Pandemic Perceptions in Canada and Brazil:

Understanding the Diffusion of Information about

COVID-19 on Social Media

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Overview

Abstract

Not only did the COVID-19 pandemic not only take millions of lives and devastated countless communities, it dominated the news cycle, revealing the overwhelming importance of information and communication strategies. This research investigates how social media's COVID-19's information diffusion influences different people's perceptions of it in Brazil and Canada. This research is important because the COVID-19 pandemic has impacted people worldwide and therefore, it is relevant to better understand the effects of the diffusion of COVID-19 information on different communities. This study applied the theories of third-person effect, institutional trust, and interpersonal trust and their implications within the context of the diffusion of COVID-19 information. Four hypotheses were developed: (1) people will perceive that others are more susceptible to social media information than themselves, (2) greater exposure to COVID-19 information via social media will increase perceptions of others susceptibility, (3) trust in provincial government will be correlated with greater trust in COVID-19 public health message, and (4) trust in government will be negatively correlated with greater trust in 'questionable COVID-19 messages.' Collected data supported H2 and H3 only. Overall, considering limitations in the collected sample size, these results are inconclusive and thus require further investigation.

Literature Review

Social Media and COVID-19 Misinformation

"As the COVID-19 crisis raged across the world, people clamored for information that would help them better understand how to reduce the risks. [...] Any search for information quickly turned up vague or conflicting information. People had to decide whichsources of information they trust to guide their behavior when their life may beat stake." (Robinson et al., 2021, p. 8). The countless unknowns about COVID-19 were the drivers for the diffusion of wrongful and inaccurate information within social media, leading the World Health Organization (WHO) to coin the term 'infodemic' to illustrate the phenomenon of the rampant spread of misinformation during a disease outbreak (Cinelli et. al, 2020; World Health Organization, 2021). In the pressing context of an unknown virus spreading into a worldwide pandemic, the following research question was developed for this study:

RQ: How did social media's diffusion of information about COVID-19 influence the public's perception of this pandemic in Brazil and Canada?

According to Valenzuela et. al (2022b), while the phenomenon of misinformation predates the advent of digital media technologies, like social media, and even the COVID-19 pandemic itself (van der Linden, 2022, p. 460), "there is no agreed upon definition of misinformation" (p. 3). Instead, the concept of misinformation is often used as an "umbrella term" (Wittenberg et al., 2020, as cited by Valenzuela et al., 2022b), encompassing instances in which "innacurate, false, or misleading content is spead accidentally" (p. 3). Being mindful of the ongoing epistemological nature of misinformation is key when studying it since diffusion of

information and, consequently, misinformation depends on a variety of aspects, including its contexts, its contents, its contexts, and the communities in which they circulate.

Moreover, in a different study about misinformation in Chile, Valenzuela et al. (2022a) states that "studies on the consequences of misinformation [...] are surprisingly rare [...] since we know little about the effects of exposure to misinformation on attitudes and behaviors." (p. 354). Valenzuela et al (2022b) also notes that "not all misinformation leads to misperceptions and not all misperceptions are caused by misinformation (Thorson, Shebel, and Southewell, 2018). In other words, misinformation is not only caused from faulty reproductions of information, but also from inaccurate interpretations. "Because misperceptions relate to individual's beliefs, they are influenced by a variety of other factors," including "partisan identity and cognitive skills (Flynn, Nyhan, and Reifler 2017; Garett, Weeks, and Neo, 2016)." Therefore, these multitude of factors are considered in this study, including the following: trust in government and health agencies, interpersonal trust with other social media users, and their personal beliefs. In other words, because the phenomenon of misinformation is dynamic and, thus, challenging to research, its variability poses innate limitations that, as researchers, we aim to address these through the aforementioned variables in this study's theoretical framework and methodology.

One of the ways we address is through applying the Mediated Skewed Diffusion of Issues Information (MSDII) theory. The MSDII theory aims to understand "how the diffusion of information about societal issues through digital communication channels happens." (McEwan et. al, 2018, p. 1). Focusing on how information circulates on social media is important because it "influences how people are exposed to information and affects how information is diffused through interpersonal networks connected via technology" (McEwan et. al, 2018, p. 2). The MSDII framework considers "the roles of individuals' ego involvement, the media environment,

and interpersonal processes" when disseminating information (McEwan et. al, 2018). This three-fold observation directly connects to the purposes of this present study since it helps us, as investigators, to become more aware of the other factors shaping people's interactions with information and their perceptions of it through different channels. Each of these will be further elaborated below.

Ego-involvement

Cho and Boster (2005) describe that "Involvement has been one of the pivotal constructs in communication research." (p. 235). In the context of ego-involvement, "Ego refers to one's view of self or self-concept (p. 237). Consequently, ego-involvement as an individual's level of personal investment likely skewing and, therefore, clouding their abilities to "accurately assess the quality" of the information they encounter (McEwan et al., 2018, p. 2). In other words, people tend to better evaluate the quality of arguments they disagree with and, comparatively, less so when evaluating arguments they agreed with (Cathcart, 1955, as cited by McEwan et al., 2018, p. 4). Whether through traditional news broadcasts, print outlets, or social media, ego-involvement therefore measures the degree of a person's bias towards a specific argument according to their personal level of investment on said issues, where high ego-involvement consists of someone considering "their stance on an issues [...] a key pert of their identity." (Sherif and Cantril, 1947, as cited by McEwan et al., 2018).

Media Environment

Over the past decade, the "modern media environment" has been transformed, becoming "incredibily social" with the advent of social media platforms. (McEwan et al., 2018, p. 1). However, McEwan et al. (2018) further note that "scholarly theoretical perspectives lag behind

lay theories regarding news diffusion making it difficult to fully articulate and understand the processes driving dissemination of information and persuasion across networks and media contexts." The lacking of additional variables and their implications in the study of information dissemination is affecting the changing conditions to establish and preserve news credibility. For these reasons, this literature review addresses the role of third-person effect and both institutional and interpersonal trust.

Third-Person Effect

Third-person effect (TPE) or third-person perception (TPP) is a communications theory which speculates that while "people tend to underestimate the effects of media messages on themselves, people overestimate the effects of media messages on the attitudes of others," (Yang and Tian, 2021, p.2), resulting in its name stemming from the understanding that those most affected are not 'me' or 'you,' but 'them' — and this third category is known as the third persons (Davison, 1983, p. 3).

