

Is Neoliberalism Killing Us? A Cross Sectional Study of the Impact of Neoliberal Beliefs on Health and Social Wellbeing in the Midst of the COVID-19 Pandemic

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Abstract

Neoliberal ideology is linked to poorer collective health and well-being. At the individual level, however, neoliberal beliefs may actually promote self-efficacy, self-esteem, and self-reliance. We examined the effects of three beliefs underlying neoliberalism—(a) Personal Wherewithal, (b) Natural Competition, and (c) Anti-Government Interference—to understand the unique pathways by which neoliberalism affects health and well-being at the individual level. Participants were recruited using paid advertisements on social media in May/June 2020. Multivariable regression identified associations between each of the three identified neoliberal beliefs and participants' (a) self-rated physical health, (b) number of health diagnoses, (c) life satisfaction, (d) loneliness, and (e) social trust of family, close friends/partners, coworkers, neighbors, and strangers. Among 2632 respondents, personal wherewithal was associated with better health, life satisfaction, and social well-being (perhaps by promoting self-efficacy and self-reliance to undertake healthy behaviors), while anti-government beliefs were associated with worse life satisfaction and social well-being (perhaps by reducing benefits inherent in collective action and social connection). Those hoping to reduce the negative effects of neoliberalism on collective well-being must contend with the reinforcing effect that personal wherewithal might have in shaping the perceived benefits of neoliberalism among those with these beliefs.

Keywords

neoliberalism, public health, life satisfaction, loneliness, social trust, governance

According to Navarro (2007), neoliberalism is an ideology based on the theory that natural market forces of supply and demand create an optimal distribution of resources within society—thereby maximizing personal well-being of individuals and communities.¹ Advocates of neoliberalism argue that government intervention disrupts these natural market forces—creating inefficiencies and reducing societal and economic benefits.² Rising to prominence under the Reagan and Thatcher administrations in the United States and United Kingdom, respectively, neoliberalism has crept into many aspects of political thought and everyday life.^{3,4} Widespread public support for the ideology led to sweeping policy reforms²—especially as it became synonymous with popularly held individualistic, meritocratic, and naturalistic worldviews.^{5–8} Among these reforms were divestments from social welfare programs and the privatization of many health and social goods.⁹

Given the radical changes caused by neoliberalism to the public sector, the topic has attracted increasing attention from scholars,¹⁰ including medical and public health

researchers.^{11,12} Within the public health and medical sciences literature, critiques of neoliberal ideology emphasize negative health effects arising from applications of neoliberal ideology. For example, Sparke and Williams recently described the COVID-19 pandemic as a “neoliberal disease”—a term they use to highlight neoliberalism’s role in facilitating transmission of SARS-CoV-2 by focusing policy makers on individual-level behaviors (eg, *physical distancing*) rather than structural interventions (eg, *paid sick leave*¹³). Other studies have highlighted how the neoliberal transformation (ie, privatization) of national health

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systems has negatively impacted health care affordability and quality.^{14,15}

Skepticism of neoliberalism seems to be popular among public health practitioners, who increasingly view health promotion and behavior change interventions (once the bread and butter of public health programming) as ineffective (or even harmful) neoliberal distractions that misplace the responsibility for health and wellness on individuals rather than governments.^{16,17} For example, researchers have noted that public health emphasis on diet and exercise abdicates responsibility of governments to provide healthy food regulations, greenspaces to exercise, and worker protections that support worker well-being balance^{18–20} Effective psychological interventions, such as cognitive behavioral therapy, mindfulness, and resilience-building have been challenged for their role in “responsibilizing” individuals to manage their own mental health, rather than building environments and communities that prevent mental illness.^{21–26} Regarding one of the greatest health threats of all, advocates for climate action are concerned by the neoliberal emphasis on individual-level carbon footprints instead of effective government regulations, such as carbon taxes.²⁷ These critiques have encouraged researchers to look for strategies to “de-implement” programs that are built on neoliberal and other non-evidence-based approaches.²⁸ While not all of these interventions (eg, cognitive behavioral therapy) are characterized by all as neoliberal, the trends nevertheless highlight the importance of considering neoliberalism in the context of health care services and interventions.

