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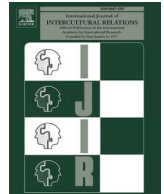
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Ethnic minority, immigrants, and Indigenous people's well-being disparities in Canada during the COVID-19 pandemic: The mediating role of threat perceptions

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ABSTRACT

The COVID-19 pandemic's differential impact on ethnic minorities, immigrants, and Indigenous people (e.g., mortality and infection rate, as well as psychological well-being) may exacerbate existing disparities. This study examined perceived threat as a psychological mechanism to explain the apparently more negative emotional experiences of ethnic minority Canadians during the pandemic compared with non-immigrant European Canadians (i.e., the majority/mainstream ethno-cultural group). We investigated group differences in negative affect and three possible threat mechanisms (perceived health, material, and cultural threat) for these differences using an online survey completed by a self-selected Canadian sample ($N = 1,918$). The results suggest that compared to the non-immigrant European Canadian group, ethnic minority members, immigrants, and Indigenous people have on average perceived higher levels of pandemic threat, which in turn is associated with negative affect. These findings support the hypothesis that the amount of threat perceived by different groups during the pandemic might partially explain reported group differences in well-being.

Introduction

The COVID-19 pandemic intensified existing mental and physical health disparities among racial and ethnic minorities (Azar et al., 2020; Lopez, Hart, & Katz, 2021), underscoring the importance of understanding the pandemic's impact on disadvantaged groups (Kulich, Komisarof, Smith, & Cushner, 2021). For example, ethnic minorities and immigrants in North America reported higher rates of COVID-19 infection, hospitalization, and death rates than their white counterparts (Escobar et al., 2021; OECD, 2020; Rubin-Miller, Alban, Artiga, & Sullivan, 2020; Statistics Canada, 2020a, 2020b, 2020c). In addition to physical health, there are also mental health disparities during the pandemic – ethnic minorities, immigrants, and Indigenous people experienced higher levels of distress and more mental health problems compared to European Canadians/White Americans who are not immigrants (i.e., the majority/mainstream ethno-cultural groups (Gibson, Schneider, Talamonti, & Forshaw, 2021; McKnight-Eily et al., 2021; Purtle, 2020; Rubin-Miller et al., 2020; Statistics Canada, 2021; Zhou, Nguyen-Feng, Wamser-Nanney, & Lotzin, 2022;). According to Minority Stress Theory (Meyer,

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Schwartz, & Frost, 2008), minoritized persons experience a greater number of threats/stressors compared to non-minoritized persons, which may explain the disadvantaged groups' well-being disparity. Such threats can be rooted in the higher COVID-19 infection rate among minorities, racism, and financial impact. In this study, we investigated whether threat perceptions can help us understand why minority groups in Canada experienced more negative emotions during the pandemic.

Perceived threat and well-being

The COVID-19 pandemic has given rise to diverse and relatively immediate threats due to the virus (Van Bavel et al., 2020). Although these threats can give rise to behavioral changes and positive adaptation to the situation (e.g., preventive behaviors such as wearing masks and social distancing; Rui, Yang, & Chen, 2021; Nisa et al., 2021), they can also have social and emotional costs (Kachanoff, Bigman, Kapsaskis, & Gray, 2021; Kulich et al., 2021). Research has shown that perceptions of health-related threats to oneself and one's loved ones could trigger negative emotional experiences (Commodari & La Rosa, 2020; Liu, Lithopoulos, Zhang, Garcia-Barrera, & Rhodes, 2021).

Integrated Threat Theory conceptualizes threat in terms of material threat (i.e., concerns realistic, economic risks) and cultural threat (concerns symbolism, cultural values, ideology, and social changes; Stephan, Stephan, & Gudykunst, 1999). Research has shown that the perceptions of material threat and cultural threat predict one's psychological well-being (Kachanoff et al., 2021; Schmid & Muldoon, 2015; Tartakovsky & Walsh, 2016). COVID-19 poses an obvious health threat, including a severe, long illness and possible mortality, but it also presents material and cultural risks. For many people, it realistically undermines the security of their employment, and more broadly, many societies' economies. The pandemic also poses a cultural threat because it could contribute to social disorder and/or new social regulations (e.g., social distancing, face mask mandates, lockdowns) that change the group's valued norms, ideology, group connections, and way of life (e.g., sense of freedom; Kachanoff et al., 2021; Lalot, Abrams, & Travaglino, 2021; Nisa et al., 2021). Thus, it is important to understand how material and cultural threats, in addition to the commonly discussed health threat, may translate into people's emotional experiences during the pandemic.