One noteworthy observation within the overall theory of TPE/TPP include Lui and Huang's (2020) distinction between the effects of influence of communication messages on other people's perceptions, noting that "the perception discrepancy is greater between one's self and distant others than between one's self and close others." (p. 792). In other words, within the context of the COVID-19 pandemic, people were more likely to believe those acquaintances were more susceptible be influenced with communication messages than those close to them.

Different Dimensions of Trust

Trust in the Provincial Government and Provincial Health Agencies

Robinson et al. (2021) observes that understanding "the degree to which people trust an administrative agency" begins with "a careful consideration of trust as a concept." (p. 10). According to Robinson et al. (2021), this form of trust manifests as "an attitude a person has" instead of "a specific behavior." (p. 10). With this general grasp of trust as a concept, "attitude may be linked to behaviors, but these behaviors are typically left out of the investigations of trust themselves." (p. 10). Because of the exclusion of context-specific attitudes and behaviors when investigating the implications of trust, this study addresses this gap within its survey's variables and measures. It is important to note that these attitudes and behaviors exist within a relationship (Robinson et al, 2021, p. 10). This approach considers the trustor, the trustee, and the stakes of trust (Coleman 1994, as cited by Robinson et al., 2021). Therefore, when this study considers both the roles of provincial governments and public health agencies, it is "assessing the activities typically carried out by that agency."

Interpersonal Trust of People on Social Media

Valenzuela et al. (2022) notes for why social media could unwillingly foster misinformation includes how "social media are a central gateway for news." These new digital media technologies have innate affordances shaping "the way information is diffused." In fact, Weeks and Zúñiga (2021) explain (as cited in Valenzuela et al., 2022a), "The very 'socialness' of social media can make individuals less likely to verify online content" (p. 4). This connects to this study's pursuit in also investigating how the variable of trust influences people's perception of the COVID-19 pandemic depending on who sends os posts the information they receive via social media platforms. McEwan et al. (2018) conclude, therefore, that "an array of *relational* and *personal* variables influencing the mediated diffusion of information contribute to the phenomenon of online information diffusion." (p. 1).

The availability of different social media platforms offer distinct digital affordances for their users to share content and connect alike. While Instagram emphasizes personalized visual content, messaging applications like Facebook Messenger and WhatsApp "allow users to interact in a more intimate, private setting and are tailor-made for communication with so-called strong ties." (Valenzuela et al., 2022a, p. 5) The innate social features of digital media technologies are crucial to understanding how there seems to be a shift in the perception of credible information sharing when its based in the nuanced intimacy of interpersonal relationships. Nonetheless, it is important to differentiate the aspects surrounding interpersonal and institutional/political trust. "Whereas the foundational model of interpersonal trust involves a relationship between two specific agents and [...] an assessment of average trustworthiness in a group, the literature on political trust investigates the relationship between a specific individual (the trustor) and a regime, institution, or organization as the trustee." (Robinson et al., 2021, p. 13).

Brazil and Canada

While both Brazil and Canada are in the American continent, these countries also have relevant and salient differences in their state structures and healthcare systems. While Canada and Brazil have a combination of publicly funded and privately covered healthcare providers (Tikkanen et. al, 2020, *Brazil;* Tikkanen et. al, 2020, *Canada*), these countries vary in their government structure from federal government leadership style and COVID-19-related measures, such as lockdowns and stay-at-home orders. Overall, these countries were selected to contextualize this research within two different countries' COVID-related realities, adding an international comparison dimension to the investigation.

Hypotheses

Based on the previous findings from the literature, the four developed hypotheses are:

H1: People will perceive that others are more susceptible to social media information than themselves.

H2: Greater exposure to COVID-19 information via social media will increase perceptions of others susceptibility.

H3: Trust in provincial government will be correlated with greater trust in COVID-19 public health message.

H4: Trust in government will be negatively correlated with greater trust in 'questionable COVID-19 messages.'

Methodology

Participants

Participants were recruited through interpersonal social media messaging, making this sampling strategy a a convenience sample. As the study's recruitment messages also encouraged potential participants to share the message and survey link with other within their interpersonal networks, this initial convenience sample then transformed into a larger, snowball effect sampling strategy. After over two weeks of data collection — from July 7th to July 24th — 112 participants were recruited: 68 respondents for the Brazilian sample and 44 respondents for the Canadian sample. Demographic details for the participants' sample distribution show that most of the participants were Latin American and Southeast Asian, women, between the ages of 18 and 30 years-old, high school and bachelor graduates (see Appendix 4).

Measures

We measured ten variables in total. Some were not taken from any scholarly work in particular, such as those measuring the most used social media platform and people's radio and television consumption. Those using an existing measure and its adaptations are listed.

COVID-related health behaviors (α = .691) was measured on a five-point Likert scale originally developed by Carpenter and McEwan (2018). The short version of this scale was validated including items (1), (2), (4), and (5). Ego-involvement (α = .734) was measured on a five-point Likert scale originally developed by Cho and Boster (2005). The seven items used were validated by Carpenter (2018) and includes item (3) as a recoded item.

Belief in pandemic-related conspiracies (α = .979) was measured with 48 items, each rated on a five-point Likert scale originally developed by Freeman et al. (2022). The frequency of viewing these pandemic-related conspiracy statements (α = .988) was adapted from Freeman et al. (2022) and, therefore, also measured using 48 items, each rated on a five-point Likert scale.

Trust in the provincial government (α = .917) was measured with Bronfman, Arévalo, and Cifuentes' (2012) scale. Trust in the provincial health agencies (α = .939) was adapted from Bronfman, Arévalo, and Cifuentes' (2012) scale. Interpersonal trust on social media was measured with Couch, Adams, and Jones' (1996) scale. The short version of the scale includes items (1), (3), and (5) and was reliable (α = .7).

News media perceptions (α = .911) was measured using Meyer's (1988) scale. Dichtomic items pertaining to different categories (unfair/fair), (unbiased/biased), (doesn't tell the whole story/tells the whole story), (inaccurate/accurate), (cannot be trusted/can be trusted).

Survey Design and Translations

To test the aforementioned hypotheses, these measures were then translated into Qualtrics for the survey layout. These hypotheses were then cross-referenced with their respective variables and measurement scales (see Appendix 1). The Qualtrics survey was originally written in English and then translated into Brazilian Portuguese. The approach for this translation was to, first, insert each section with a group of variable items into Google Translate for an automized yet rapid translation. Afterwards, while cross-referencing the translated Brazilian Portuguese items with the original English ones, I read through each item attentively, correcting major grammar and syntax mistakes.