Many of these arguments are backed with indirect, albeit persuasive, empirical support. These include country-level ecological studies that demonstrate neoliberalism is associated with poorer health at the national level.^{6,29} Unfortunately, when making inferences about individuals, these ecological studies are notoriously prone to fallacy, bias, and confounding.³⁰ Further, direct empirical studies that could help triangulate the effect of neoliberalism on individuals’ health are relatively scarce. One recent noteworthy study by Becker, Hartwich, and Haslam (2021) showed that the perception that one’s society is neoliberal (eg, “*Our society highly values individual success,*” “*Our society does not place great value on the collective good,*” “*In our society, control over the economy is left to the free market,*” “*In our society the government takes on few responsibilities*”) is associated with poorer well-being. They show that this effect may be due to lower sense of connectedness to others (ie, loneliness) caused by neoliberalism.³¹ The premise of this finding is that neoliberalism promotes potentially anti-social attitudes, such as individualism and competitiveness,^{32,33} although we note that these characteristics precede the neoliberal era.

However, it is important to recognize that neoliberalism may have different effects on different social classes and groups. Navarro and others argue that neoliberalism is the ideology of the globe’s dominant class—ostensibly because

it has differential benefits for individuals according to their social class.² This differential effect is arguably one reason why neoliberalism creates inequalities: It benefits some, while punishing others.^{34,35} While Becker and colleagues tested the effects of neoliberalism across social classes (finding that social class was not the moderator they had were looking for), the scale they created to measure neoliberalism did not measure internalized neoliberal beliefs (eg, “*A person’s success in life is determined more by his or her personal efforts than by society*”), but rather whether one viewed their society as neoliberal (eg, “*In our society, more and more public services like health care and education are privatized and run for profit*”). The distinction between *perceived neoliberalism* and *internalized neoliberal beliefs* is critical to understanding the various pathways by which neoliberalism impacts health and how it is sustained as a dominant political, social, and economic ideology.^{36,37} Indeed, several authors have found that neoliberal beliefs themselves may ultimately be beneficial to individuals who hold them—even if neoliberalism on the whole creates greater inequality and net harm. According to these studies, neoliberal beliefs support self-actualization, self-regulation, healthy competition, and pursuits of happiness that help neoliberal believers advance their interests in the world.^{38,39} For example, neoliberal beliefs have been linked to sex-positive sexual attitudes.⁴⁰ Health behavior researchers describe this effect in terms of internal and external loci of control (ie, *the extent to which individuals believe the things that happen to them are within their internal control or under the external control of others*). These behavioral studies have shown that the more neoliberal orientation (ie, *orientation to an internal locus of control*) is associated with positive health behaviors.^{41–43} For example, Presti and colleagues (2021) showed that internal locus of control was associated with greater adherence to COVID-19 prevention behaviors during lockdowns.⁴⁴ In other words, neoliberalism supports the ablest theory of the individual as an independent actor, who can overcome any obstacle and achieve any dream if she only sets her mind to it and works hard enough.^{45,46} Clearly, this self-conceptualization has the potential to support higher self-esteem, self-control, and self-efficacy—all of which are positive psychological dimensions that lend benefit to individuals.^{47,48} Of course, one must recognize that even with these supposed benefits, the effects of neoliberalism on individual well-being may be different than its net effect on societal well-being.³⁹ Furthermore, the effects may differ for different classes—a possibility that we plan to address in future research.

The present study aims to better our understanding of the effects of neoliberal beliefs on health and well-being of people living in Canada during the COVID-19 pandemic—a time in which robust state action, according to a growing chorus of pundits, has spelled the end of the neoliberal era.⁴⁹ To accomplish this goal, we measured beliefs in three sub-components of neoliberalism: Personal

Wherewithal (eg, “Any goal can be achieved with enough hard work and talent”), Natural Competition (eg, “Being competitive is part of human nature”), and Anti-Government Interference (eg, “The government often hurts individual ambition when it interferes”). We hypothesized that belief in Personal Wherewithal would be associated with higher life satisfaction, reporting fewer health problems, better self-rated physical health, and lower loneliness,⁴⁸ even after controlling for effects of income, political orientation, and other potentially salient measures of social position. Further, we hypothesized that higher Natural Competition and Anti-Government Interference would be associated with lower social trust and higher loneliness—supporting mechanisms proposed by Becker and colleagues.³¹

Methods

Participants

Study participants were recruited using paid advertisements on Facebook and Instagram between May and June 2020,

