enough experience on his resume to work anywhere other than the factory. He would like to get some additional training so that he could work somewhere else but he feels overwhelmed and emotionally drained by the prospect of changing careers. Currently, only half of working age Canadians have had the same full-time job for six months or more, leaving the other half of Canadians in positions like Brian's. Brian feels stuck and as though his health is out of his control.

Message 2: plight of the poor, hybrid frame (3ʳᵈ person)

Message theme: (1) If you work in a poorly paying job, the insecurity can have a bad effect on your health AND (2) The poor smoke and drink more to help them cope with the stress and anxiety in their lives; that is why they have poor health

Brian is a 35-year old Caucasian male who lives and works in Ontario, Canada. He has a high school diploma but he never went to post-secondary school; his grades were not high enough for him to receive a scholarship and his parents could not afford to help him pay for tuition. He got a job at a local factory right after graduating high school where he enjoyed working full-time for almost fifteen years. However, 2 years ago the factory underwent major downsizing and Brain's hours were cut back to part-time. Brian's job insecurity has taken a toll on this health, and he has developed type-2 diabetes since his hours were cut. He has also started smoking again. He knows it is unhealthy and expensive but it calms down the anxiety he feels when he thinks about his finances and future.

Brian has recently had to move to a smaller apartment with a roommate because he could no longer afford to live alone. The apartment is in a different neighbourhood where there are few amenities and the nearest grocery store is a 25 minute bus ride away. He sold his car for the money and now relies on public transit to get around. He chooses to frequent fast food restaurants because they are cheap and walking distance from his apartment. He does not exercise because he can no longer afford his gym membership.

Brian wishes that he could have full-time hours again but he does not have the money to move to where there is more work and he does not have enough experience on his resume to work anywhere other than the factory. Currently, only half of working age Canadians have had the same full-time job for six months or more, leaving the other half of Canadians in positions like Brian's. Brian's job insecurity, smoking, lack of exercise, and food choices are having a direct effect on his health. He feels as though he does not know how to gain control of his health again.

"My doctor told me that I need to exercise and eat differently in order to help my diabetes, and I know that I should stop smoking. But it's just not easy for me to do. Since my hours were cut back, I don't have money to buy good food, and I never feel like exercising. I'm trying to stay positive but most days I feel like I'm fighting an uphill battle." – Brian

Message 3: Privilege of the rich, social frame

Message theme: The rich are healthier because they have money to buy things that make them healthy.

Brian is a 35-year old Caucasian male who lives and works in Ontario, Canada. He has a high school diploma but never felt as though college or university were an option for him, because his parents did not have the money to pay for him to go and his grades were not high enough for him to receive a scholarship. He got a job at a local factory right after graduating high school where he enjoyed working full-time for almost fifteen years. On the other hand, two years ago Brian's factory underwent major downsizing and his hours were cut back to part-time. Brian's job security has taken a toll on this health, and he has developed type-2 diabetes since his hours were cut.

Brian has recently moved to a smaller apartment with a roommate because he could no longer afford to live alone. The apartment is in a different neighbourhood where there are few amenities. The nearest grocery store is a 25 minute bus ride away. He had to sell his car, and now relies on public transit to get around. But, he still gets out to visit his friend Pat from high school at least once a month. Pat grew up in a well-to-do family and his parents were able to pay for him to go to university. Pat's degree allowed him to get a job at a bank where he now makes good money. Every time they are together, Pat tells Brian that he needs to start taking better care of himself. Pat goes to the gym several times a week, is very careful about what he eats, and looks and feels very healthy. Brian is too embarrassed to explain to Pat that he cannot afford a gym membership or healthy food from the grocery store. After these visits, Brian cannot help but feel jealous of Pat, and feels that Pat's wealth puts him at a greater advantage because he has the money to buy things that make him healthy.