Then, another Brazilian scholar — his social science research experience, fluency in the Portuguese language, and outsider perspective in this particular study — offered valuable help when working through the translated version of the items, backtranslating each section to ensure Portuguese grammar and syntax in the translated version of the survey were coherent. After this initial backtranslation, another external Brazilian scholar and Portuguese native speaker was consulted to aid in cleaning up the translation as an additional step to this backtranslating process. Once all the outstanding language and survey design issues were addressed and corrected, I reviewed the Brazilian Portuguese version of survey three more times individually before finally sending it out for recruitment.

Prior to completing the online Qualtrics survey, participants were required to provide informed consent (see Appendix 2). Given the informed consent's disclaimer text, participants were also allowed to not answer questions if they so chose.

Recruitment Process

Participants were first recruited through publications on social media platforms — including Facebook, Twitter, and Instagram — and groupchat messaging on WhatsApp. Scripted recruitment messages were first sent out on July 7th. Those reached through this process then were encouraged to share the survey within their interpersonal networks, reproducing what resembles snowball sampling. However, after a week, the participants' response rate within my personal network was still low.

To address and adjust the recruitment strategy, I decided to leverage the "broadcasting messaging" feature on WhatsApp, creating two distincts broadcast messaging lists: one for the potential Canadian participants and another for the potential Brazilian participants. The benefit from using WhatsApp's broadcast messaging feature allowed me to group people in my network while each participant still receiving the recruitment message individually (see Appendix 3). This additional personal touch incorporated the innate socialness mentioned in the literature review, proving effective in increasing participants' response rate.

Data Analysis

After data collection, statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) software. The analysis conducted comprised of calculating the means and standard deviations for each variable, running independent paired-sample t-tests, and assessing the bivariate correlation for each hypothesis using Pearson's r. Results are found in the tables below.

General Descriptive Statistics

See Appendix 6 through 9 for graphs comparing the mean scores of variables across the Brazilian and Canadian samples.

Table 1

Differences between Brazilians and Canadians on COVID-related health behaviors

	Brazilians *(M, SD)*	Canadians *(M, SD)*	*t*
Wear a mask in public	4.91, .514	4.71, .774	1.45
Tried to social distance	4.72, .781	4.45, .772	1.76
Attempted to engage in more outdoor than indoor activities	4.25, 1.119	3.83, .961	1.97
Got vaccinated when vaccines were made available	4.99, .122	4.62, .731	3.22 *
Received a COVID-19 booster	4.97, .246	3.95, 1.58	4.15 **
Tested COVID-19 before traveling	4.52, .862	3.32, 1.71	- 4.804 **
Tested for COVID-19 before meeting up with large groups	3.12, 1.644	2.83, 1.27	1.03

Note: all p-values above are from two-sided independent t-tests
$p < .05$ *, $p < .01$ **, $p < .001$ ***

Table 2

Differences between Brazilians and Canadians on self ego-involvement

	Brazilians *(M, SD*)	Canadians *(M, SD)*	*t*
The values that are most important to me are what determine my stand on this issue	4.38, .968	3.88, .861	2.749 **
Knowing my position on this issue is central to understanding the kind of person I am	4.11, SD = 1.156	3.74, SD = .989	1.766 ***
My position on this issue has little to do with my beliefs about how life should be lived	2.72, 1.596	2.69, 1.115	.124
My position on this issue is based on the values with which I try to conduct my life	4.52, .812	3.95, .795	3.596 ***
The arguments for or against this issue are relevant to the core principles that guide my life	3.92, 1.097	3.79, .871	.7

My beliefs about how I should live my life determine my position on this issue	4.09, 1.109	3.81, .862	1.480
My position on this issue reflects who I am	4.09, 1.208	3.36, 1.206	3.077 *

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

Table 3

Differences between Brazilians and Canadians on social media use

	Brazilians (M, SD)	Canadians (M, SD)	*t*
Facebook	2.84, 1.130	2.43, 1.172	1.81 ***
Twitter	1.84, 1.211	2.55, 1.211	-2.487 ***
Telegram	1.61, .817	1.17, .581	3.26
WhatsApp	4.81, .560	3.74, 1.308	5.030 ***

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

Table 4

Differences between Brazilians and Canadians on believing pandemic-related conspiracies

	Brazilians *(M, SD)*	Canadians *(M, SD)*	*t*
I'm skeptical about the official explanation about the cause of the coronavirus.	2.49, 1.49	2.76, 1.26	-.957
The virus is manmade.	1.78, 1.136	2.17, 1.022	-1.787 *
The government is misleading the public about the cause of the virus.	2.43, 1.466	2.37, 1.067	.268
I don't trust the information from scientific experts about the virus.	1.83, 1.392	1.68, 1.035	.608
The virus is produced by powerful organizations (e.g. government, military).	1.68, 1.127	1.88, 1.005	-.910
The virus was introduced to reduce the size of the global population.	1.48, .911	1.73, 1.001	-1.270
The virus was introduced by one nation to destabilize others.	1.75, 1.001	1.76, .969	-.028
The virus was introduced by a group of powerful people to gain control.	1.68, 1.112	1.71, .981	-.114
COVID-19 was introduced by governments to gain political control.	1.63, 1.041	1.76, .994	-.598

Coronavirus is a bioweapon developed by China to destroy the West.	1.70, 1.109	1.68, .907	.085
Coronavirus was developed by a group of powerful people to make money.	1.63, 1.008	1.76, 1.044	-.589
Coronavirus measures will control every aspect of our lives.	1.93, 1.244	2.27, 1.265	-1.315
The mainstream media is deliberately feeding us misinformation about the virus and lockdown.	2.25, 1.445	2.41, 1.245	-.593
COVID-19 exists to impose mass surveillance.	1.68, 1.127	1.59, .894	.486
Coronavirus was introduced by global companies to take control.	1.42, .907	1.71, .981	-1.507
COVID-19 measures are intended to destabilize the nation for political gain.	1.83, 1.291	2.02, 1.037	-.822
COVID-19 measures are intended to destabilize the economy for financial gain.	1.77, 1.125	1.88, 1.029	-.514
The virus is a front to implement measures to destroy our privacy.	1.32, .770	1.68, .850	-2.09 *
Coronavirus was created to force everyone to get vaccinated.	1.32, .813	1.51, .952	-1.075
Lockdown is a way to terrify, isolate, and demoralize society.	1.73, 1.119	1.71, 1.124	-.108
Politicians have faked having coronavirus.	1.72, 1.105	2.40, 1.128	-2.940 **
The coronavirus vaccine will contain microchips to control people.	1.24, .582	1.14, .544	-.916
Celebrities are being paid to say they have coronavirus.	1.38, .813	1.66, .911	-1.570
Coronavirus is a plot by activists to stop climate change.	1.28, .804	1.32, .650	-.232
Antibody testing is a plot to harvest our DNA.	1.22, .618	1.24, .582	-.194
The elite have created the virus in order to establish a one-world government.	1.49, .898	1.25, .728	-1.409
The vaccine will be used to carry out mass sterilization.	1.44, .808	1.22, .618	-1.462