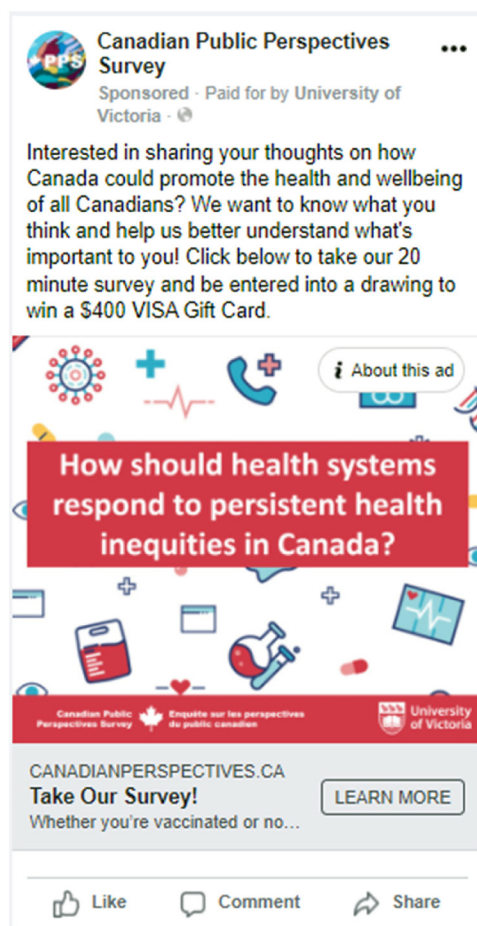


Figure 1. Example advertisement.

just after the peak of the third wave of COVID-19 in Canada. An example advertisement is provided in Figure 1. Advertisements and survey materials were placed in English and French. All interested participants were screened for eligibility prior to completing the survey. Eligibility restricted participation to individuals aged 16 + who lived in Canada and who provided informed consent to participate. Eligible participants completed a 20-min online survey and were compensated for their time by entering them into a prize drawing for \$400 CAD, payable by e-transfer or cheque. Ethics approval for this study was provided by the research ethics boards at the [Redacted for blinded review].

Variables

Neoliberalism. We assessed internalized neoliberal beliefs using 20 items drawn from the Neoliberalism Belief Inventory.³⁶ This measure originally consisted of four subscales measuring belief in systems inequality (eg, “Discrimination does not exist today to such a degree that affirmative action policies are necessary,” “Affirmative action is a problem because it treats people unequally”), Natural Competition (eg, “People should be allowed to compete to ensure that the best person wins,” “Shielding children from competition does not prepare them for adulthood”), Personal Wherewithal (eg, “Anyone who is willing to work hard can be successful in Canada,” “Anybody can get ahead in the world if they learn to play the game”), and Anti-Government Interference (eg, “A problem with government social programs is that they get in the way of personal freedom,” “Social programs sponsored by the government provide false incentives and unearned rewards”). We excluded the first of these subscales, which focused on affirmative action policies and discrimination, which we felt might be difficult for some respondents to answer due to differences in the trajectories of affirmative action policies in the United States and Canada. This decision was based on community consultations as well as the original author’s comment that the saliency of affirmative action, while a facet of neoliberal ideology, might be a product of their sampling of undergraduate American students.³⁶ The items for each of the remaining subscales were scored on a four-point Likert scale (“Strongly Agree,” “Agree,” “Disagree,” “Strongly Disagree”). Several items were reverse-coded in accordance with the original scale design. All subscales were scored separately by taking the sum of item scores. Final scores ranged from 6 to 24 on the Natural Competition subscale (Study $\alpha = 0.88$), 8 to 32 on the personal wherewithal subscale (Study $\alpha = 0.93$), and 6 to 24 on the Anti-Government Interference subscale (Study $\alpha = 0.93$). Higher scores on each subscale represented higher levels of neoliberal belief.

Life Satisfaction. Life satisfaction was assessed by asking participants, “Using a scale of 0 to 10, where 0 means “Very

Dissatisfied” and 10 means “Very Satisfied,” how do you feel about your life as a whole right now?” Responses were scored on an 11-point scale ranging from 0 (Very Dissatisfied) to 10 (Very Satisfied).

Self-Rated Health. Self-rated physical health was assessed by asking, “In general, would you say your health is _____?”, with responses scored on an index from 1 (Poor) to 5 (Excellent), with higher scores reflecting better self-rated physical health.

Number of Health Problems. Number of health problems was scored as an index count of the number of health problems reported by participants. Participants were provided a list of health problems to choose from and could report other health conditions not listed. Listed options and their frequency are provided in Supplemental Table S1.