Minority experiences and perceived threat

Prior to the pandemic, immigrants, ethnic minorities, and Indigenous peoples' disparities in psychological outcomes have already been well-documented (Bedi, 2018; Cobb et al., 2021; McGuire & Miranda, 2008; Williams, 2018). Minority Stress Theory (Meyer et al., 2008) suggests that minoritized persons' (e.g., ethnic minorities, Indigenous people) poorer mental health can be explained by the greater number of threats/stressors (e.g., systemic racism) that they experience compared to non-minoritized persons.

During the pandemic, these disadvantaged groups continue to experience additional threats, as they are disproportionately impacted by the pandemic. Regarding health threat, visible minority members suffer higher infectious rate than the majority group (i.e., European Canadians who are not immigrants) because they are more likely to be in sectors with greater exposure to COVID (e.g., frontline, essential service; Statistics Canada, 2020b). Moreover, Indigenous people reported having less access to healthcare because of isolation (Statistics Canada, 2020c). Immigrants may also have less access to healthcare because of cultural and language barriers (Bae, 2020; Usama, Fathi, Vasileva, Petermann, & Reinelt, 2021; Ward, Szabó, Schwartz, & Meca, 2021). Regarding material threat, visible minorities, immigrants, and Indigenous people reported a higher unemployment rate and more financial hardship during the pandemic than the majority group did (Statistics Canada, 2020b, 2020c, 2021; Kim, Kim, Tuttle, & Zhang, 2021; OECD, 2020). A third set of stressors comes from the rise of racism and xenophobia during the pandemic (Adler, Hebel-Sela, Leshem, Levy, & Halperin, 2022; Gover, Harper, & Langton, 2020; Lou, Noels, Kurl, Zhang, & Young-Leslie, 2021; Miconi, Li, Frounfelker, Venkatesh, & Rousseau, 2021; Muis & Reeskens, 2022). This increase in perceptions and experiences of discrimination could lead ethnic minority group members and Indigenous people to worry about social disorder, which is related to cultural threat. Similarly, the increased racial tension and perceived discrimination may heighten feelings of cultural-related mistrust and concerns among minorities (Cokley et al., 2021; Lou, Noels, Kurl, Zhang, & Young-Leslie, 2022). Together, we expected that minority groups (i.e., immigrants, ethnic minorities, and Indigenous people) would experience more health, material, and cultural threats than the European Canadian group during the pandemic.

The present study

Although ethnic minority people may face more severe threats during the COVID-19 pandemic, little is known about how these threats contribute to the understanding of mental health disparity. In this study, we assess group disparity in well-being and examine the mediating role of pandemic threat in accounting for such disparity. Based on previous research, we hypothesized that immigrants, ethnic minorities, and Indigenous people would perceive higher level of perceived threat and negative affect than the majority group (H1). Moreover, we hypothesized perceived threat would explain the group disparity in well-being (H2).

Method

Participants and procedure

This report summarizes data collected as part of a broader COVID-19 related inquiry that was approved by the University of Alberta's research ethics committee. We conducted a nationwide survey (see the survey items in Online Supplement Appendix)

between June 15 to June 22, 2020 with participants in a web panel created by a Canadian non-partisan, not-for-profit public opinion research foundation. Only participants who expressed interest received the invitation to complete the survey (see <https://angusreid.org/how-we-poll-ari/> for polling method) and the response rate is 27.9%. As such, this self-selected sample cannot be considered representative of Canadians in general.

The sample included 1918 adults (Age: *Range* = 18–89; *Median* = 46, *SD* = 15.88), all of whom were Canadian citizens or permanent residents (see Table 1 for demographics). The sample was comprised of 362 (18.9%) ethnic minority members who were born outside of Canada (i.e., minority immigrant group).¹ Among the non-immigrants (*n* = 1556), 1136 were of European descent (i.e., European Canadian group, or the majority group), 100 were Indigenous persons (i.e., Indigenous group), and 320 were other ethnic minority group members (i.e., Non-immigrant minority group). The differences between these four groups in the demographic variables are reported in Online Supplement (Appendix B).

Measures

Perceived threat

This scale was adapted from the collective threat scale (Stephan et al., 1999) and perceived threat of the SARS pandemic instrument (Lee-Baggeley, DeLongis, Voorhoeve, & Greenglass, 2004). The participants responded on a 6-point scale, including material threat (3 items), health threat (3 items), and cultural threat (4 items). A confirmatory factor analysis suggested that the three-factor model of perceived pandemic threat fit the data well ($\chi^2 = 371.99$, *df* = 32, CFI = 0.95, RMSEA = 0.07, SRMR = 0.05), and the scalar invariance between groups was supported ($\chi^2 = 765.73$, *df* = 170, CFI = 0.92, RMSEA = 0.08, SRMR = 0.07). All factor loadings were above .41, and the ω (internal reliability) were .80, .68, and .71 for health, material, and cultural threat, respectively.