Coronavirus is being used by the government to implement a police state.	1.46, .897	1.25, .604	-1.302
The virus is a biological weapon manufactured by the United States.	1.39, .666	1.29, 8.11	-.689
COVID-19 was introduced to stop immigration.	1.27, .593	1.12, .415	-1.417
Bill Gates has created the virus in order to reduce the world population.	1.15, .547	1.34, .762	-1.384
The UN and WHO have manufactured the virus to take global control.	1.17, .530	1.37, .767	-1.421
Companies are being deliberately put out of business to hide the effects of contentious political decisions.	1.32, .770	1.66, .990	-1.860 *
Big Pharma created coronavirus to profit from the vaccines.	1.37, .828	1.54, .925	-.908
Lockdown is a plot to control the rest of us.	1.41, .893	1.46, .840	-.323
The coronavirus is bait to scare the whole globe into accepting a vaccine that will introduce the 'real' deadly virus	1.40, .924	1.34, .762	.347
Coronavirus is being used by the elite to stop contentious political decisions.	1.20, .610	1.51, .898	-1.917 *
Coronavirus is a plot by globalists to destroy religion by banning gatherings.	1.47, .935	1.39, .833	.473
Coronavirus is an alien weapon to destroy humanity.	1.25, .795	1.74, .538	.046-
The virus is a scaremongering tactic to prevent contentious political decisions.	1.10, .399	1.54, .977	-2.710 **
The virus is a smokescreen for a global conspiracy that swapped the real world with a simulation.	1.22, .640	1.29, .642	-.606
Coronavirus cannot be passed from person to person.	1.22, .640	1.12, .400	.914
The virus is a hoax.	1.22, .804	1.15, .478	.550
Coronavirus is caused by 5 G and is a form of radiation poisoning transmitted through radio waves.	1.08, .381	1.17, .495	-.953

Wearing masks in public spaces does more harm than good.	1.54, .987	1.10, .354	-2.962 **
Vaccines do nothing to prevent the spread of COVID-19.	1.35, .936	2.0, 1.36	-2.660 *
The available vaccines do not reduce the severity of COVID-19.	1.40, .960	1.61, .919	-1.106
Ivermectin can cure a COVID-19 infection.	1.25, .816	1.90, 1.044	-3.361 ***

$p < .05$ *, $p < .01$ **, $p < .001$ ***

Hypotheses

Hypothesis 1

Hypothesis 1 predicted a positive correlation between the variables of belief in pandemic-related conspiracies and frequency of seeing those statements on social media since people would perceive that others are more susceptible to social media information than themselves, $t(77) = -.306$, $p = .380$. H1 was not supported since the correlation between belief in pandemic-related conspiracies and frequency of seeing those statements on social media was not statistically significant.

Hypothesis 2

Hypothesis 2 predicted that greater exposure to COVID-19 information via social media would be positively correlated with increased perceptions of others susceptibility, $r(98) = .245$, $p = .007$. H2 was supported overall since the correlation between greater exposure to COVID-19 information via social media and increased perceptions of others susceptibility was statistically significant. However, within the Brazilian sample, $r(58) = .091$, $p = .224$, the correlation was not significant while in the Canadian sample, $r(39) = .429$, $p = .004$, it was. Thus, H2 is not

supported within the Brazilian sample, but in the Canadian it is statistically significant and, therefore, supported.

Hypothesis 3

Hypothesis 3 predicted that trust in provincial government would be positively correlated with greater trust in COVID-19 public health message, $r(85) = .476$, $p < .001$. Hypothesis 3 was supported because the correlation between greater trust in provincial government and greater trust in the COVID-19 public health message from provincial health agencies was statistically significant. Within the Brazilian sample, $r(58) = .421$, $p = .002$; meanwhile, within the Canadian sample, $r(33) = .709$, $p < .001$. H3 is supported in both the Brazilian and Canadian samples since the correlation between the indicated variables is statistically significant.

Hypothesis 4

Hypothesis 4 predicted that trust in government will be negatively correlated with greater trust in "questionable COVID-19 messages," — these being COVID-related conspiracy statements — $r(85) = -.081$, $p = .228$. H4 was not supported since the correlation between greater trust in provincial government and decreased likeliness of believing questionable COVID-19 messages was not statistically significant. Within the Brazilian sample, $r(58) = .037$, $p = .397$; meanwhile, within the Canadian sample, $r(33) = -.384$, $p = .011$. While Hypothesis 4 is not supported within the Brazilian sample, it is statistically significant and, therefore, supported within the Canadian sample.

Discussion

Results offer some additional insight into the diffusion of information about COVID-19 on social media and how its circulation shaped people's perceptions of the pandemic. Nonetheless, because of the limited sample size and the self-reported nature of the data (Valenzuela et al., 2022b, p. 15) these initial results still require further investigation for more accuracy and substantial confirmation.

Brazilians present a higher use of Facebook, Telegram, and WhatsApp while Canadians demonstrate a higher use of Twitter, these comparative means are not statistical significant. Instead, they are initial indicators of these two different populations social media preferences. When comparing both samples in their individual practices and COVID-related health behaviors, Brazilians were overall more likely to adopt these specific behaviors than Canadians.