Social Trust. Social trust was assessed by asking participants, “On a scale of 1 (cannot be trusted at all) to 5 (can be trusted a lot), how much do you trust each of the following groups of people?” The listed groups included: people in your family, people who you are in relationships with or who are close friends, people in your neighborhood, people you work or go to school with, and strangers.

Loneliness. Loneliness was measured using the three-item UCLA Loneliness Scale (Study $\alpha = 0.86$), which was designed as a short scale for measuring loneliness in large surveys.⁵⁰ As part of this scale, participants are asked how often they feel they “lack companionship,” feel “left out,” or feel “isolated from others,” and they may respond on a three-point scale: (1) “Hardly Ever,” (2) “Some of the Time,” or (3) “Often.”

Sociodemographic Variables. Sociodemographic variables included age, gender identity, ethnicity, relationship and family status, political orientation, income level, education level, employment status, housing situation, and regional population density. The demographic and situational factors were self-reported, and response options were aligned with the 2016 Canadian Census. Regional population density was extracted from the 2016 Canadian Census by linking participants’ self-reported Forward Sortation Area codes (ie, the first three digits of Canadian postal code) to FSA-level census population density.

Other Variables. In addition to including variables related to our main hypotheses, we included supplementary analyses looking at other variables related to neoliberalism scores. Among these, we examined whether higher neoliberalism was associated with support for anti-neoliberal policy proposals and public spending allocation decisions. These variables were included to help contextualize the meaning and significance of subscales. For example, participants were

asked to rate whether they agreed or disagreed with a variety of anti-neoliberal and progressive policies. Each policy position was rated from “Strongly Agree” to “Strongly Disagree” on a four-point Likert scale. The questions were presented with introductory text, which read, “The questions in this section ask about your views on a variety of government and social policies. You are asked to agree or disagree with each statement. We recognize that many of the issues we ask about are more complex than described. Please choose the level of agreement that best matches how you feel about the statements, as written.” The included policy statements assessed support for the following: programs reducing health inequities, prescription medication coverage, dental care coverage, support for common (eg, anxiety and depression) and major (eg, bipolar, schizophrenia) mental health conditions, decriminalization of drug-related offenses, universal basic income, universal child care, free tuition, programs addressing loneliness and social isolation, programs providing opportunities for friendship and community-building, rent controls, climate policies, reduced funding for police, and increased taxes on wealthy households. Participants were also asked to participate in an exercise designed to elicit preferences for budget allocations at the city level. Participants were instructed to “*imagine you are a decision maker working for your local government and you are asked to allocate the discretionary funding to existing public programs.*” They were then presented with seven bins (“*police enforcement,*” “*bylaw enforcement,*” “*fire and emergency services,*” “*mental health and social services [eg, housing, social supports, and services],*” “*infrastructure, engineering, and public works [eg, maintain streets and roads],*” “*utilities [eg, providing water, gas, electricity, sewer, garbage, and recycling],*” and “*parks and recreation [eg, community events, youth programs, public libraries, and concerts]*”) and asked, “*What percentage of the budget would you distribute to each of the following programs?*” Totals were forced to sum to 100. Finally, participants indicated their frequency of substance use for alcohol, cannabis, nicotine, cocaine, amphetamines, ecstasy, and hallucinogens on a five-point Likert scale (never, monthly or less, two to four times a month [ie, weekly or less], two to three times a week, four or more times a week). These questions were included to contextualize the Neoliberal Beliefs subscales by illustrating potential relationships between health behaviors and the Neoliberal Beliefs subscale measures.

Data Analysis

All statistical analyses were conducted using R version 4.1.2.⁵¹ As a preliminary step, observations with missing data on any of the primary outcome or primary explanatory variables were removed. Using the mice package, we conducted multiple imputation with classification and regression

Table 1. Descriptive Statistics.