Researchers have found that Canadian men living in the wealthiest 20% of neighbourhoods live an average of four years longer than men living in the poorest 20% of neighbourhoods. Brian wishes that he could get another job, but he does not have the money to move to where there is more work and he does not have enough experience on his resume to work anywhere other than the factory. He would like to get some additional training so that he could work somewhere else but he feels overwhelmed and emotionally drained by the prospect of changing careers. Brian's job insecurity is having a direct effect on his health. He feels stuck and as though his health is out of his control:

"Pat tells me that I need to exercise and eat differently in order to help my diabetes. But it's just not easy for me to do. Since my hours were cut back, I don't have money to buy good food, or energy to exercise. I'm trying to stay positive but most days I feel like I'm fighting an uphill battle." – Brian

Message 4: Privilege of the rich, hybrid frame

Message theme: (1) The rich are healthier because they have money to buy things that make them healthy AND (2) The poor smoke and drink more to help them cope with the stress and anxiety in their lives; that is why they have poor health

      Brian is a 35-year old Caucasian male who lives and works in Ontario, Canada. He has a high school diploma but never went to college or university; his grades were not high enough for him to receive a scholarship and his parents could not afford to help him pay for tuition. He got a job at a local factory right after graduating high school where he enjoyed working full-time for almost fifteen years. Two years ago Brian's factory underwent major downsizing and his hours were cut back to part-time. Brian's job security has taken a toll on this health and he has developed type-2 diabetes since his hours were cut. He has also started smoking again. He knows it is unhealthy but it calms down the anxiety he feels when he thinks about his finances and future.

    Brian has recently moved to a smaller apartment with a roommate because he could no longer afford to live alone. The apartment is in a different neighbourhood where there are few amenities. The nearest grocery store is a 25 minute bus ride away. He sold his car and now relies on public transit to get around. He still gets out to visit his friend Pat at least once a month. Brian's friend Pat from high school went to university and now makes good money working for a bank. Every time they are together, Pat tells Brian that he needs to start taking better care of himself. Pat goes to the gym several times a week, is very careful about what he eats, and never smokes. Brian is too embarrassed to explain to Pat that he chooses to spend money on cigarettes to cope with stress but cannot afford a gym membership or healthy food. After these visits, Brian can't help but feel jealous of Pat, and feels that Pat's wealth puts him at a greater advantage because he has the money to buy things that make him healthy.

    Researchers have found that Canadian men living in the wealthiest 20% of neighbourhoods live an average of four years longer than men living in the poorest 20% of neighbourhoods. Brian wishes that he could get another job, but he does not have the money to move to where there is more work and he does not have enough experience on his resume to work anywhere other than the factory. Brian's job insecurity, smoking, lack of exercise, and food choices are having a direct effect on his health. He feels stuck and as though his health is out of his control.

"Pat tells me that I need to exercise and eat differently in order to help my diabetes, and I know that I should stop smoking. But it's just not easy for me to do. Since my hours were cut back I don't have time to get to the grocery store, or money to buy good food, and I never feel like exercising. I'm trying to stay positive but most days I feel like I'm fighting an uphill battle." – Brian

Appendix D: Focus Group Guide

1. Is the message that you read believable?
    a. Does this seem like something that could happen to a person in Ontario?
    b. Do you know anyone in a similar situation?

2. Is the message that you read relatable (Do you empathise with the character(s)?)
    a. Could you put yourself into Brian's shoes? Would you react in a similar way to his circumstances?
    b. How did you feel about Brian's character?

3. Do the facts (e.g., Currently, only half of working aged Canadians have held the same full-time job for 6 months or more) add any value to the narrative?
    a. Did they make Brian's circumstances more believable or more relatable?

4. Did you have any general comments or questions that we have not touched on before we move on to the survey?
    a. E.g., typos, suggestions for improvement, items that worked well, etc.

A. <u>Survey</u>

1. Was the purpose of the survey clear?

2. Was the length of the survey appropriate?
    a. Approximately how long did it take you to read the message and answer the survey questions?
    b. Did this feel too long?

3. Did the order and flow of the items make sense?
    a. Did anything feel out of place or confusing?

4. Did any of the items seem unclear?
    a. Were there items that you skipped? Why?
    b. Was there language that was confusing or unclear?

5. Did you have any general comments or questions that we have not touched on before we end the focus group?
    a. E.g., typos, suggestions for improvement, items that worked well, etc.