However, the one exception was that Canadians were more likely than Brazilians to get tested for COVID-19 before travel ($p < .001$). Explanations for this may include most notably the shortage in testing availability and implementation among the widespread population of Brazil (Jucá, 2020). In contrast, the results show a statistical significance in the likelihood of Brazilians being higher to receive a COVID booster shot ($p < .001$) compared to Canadians. Likewise, the results were almost statistically significant ($p = .002$) for Brazilians being more likely to have received vaccines when they were available. This distinction could be explained by Brazil's history of successful mass vaccination campaigns for past polio and rubella epidemics (Barbara, 2021), creating a collective culture that favors immunization. Therefore, while resources and administration affected availability of COVID tests and vaccines, these indicators suggest that other contextual factors influenced people's perceptions — and one of these is trust in the provincial government.

When comparing both sample means in their respective levels of trust in the provincial government, the data indicates Canadians are more likely than Brazilians to trust the government. But the mean for both samples' trust in health agencies was at least one point higher than the mean score for trust in government, with Brazilians being more likely than Canadians to trust their provincial health agencies. This was interesting becaus while the overall sample was more likely to trust the public health message than the provincial government's message, Canadians were still more likely than Brazilians to trust their local government regarding the state of the COVID-19 pandemic.

When observing the mean scores between both sample regarding people's believability of pandemic-related conspiracies, Canadians were overall more likely than Brazilians to agree/believe these statements. Yet some exceptions include the following notes listed below. The statement "I'm skeptical about the official explanation of the coronavirus" under conspiracy beliefs had the highest mean score in both samples. This means that while Canadians are more likely than Brazilians to hold this position, they are more likely to have this belief than any of the other conspiracy statement items measured.

In contrast, Brazilians are more likely than Canadians to believe that the government is misleading the public about the cause of the virus, which seems consistent with Brazilians having a lower mean score than Canadians when trusting their respective provincial governments. This can be explained by how Brazil's COVID-19 response had been shaped by the President's deniliast discourse, causing "conflicting messages" between "the President and health authorities" and "declining trust in social institutions." (Storopoli et al., 2020, p. 2).

Brazilians, however, are more likely than Canadians to believe that the coronavirus is bait to scare the whole globe into accepting a vaccine that will introduce the 'real' deadly virus,

which is odd considering that Brazilians were more likely than Canadians to receive both a COVID vaccine and booster when it became available to them. Brazilians are also more likely than Canadians to believe that coronavirus cannot be passed from person to person and to believe the virus is a hoax, despite Brazilians being more likely than Canadians to adopt COVID-related health behaviors, suggesting there is either some inconsistency with answers or unknown explanation for this pattern.

Lastly, Canadians are more likely than Brazilians to believe that wearing masks in public spaces does more harm than good — and this outcome was statistically significant ($p < .001$), that vaccines do nothing to prevent the spread of COVID-19, and to believe that the available vaccines do not reduce the severity of COVID-19, which seems consistent with the Canadian sample's likelihood to adopt COVID-related health behaviors.

Discussion of Hypotheses

Hypothesis 1

The data collected through and for this study did not support H1. Although the literature shows extensive evidence in support of third-person effect theory of communication, the data collected in this study suggests otherwise.

Hypothesis 2

Hypothesis 2 was supported within the combined data sample. However, this correlation was revealed statistically significant within the Canadian sample ($p < .005$) and not in the Brazilian sample. This results suggests that the circulation of information about COVID-19 likely differed in Canada compared Brazil.

Hypothesis 3

Hypothesis 3 was supported within the omnibus data sample and both the Canadian and Brazilian data sample separately. The literature demonstrated that institutional trust — in this case, both in the provincial government and provincial health agencies — is a dimension of the layered relationships forming the social fabric of society and, therefore, impacts how people carry themselves during a public health emergency. In other words, the data collection in this study further supports these theories of institutional trust, although not all nuances are addressed because of the context-specific details within each country.

Hypothesis 4

The data collected through and for this study did not support H4. Although the literature shows extensive evidence in support of third-person effect theory of communication, the data collected in this study suggests otherwise. Hypothesis 4 was not supported in the omnibus data sample, but it was supported within the Canadian sample.

Conclusion

This project's main goal was to obtain better insight into how COVID-19-related information was diffused and how these patterns influenced people's perceptions of and behaviors towards the pandemic in each country. The correlations initially established through the hypotheses do not imply causation, leaving many answers unanswered regarding causation between the variables. Considering that this research's methodology invited people to retrospectively perceive COVID-related misinformation statements and how they impacted their trust in institutions and their interpersonal connections, this research's key achievement was to

initiate the mapping of the complex nature of the diffusion of COVID-19 information within social media and its implications in different communities. After concluding this investigation, the project provides an inkling into the effects of third-person perception (TPP) and the overall roles that institutional and interpersonal trust play in people's perception of a societal event, but further investigation is required to bring further clarity to this phenomenon and its relevant communication theories.

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Appendix

Appendix 1 — Hypotheses, Variables, and Measurement Citations Table

Hypotheses	Variables	Citation for Measure Scale Item
H1: People will perceive that others are more susceptible to social media information than themselves.	1. Health behaviors in response to COVID-19 2. Ego-involvement	1. Carpenter and McEwan (2020) 2. Cho and Boster (2005), as cited by Carpenter (2018)
H2: Greater exposure to COVID-19 information via social media will increase perceptions of others susceptibility.	1. Pandemic-related beliefs 2. Frequency of seeing these pandemic-related beliefs on social media	1. Freeman et al. (2022) 2. Adapted from Freeman et al. (2022)
H3: Trust in provincial government will be correlated with greater trust in COVID-19 public health message.	1. Trust in provincial government 2. Trust in provincial health agencies	1. Bronfman, Arévalo, and Cifuentes (2012) 2. Adapted from Bronfman, Arévalo, and Cifuentes (2012)
H4: Trust in government will be negatively correlated with greater trust in “questionable COVID-19 messages.”	1. Trust in provincial government 2. Pandemic-related beliefs	1. Bronfman, Arévalo, and Cifuentes (2012) 2. Freeman et al. (2022)

Appendix 2 — Informed Consent Message

Intent of the Research

You are being asked to participate in a research study about people who use social media and how they react to the COVID-19 related messages they see on social media. The purpose of this research is to understand how people understand and interpret information related to COVID-19, and how that interpretation affects their perceptions and behaviors in the pandemic. Please read this form and ask any questions you may have before agreeing to be in the research. The researcher's emails are near the bottom of this consent form.

What you are being asked to do

The study is an online survey. It should take you approximately 15-20 minutes to complete the research study. If you agree to be a participant in this research, we will ask you to fill out some questions abo ut yourself. We will also be showing you some misinformation statements regarding COVID-19 from the past two year and ask you to answer some questions regarding those statements.