Variable	Statistic
Age [Mean, SD]	59.83 (13.79)
Gender Identity [N, %]	
Man	1068 (40.6)
Queer	195 (7.4)
Woman	1369 (52.0)
Ethnicity [N, %]	
African, Caribbean, or Black	71 (2.7)
Indigenous	139 (5.3)
White	1942 (73.8)
Other	480 (18.2)
Relationship Status [N, %]	
No	833 (32.3)
Yes	1749 (67.7)
Family Status [N, %]	
Has Children	638 (24.7)
Does Not Have Children	1943 (75.3)
Political Orientation [Mean, SD]	3.90 (1.94)
Very to Somewhat Liberal (ie, 1-3)	1057 (40.2)
Moderate (ie, 4)	539 (20.5)
Very to Somewhat Conservative (ie, 5-7)	1036 (39.4)
Income [Mean, SD]	6.89 (3.26)
Under \$30,000	539 (20.5)
\$30,000 to less than \$60,000	706 (26.8)
\$60,000 to less than \$90,000	561 (21.3)
\$90,000 or more	826 (31.4)
Educational Attainment [N, %]	
High School Diploma or Lower	414 (15.7)
Advanced Training below Bachelor level	1087 (41.3)
Bachelor's or Above	1131 (43.0)
Employment [N, %]	
Employed	940 (35.8)
Unemployed	568 (21.6)
Retired	1118 (42.6)
Housing Situation [N, %]	
Own	1773 (68.1)
Rent	688 (26.4)
Other	143 (5.5)
Geographic Region [N, %]	
Atlantic Canada	242 (9.2)
British Columbia	591 (22.5)
Ontario	883 (33.5)
Prairies	783 (29.7)
Quebec	122 (4.6)
Territories	11 (0.4)
Population Density [Mean, SD, per 100 sq/km]	1338.46 (2463.58)
Rural (< 300 per sq/km)	1212 (48.3)
Suburban (301-1500 per sq/km)	532 (21.2)
Urban (1500 + per sq/km)	766 (30.5)
Social Trust Scores	
Family [Mean, SD]	4.34 (0.96)
Close Friends and Relationship Partners [Mean, SD]	4.34 (0.81)
Neighbors [Mean, SD]	3.35 (0.92)

(continued)

Table 1. (continued)

Variable	Statistic
Coworkers [Mean, SD]	3.38 (0.93)
Strangers [Mean, SD]	2.55 (0.89)
Life Satisfaction [Mean, SD]	7.42 (2.95)
Self-Rated Physical Health [Mean, SD]	3.13 (1.07)
Excellent [N, %]	249 (9.5)
Very Good	745 (28.3)
Good	940 (35.7)
Fair	488 (18.5)
Poor	210 (7.8)
Number of Health Problems [Mean, SD]	2.35 (1.73)
UCLA Loneliness Scale Score [Mean, SD]	4.95 (1.96)
Neoliberal Beliefs Natural Competition subscale Score [Mean, SD]	18.81 (3.75)
Neoliberal Beliefs Personal Wherewithal Subscale Score [Mean, SD]	19.91 (6.08)
Neoliberal Beliefs Anti-Government Interference Subscale Score [Mean, SD]	16.27 (5.33)

trees to impute values for each of the other variables analyzed.⁵² This procedure was applied to less than 1% of cells in the dataset. Descriptive statistics (ie, frequencies, proportions, means, standard deviations) were calculated using the *tableone* package.⁵³ Spearman correlation coefficients, histograms, and scatter plots were calculated using the *pairs.panels* function in the *psych* package to visualize data and associations between primary variables of interest.⁵⁴ Cronbach alpha were calculated using the *alpha* function of the *psych* package for each multi-item scale to provide assessments of internal consistency.⁵⁴ Principal axis factoring with oblim rotation was conducted using the *fa* function in the *psych* package to compare factor loadings with those of the original scale.⁵⁴ For our primary aim, multivariable regression models were constructed testing associations between each measure of wellness (ie, life satisfaction, self-rated physical health, number of health problems, loneliness, and social trust) and the Neoliberal Beliefs subscales. In each model, internalized neoliberal belief subscales were analyzed as covariates in order to assess the independent and adjusted effect of each subscale component. For our supplementary analyses, we constructed multivariable linear and logistic regression models examining associations between Neoliberal Beliefs subscale scores and other variables of interest (ie, support for progressive anti-neoliberal public policies, preferences for local budget allocations, and relationships with substance use in the past six months). A robust compositional linear regression model, implemented using the *robCompositions* package, tested the association between each Neoliberal Beliefs subscale and participants' budgetary allocation preferences.^{55,56} Binary logistic regression tested associations with agreeing (vs disagreeing) with

anti-neoliberal policy reforms. Linear regression models tested associations with frequency of substance use. With the exception of the compositional budget preference analyses, all supplementary models adjusted for the confounding effects of age, gender identity, ethnicity, relationship and family status, political orientation, income level, education level, employment status, housing situation, and regional population density.