Risks

There is no risk beyond daily living and regular social media use in this study. We would note that you may find some of the statements that we ask to evaluate contradict your personal
opinion regarding the relevant COVID-related topics. Please know that we are interested in your
opinion and reaction regarding the statements. We are not attempting to persuade you in any
way regarding COVID-19 behaviors or perceptions.

Benefits

The benefits of participation is that you may benefit from considering your consumption of COVID-related information on social media. Society may benefit by understanding how information about COVID is perceived and shared.

Compensation

Participants completing this study will be entered into a drawing to win one of 6 Amazon gift certificates for either $50CDN (3 prizes) or 185 Brazilian Real (3 prizes). At the end of the survey there will be a link to a separate study where you can provide your name and email address to be selected for the drawing. Contact information collected for the drawing will not be linked to your survey answers. The drawing will take place in early September.

How your information will be used

The information in this research will be kept confidential. Your name will not be associated with this set of data. Research data will be stored in a secure location: The primary investigator's password protected university computer, once it has been downloaded from the online survey system. The raw data will only be made available to persons conducting the research and the research ethics board if needed to help ensure participant protection procedures. A data file with all identifiers and demographic information may be posted to scholarly data repositories. No reference will be made in publications or conference presentations that could link participants to the research.

Voluntary Participation

You do not have to perform any activity you do not want to. You do not have to answer any question you do not want to answer. Participation in this study is voluntary. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. Participating in this research does not waive your legal rights in the event of harm.

Contact Information

If there are any questions about this study or the procedures, or you experience adverse effects as a result of participating in this study, please contact:
Professor Bree McEwan
Institute of Communication, Culture, Information, and Technology
bree.mcewan@utoronto.ca
If you would like a summary report of this research upon completion, please contact Professor Bree McEwan.

This project has been reviewed and approved by the University of Toronto Research Ethics Board. Questions conc erning your rights as a participant in this research may be directed to the
Research Oversight and Compliance Office –Human Research Ethics Program at ethics.review@utoronto.ca, 416-946-3273.

Consent

I have read the above information, and I have rece ived a copy of this form (you may screenshot this page). I agree to participate in this study. Please click continue below:

Appendix 3 — Recruitment Script Messages

Facebook script:

Under the supervision of Dr. Bree McEwan, I'm doing a research study on the diffusion of COVID-19 information on social media platforms. We are looking for people to complete a 15-20 minute survey. You should be over the age of 18 and be a resident in either Canada or Brazil. If you're interested in participating, please follow this link: https://utorontosociology.ca1.qualtrics.com/jfe/form/SV_e99ZqtrHaswcqYm

Please feel free to share this survey link with others who meet the criteria to participate in this study. Thank you!

Facebook Script - Translation to Portuguese

Sob a supervisão da Dra. Bree McEwan, estou fazendo um estudo de pesquisa sobre a difusão de informação sobre a Covid-19 em plataformas de mídias sociais. Estamos procurando pessoas para participar respondendo um formulário de pesquisa que dura entre 15 a 20 minutos. Você deve ter mais de 18 anos e ser residente no Canadá ou Brasil. Se você estiver interessado em participar, siga este link: https://utorontosociology.ca1.qualtrics.com/jfe/form/SV_e99ZqtrHaswcqYm

Sinta-se a vontade para compartilhar este link do formulário de pesquisa com outras pessoas que cumpram os critérios para participar deste estudo. Obrigada!

Twitter script:

I'm doing a research study on the diffusion of COVID-19 information on social media platforms. We are looking for people to complete a 15-20 minute survey. You should be over the age of 18 and a resident in either Canada or Brazil. If you're interested in participating, please follow this link: https://utorontosociology.ca1.qualtrics.com/jfe/form/SV_e99ZqtrHaswcqYm Thank you!

Twitter Script - Translation to Portuguese

Estou fazendo um estudo de pesquisa sobre a difusão de informações sobre COVID-19 em plataformas de mídia social. Estamos procurando pessoas para participar respondendo um formulário de pesquisa que dura entre 15 a 20 minutos. Você deve ter mais de 18 anos e ser residente no Canadá ou Brasil. Caso tenha interesse em participar, acesse o link: https://utorontosociology.ca1.qualtrics.com/jfe/form/SV_e99ZqtrHaswcqYm Obrigada!

Instagram/WhatsApp Script:

Hello there! I hope this message finds you well!

I'm reaching out to you because I'm pleased to share that, under the supervision of Dr. Bree McEwan, I'm doing a research study on the diffusion of COVID-19 information and people's perceptions of COVID-19 misinformation on social media platforms. We are looking for people to complete a 15-20 minute survey, and I'm inviting you personally to participate in this opportunity. You should be over the age of 18 and a resident in either Canada or Brazil. If you're interested in participating, please follow this link: https://utorontosociology.ca1.qualtrics.com/jfe/form/SV_e99ZqtrHaswcqYm

Please feel free to forward this message and share this survey link with others who meet the criteria to participate in this study.

Thank you for your time!
Best,
Mariela

Instagram/WhatsApp Script - Translation to Portuguese

Olá! Espero que esta mensagem te encontre bem!

Estou entrando em contato com você porque tenho o prazer de compartilhar que, sob a supervisão da Dra. Bree McEwan, estou fazendo um estudo de pesquisa sobre a difusão de informações sobre a Covid-19 e as percepções das pessoas sobre a desinformação da Covid-19 nas redes sociais. Estamos procurando pessoas para participar respondendo um formulário de pesquisa que dura entre 15 a 20 minutos, e estou convidando você pessoalmente a participar desta oportunidade. Você deve ter mais de 18 anos e ser residente no Canadá ou Brasil. Se você estiver interessado em participar, siga este link:
https://utorontosociology.ca1.qualtrics.com/jfe/form/SV_e99ZqtrHaswcqYm

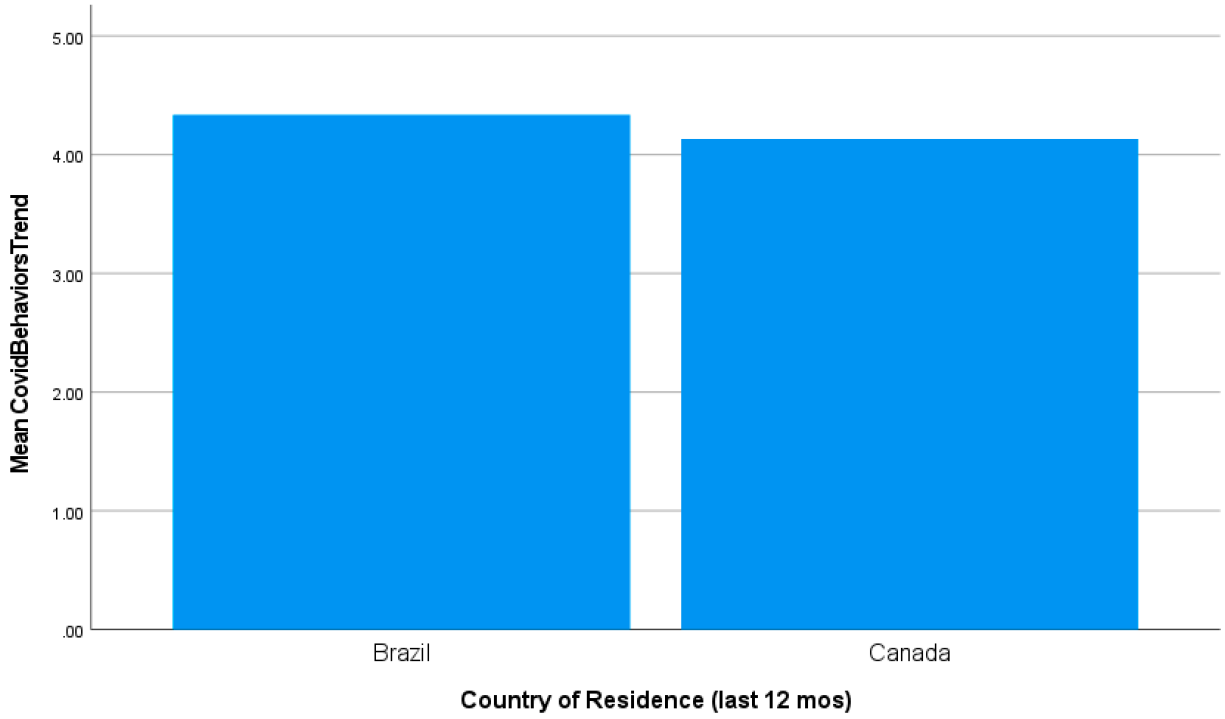
Sinta-se a vontade para encaminhar esta mensagem e compartilhar este link da pesquisa com outras pessoas que atendam aos critérios para participar deste estudo.

Obrigado pelo seu tempo!
Atenciosamente,
Mariela

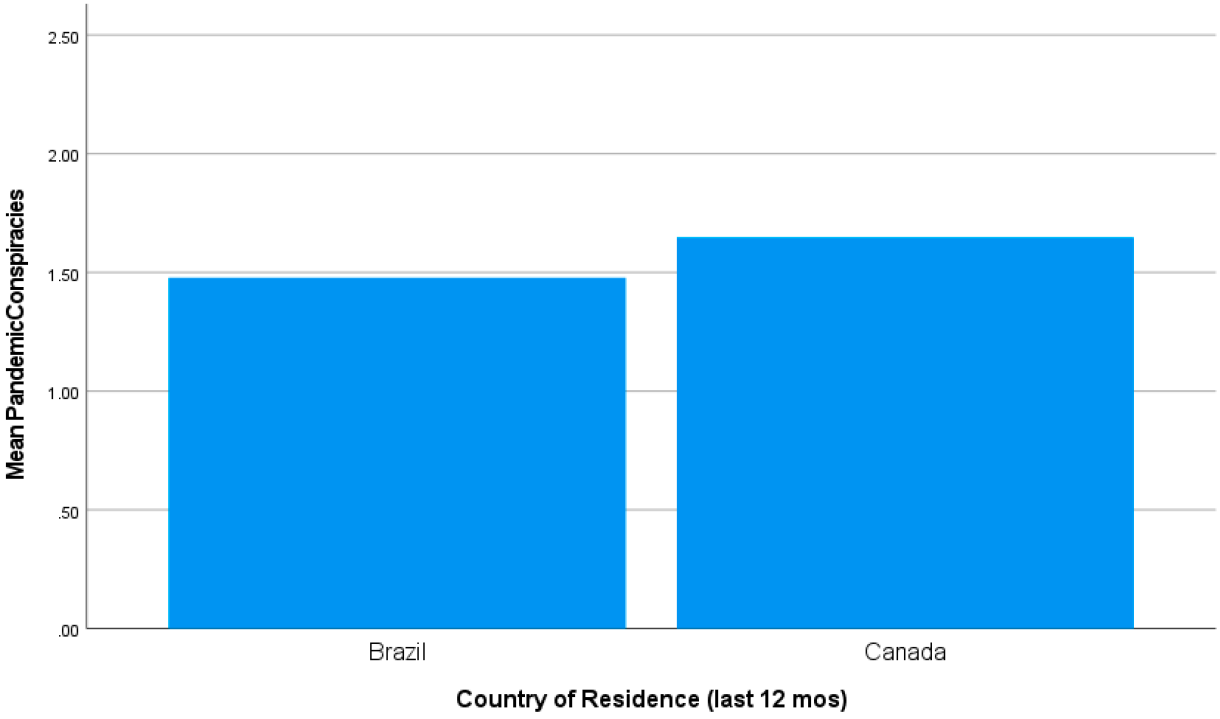
Appendix 4 — Demographic Descriptive Statistics Summary Table

Demographics Item	**Descriptive Statistics**
Age	18 y/o - 30 y/o = 45 31 y/o - 40 y/o = 2 41 y/o - 50 y/o = 4 51 y/o - 60 y/o = 8 61 y/o - 70 y/o = 7 71 y/o - 80 y/o = 1
Gender	Male = 24 Female = 88 Other = 1 Prefer not to answer = 1
Education Level	High school diploma = 41 Associate's degree = 9 Bachelor's degree = 48 Masters degree = 12 Doctorate and beyond = 6
Ethnicity	Arab/West asian = 5 Chinese = 2 Filipino = 9 Latin American = 34 South Asian = 34 Southeast Asian = 1 White = 10 Other = 1 Indigenous and Chinese = 1 Chinese and White = 1 Filipino and Southeast Asian = 1 Latin American and White = 7 Arab/West Asian and Latin American and White = 1 Black and Chinese and Other = 1 Filipino and Southeast Asian and White = 1