Results

Table 1 provides descriptive statistics for this analytic sample. A total of 4642 eligible participants initiated the survey. Of these, 2632 provided responses for each of the primary and explanatory variables of interest. The high non-response rate is due to early drop-off among survey takes—which is typical for online survey methodologies. In brief, the sample was comprised primarily of people identifying as white (73.8%, similar to the Census population distribution of Canada [ie, 71.5%]); women (52.0%); and college-educated people (43.0%). The average age of the sample was 59.8 years—somewhat older than the general population of Canada (ie, 41.1 years) due to our exclusion of minors 15 years of age or younger.⁵⁷ Household incomes were distributed across the spectrum, with 20.5% earning less than \$30,000 per year and 31.4% earning more than \$90,000 per year. The average life satisfaction score of participants was 7.42 (out of 11). The average level of self-rated physical health was “Good” (ie, 3.13 out of 5). The average number of health problems per participant was 2.35 (out of 14). The mean Natural Competition subscale score was 18.81 (out of 24), the mean Personal

Wherewithal subscale core was 19.91 (out of 32), and the mean Anti-Government Interference subscale score was 18.42 (out of 24).

Table 2 provides multivariable associations of Neoliberal Beliefs subscales with health and social outcomes, controlling for confounding effects. Higher Personal Wherewithal subscale scores were associated with higher life satisfaction ($p < 0.001$); higher self-rated health ($p < 0.001$); fewer health problems ($p < 0.001$); higher social trust of family members ($p = 0.003$), close friendships ($p = 0.004$), coworkers ($p < 0.001$), and neighbors ($p < 0.001$); and lower loneliness ($p < 0.001$). Higher Natural Competition subscale scores were not differentially associated with self-rated health ($p = 0.244$), number of health problems ($p = 0.930$), or life satisfaction ($p = 0.456$)—but were associated with higher social trust of family members ($p < 0.001$) and close friends ($p = 0.002$), although they were not differentially associated with trust of coworkers ($p = 0.668$), neighbors ($p = 0.466$), or strangers ($p = 0.525$). Higher Anti-Government Interference subscale scores were associated with lower life satisfaction ($p < 0.001$), but were not differentially associated with number of health problems ($p = 0.750$) or self-rated health ($p = 0.064$). Higher Anti-Government Interference subscale scores were also associated with lower social trust of all sub-groups (All $p < 0.005$) and with greater loneliness ($p = 0.032$).

Supplemental analyses were also conducted to further contextualize the Neoliberal Beliefs subscale scores. Supplemental Table S2 shows the distribution of responses for each item belonging to the three Neoliberal Beliefs subscales, and Supplemental Table S3 shows factor loadings for each item. Supplemental Table S4 shows results

Table 2. Multivariable Associations of Neoliberal Beliefs Subscales With Health and Social Outcomes

Model	Personal Wherewithal			Natural Competition			Anti- Government Interference		
	β	SE	p -value	β	SE	p -value	β	SE	p -value
Self-rated Health	0.030	0.005	< 0.001	-0.010	0.008	0.244	0.012	0.007	0.064
Number of Health Problems	-0.014	0.004	< 0.001	0.0004	0.005	0.930	-0.001	0.004	0.750
Life Satisfaction	0.061	0.015	< 0.001	0.017	0.023	0.456	-0.086	0.019	< 0.001
Social Trust – Family	0.015	0.005	0.003	0.030	0.008	< 0.001	-0.013	0.006	0.037
Social Trust – Relationship Partners and Close Friends	0.009	0.004	0.044	0.020	0.006	0.002	-0.018	0.005	0.001
Social Trust – Coworkers	0.030	0.005	< 0.001	0.003	0.007	0.668	-0.023	0.006	< 0.001
Social Trust – Neighbors	0.023	0.005	< 0.001	0.005	0.007	0.466	-0.017	0.006	0.004
Social Trust – Strangers	0.001	0.005	0.867	-0.005	0.007	0.525	-0.017	0.006	0.005
Loneliness	-0.058	0.010	< 0.001	-0.020	0.014	0.167	0.026	0.012	0.032

Note: Multivariable linear and Poisson regression models estimating the effect of Neoliberal Beliefs subscales on each outcome. Self-rated physical health was scored on an index of 1 (Poor) to 5 (Excellent), with higher scores reflecting better self-rated physical health. Number of health problems was scored as an index count of the number of health problems reported by participants from the list provided to them. Life satisfaction was scored on an 11-point scale ranging from 0 (Very Dissatisfied) to 10 (Very Satisfied). Social Trust was assessed on a five-point scale from 1 (Cannot be trusted at all) to 5 (Can be trusted a lot). Loneliness was measured using the three-item UCLA Loneliness Scale. All subscales were included in each model, providing an independent and adjusted effect for each subscale. Additionally, all models adjusted for the confounding effects of age, gender identity, ethnicity, relationship and family status, political orientation, income level, education level, employment status, housing situation, and regional population density.