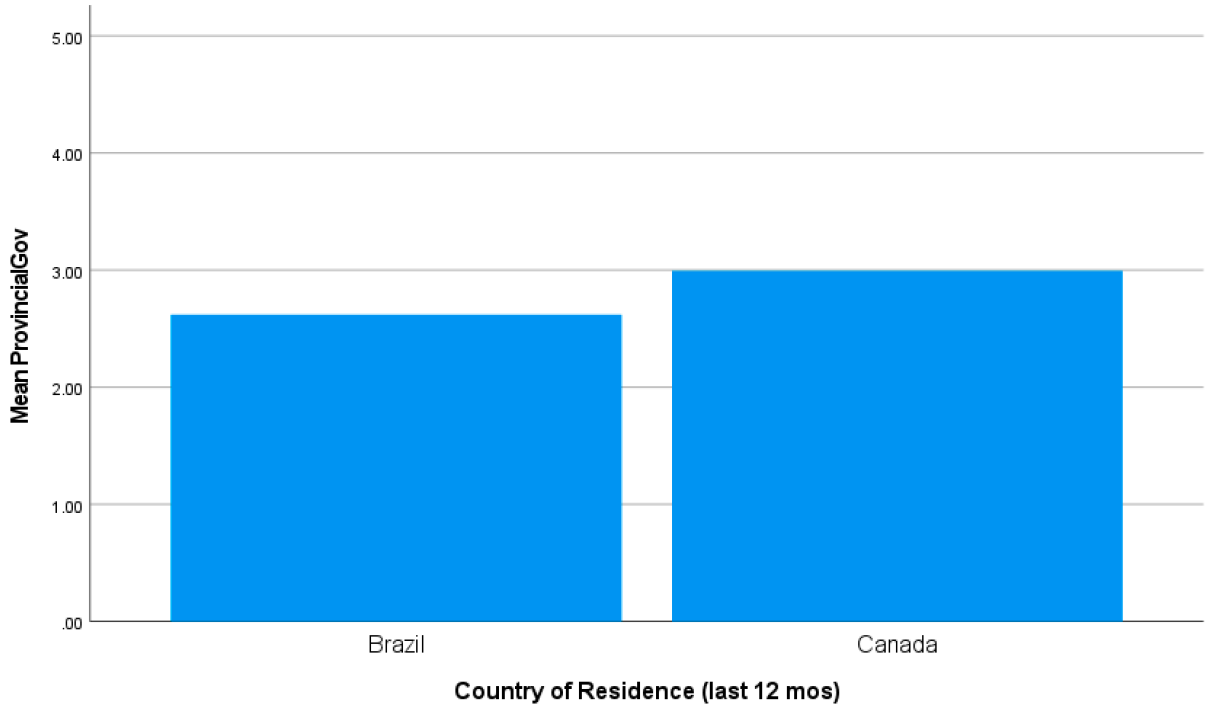
Appendix 5 — Graph 1: Differences between Brazilians and Canadians' Mean Scores of COVID-related health behaviors



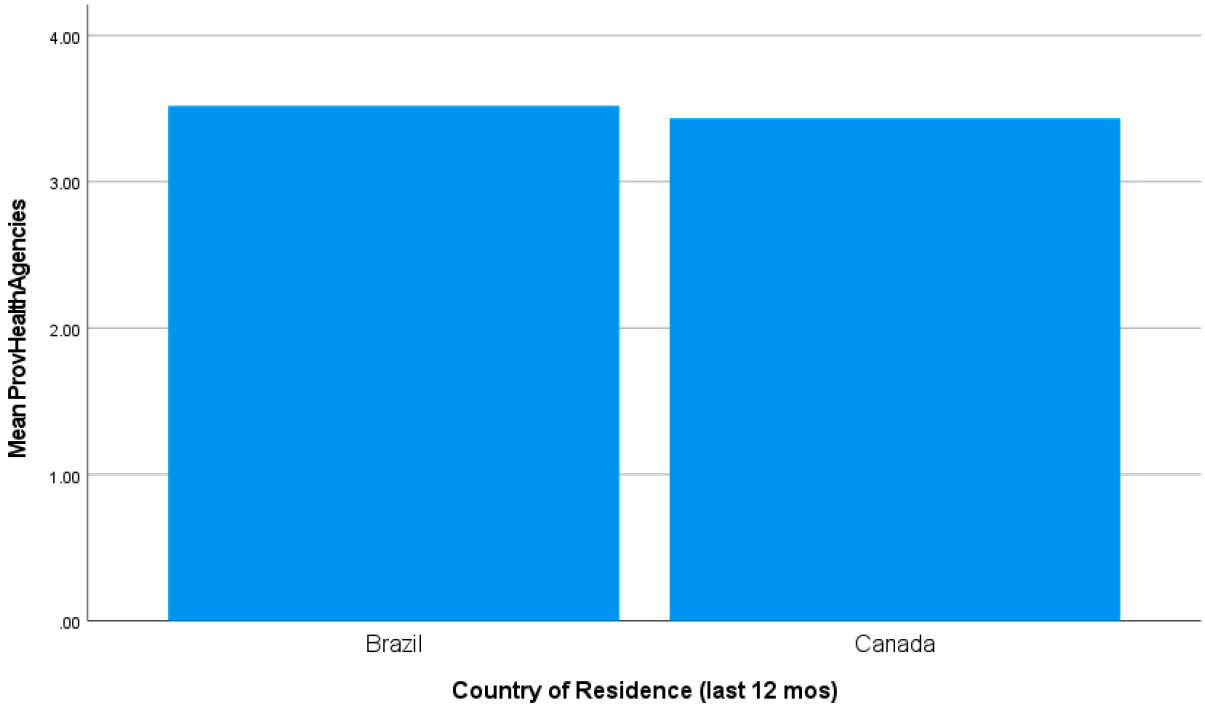
Appendix 6 — Graph 2: Differences between Brazilians and Canadians' Mean Scores of Belief in Pandemic-Related Conspiracies



Appendix 7 — Graph 3: Differences between Brazilians and Canadians' Mean Scores for Trust in the Provincial Government



Appendix 8 — Graph 4: Differences between Brazilians and Canadians' Mean Scores for Trust in Provincial Health Agencies



Appendix 9 — Graph 5: Differences between Brazilians and Canadians' Mean Scores for Interpersonal Trust in People on Social Media Platforms