examining the association between each subscale score and participants' preferred budgetary allocations for a hypothetical local city budget. These results showed that higher neoliberalism scores were (generally) associated with lower expenditures on health and social services, recreation, utilities, infrastructure, and bylaw enforcement, but higher spending on police enforcement. Supplemental Table S5 show levels of support for a variety of anti-neoliberal policy proposals, and Supplemental Table S6 shows associations between Neoliberal Beliefs subscale scores and participants' agreement with these policy proposals. These results showed that higher Neoliberal Beliefs subscale scores were (generally) associated with less support for these progressive policy proposals. Supplemental Table S7 shows respondents' frequency of substance use in the past six months, and Supplemental Table S8 shows associations between frequency of substance use and each substance. In brief, these results showed that Personal Wherewithal subscale scores were associated with lower frequency of cannabis use ($p < 0.001$) and higher frequency of cocaine use ($p = 0.002$); Completion subscale scores were associated with higher frequency of use of alcohol ($p < 0.001$) and nicotine ($p = 0.023$); and Anti-Government Interference subscale scores were associated with higher frequency of use for amphetamines ($p = 0.003$), cannabis ($p = 0.031$), cocaine ($p = 0.018$), and ecstasy ($p = 0.003$).

Discussion

This study examined the effect of neoliberal beliefs on personal well-being in the midst of the COVID-19 pandemic—an era of intense state action in promoting the health of Canadians. Results showed that higher Personal Wherewithal, a key component of neoliberalism, was associated with higher self-rated physical health, life satisfaction, and social trust. Personal Wherewithal was also associated with lower loneliness and having fewer health diagnoses. These findings support previous research suggesting that self-reliance and self-efficacy have positive benefits for individuals.³⁸ While not fully addressed in this study, this positive association may be due to increased uptake of positive health behaviors among those with higher personal wherewithal—although this cannot be determined for certain without the addition of longitudinal data and qualitative research.^{58,59} While we cannot directly test this hypothesis in the present article, our supplementary analyses examining the association between substance use frequency and neoliberal beliefs do suggest that there may be a relationship between personal wherewithal and behavior. However, any potential causal paths between belief and behavior seem to be more nuanced than this hypothesis would suggest. For example, personal wherewithal was associated with lower frequency of cannabis use, but higher frequency of cocaine use. Clearly, the association between behavior and neoliberal beliefs is likely to depend on a host of factors that might

moderate or mediate a general effect. This includes beliefs about specific health behaviors and the cultural factors that shape motives to engage in specific health-related behaviors.

Another important insight drawn from our results relates to the challenge of overcoming neoliberal resistance to beneficial progressive policy proposals. In particular, this resistance may arise from our finding that the Personal Wherewithal sub-component of neoliberalism may support improved health and well-being through promoting personal reliance, self-efficacy, and self-actualization. Thus, while neoliberalism may be harmful to collective well-being,^{6,29} the apparent benefits of neoliberal beliefs to supporters of the ideology may reinforce positive biases for the ideology's utility in governing social policy.³⁹ After all, from their own lived experience, neoliberal supporters may find evidence that supports the ideology. This is especially so if “hardworking” neoliberals fail to recognize the privileges that ensured their efforts did not go unrewarded.⁶⁰ Of course, in reality, the benefits of neoliberalism to an individual are likely contingent on a host of external factors related to their personal circumstance and social position.^{61–63} Further research is needed to understand what role neoliberalism has for individuals who are barred from living up to neoliberal ideologies of personal success, but yet support them. Such research might examine or test whether the lack of positive reinforcement mechanisms might result in declining support for neoliberal beliefs or examine whether those who have neoliberal beliefs but do not experience positive reinforcement are more likely to desist from such beliefs. Such research—particularly longitudinal studies—might allow for the causal pathways proposed here to be tested. Indeed, we might assume that neoliberal beliefs are beneficial for those who are able to achieve their goals, but discouraging and harmful for those who are not. It is unclear whether individuals in these situations might relinquish neoliberal beliefs. If these circumstances do, it may provide an alternative causal theory for the findings observed here: Namely, that poorer health and life satisfaction cause reduced Personal Wherewithal. We should note that there is general experimental evidence suggesting that task self-efficacy is reduced by controlled failure.⁶⁴

Regarding the other dimensions of neoliberal belief, we found that higher neoliberal anti-government interference beliefs were associated with lesser life satisfaction. This finding must be interpreted with respect to the very strong levels of state action in response to COVID-19, which has brought the limits of government power to the forefront of public discourse and daily experience. One mechanism that might explain the association between anti-government interference beliefs and lower life satisfaction is the possibility that perceived government interference may reduce subjective quality of life for people with anti-social or anti-government beliefs by increasing their upset with government activities. Alternatively, as highlighted by negative relationships with social trust—particularly of out-group

individuals (eg, strangers)—their anti-government beliefs may create social or legal frictions that could decrease quality of life or limit options for therapeutic coping.⁶⁵ For instance, our supplementary analyses showed that frequency of substance use for a variety of drugs was higher for people with higher anti-government interference beliefs. Further, it is possible that people with anti-government interference beliefs may be less inclined to access government-provided health services.^{66,67} Similar patterns have been demonstrated in the United States by Republican voters' unwillingness to use federal subsidies for personal health insurance made available through the Affordable Care Act.⁶⁸ Finally, it is possible that these individuals are less likely to rely on social connection and support, which are known to promote health and well-being.^{69–71} This possibility agrees with Becker and colleagues' research showing that perceived neoliberalism was associated with greater social disconnection and higher competitiveness, which in turn predicted lower well-being.³¹ Further research exploring mediators and moderators of the effects identified by our article and Becker's are needed to fully understand the ways in which neoliberalism impacts health and well-being. The lack of associations between anti-government interference and either self-rated health or the number of health diagnoses, however, suggests that the effect is likely driven by effects on participants' attitudes and subjective experience rather than their physical health.

Our study has several limitations. First, our data are cross-sectional and were ascertained from a non-random sample. As such, we cannot ascertain direction of causality from this study. We note that our Discussion section explores possible interpretations of our findings and that these are based on existing evidence included in the present study and contextualized by other scholarship in this area. Nevertheless, we note that scholarship is limited and, therefore, no conclusions regarding causality should be drawn from our cross-sectional online convenience sample.⁷² Second, our data are drawn from an online convenience sample, which may limit external generalizability and representativeness.⁷³ We have tried to account for these weaknesses by controlling for potential confounding effects that might be related to our sampling design. We note that 2.7% of the sample reported being African, Caribbean, or Black (compared to 3.5% in the general Canadian population) and 5.3% reported being Indigenous (compared to 4.9% of the general population). Generally speaking, these statistics suggest our sample is similar to the general population (with the exception of age, due to the exclusion of youth who cannot provide informed consent in Canada below the age of 16). Third, there are likely variables that are important to this study that were not measured.⁷⁴ For example, additional measures of health behavior and personal circumstance could allow for a better understanding of the relationships being studied. Fourth, our study includes tests between multiple outcome and explanatory factors, which may increase

the probability that observed results are the product of statistical error.⁷⁵ Readers should therefore be cautious of marginal *p*-values and interpret effect sizes for corresponding variables with caution.

Conclusion

In conclusion, our study shows that beliefs in different dimensions of neoliberal ideology have differing effects on health and well-being for Canadians living during the COVID-19 pandemic. Namely, higher belief in personal wherewithal appears to have a positive relationship with health and well-being, while anti-government interference beliefs appear to be associated with lower social trust and life satisfaction. Further research is needed to understand the pathways linking these beliefs to health (eg, health care utilization, social connectedness, health behaviors) and to understand the role that social position and individual circumstance might have in moderating these relationships. This is particularly true in the context of our methods, which are limited by use of a cross-sectional convenience sample. Future longitudinal studies could address these issues, and other methodologies (eg, digital content analyses, qualitative interviews) could support a triangulation of findings. Further studies of the individual-level impacts of different dimensions of neoliberal beliefs could support opportunities to limit adverse impacts on public health and social policies that drive corrosive effects on collective health and well-being.

Author Contributions

KGC and KJH conceptualized the study. KGC and KJH undertook the research, developed the manuscript, and provided review.

Availability of Data and Material

Data is available upon request to the authors.

Code Availability

Code is available upon request from the author.

Consent to Participate

All participants provided informed consent.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.


Ethical Approval

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