Negative affect

This scale was adapted from the Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). The participants responded on a 6-point scale (from “not at all” to “very much so”) about their negative feelings (worried, angry, grief, lonely, sad, lack concentration, and bored) during the pandemic. A confirmatory factor analysis showed that the one-factor model of the negative emotions fit the model only adequately given a high value of RMSEA ($\chi^2 = 239.39$, *df* = 14, CFI = 0.92, RMSEA = 0.09, SRMR = 0.04). After deleting one item (i.e., bored) as suggested by the modification index (due to its high value of correlational errors with other items), the model fit the data well ($\chi^2 = 43.98$, *df* = 9, CFI = 0.99, RMSEA = 0.04, SRMR = 0.02) and had significantly improved fit ($\Delta\chi^2 = 195.41$, *df* = 5, *p* < .001). All factor loadings were above .50 and the ω (internal reliability) was .74. Moreover, the scalar invariance among the four groups was supported ($\chi^2 = 177.40$, *df* = 66, CFI = 0.97, RMSEA = 0.06, SRMR = 0.06).

Potential covariates

The participants also reported background variables, including gender, age, education level, and household income, which were found to be related to people’s well-being and threat during COVID-19 (International Labour Organization, 2021; Liu et al., 2021; Kachanoff et al., 2021). Political orientation (1 = very left to 5 = very right, representing a liberal-conservative continuum) was also found to be related to cultural threat (Kachanoff et al., 2021). In addition, the participants indicated whether they are immunocompromised (0 = no or not sure and 1 = yes) and whether COVID has impacted their income/employment (1 = No, 2 = income down moderately [up to 25%], 3 = income down a lot [over 25%], and 4 = lost job/employment income entirely). We expected that people who are immunocompromised are more likely to perceive health-related threat, whereas those whose income is impacted by COVID would perceive more material threat. Finally, the participants indicated their perceived available personal support on one item using a 4-point scale (see Supplement Appendix A). We expected that people who have more personal support would perceive less threat.

Analysis plan

To test H1, we used regression analysis to examine whether Indigenous people, minority immigrants, and non-immigrant ethnic minority groups each report significant differences in perceived threat and negative affect from the majority group (i.e., European Canadian group, which was dummy coded as the reference group). To address H2, we ran path analyses to test whether group differences (i.e., target minority group vs. majority group) on negative affect are mediated by pandemic-related threats. The data contained 3.6% missing values, which were handled using Full Information Maximum Likelihood to test the hypotheses.

¹ In this study, immigrants who identified as European Canadians were not included due to a relatively small sample size (*n* = 83).

Table 1
Participants' Demographic Information.

Responses		N	Percentage
Sex			
	Male	944	49.2%
	Female	928	48.4%
	Non-binary or other	46	2.4%
Group			
	(1) Majority group (i.e., Non-immigrant European Canadians)	1136	59.2%
	(2) Indigenous and First Nation people	100	5.2%
	(3) Non-immigrant ethnic minority ^a	320	16.7%
	Caribbean	18	5.6%
	Central or South American	8	2.5%
	African	4	1.3%
	Middle Eastern	12	3.8%
	South East Asian	29	9.1%
	East Asian	242	75.6%
	South Asian	17	5.3%
	Other	3	0.9%
	(4) Minority Immigrant ^a	362	18.9%
	Caribbean	7	1.9%
	Central or South American	9	2.5%
	African	9	2.5%
	Middle Eastern	14	3.9%
	South Asian	26	7.2%
	South East Asian	35	9.7%
	East Asian	264	72.9%
	Other	10	2.8%
Education			
	Without higher education experience	962	50.2%
	With higher education experience	956	49.8%
	Some university	191	20.0%
	University undergraduate degree	546	57.1%
	University graduate degree	219	22.9%
Household Income			
	Under \$25,000	156	8.1%
	\$25,000 to less than \$50,000	333	17.4%
	\$50,000 to less than \$100,000	652	34.0%
	\$100,000 to less than \$150,000	348	18.1%
	\$150,000 to less than \$200,000	146	7.6%
	Over \$200,000	89	4.6%
	Don't know / Rather not say	194	10.1%
Immune compromised (Have a pre-existing medical condition that might make you more vulnerable to COVID-19)			
	Yes	553	28.8%
	No or Do not know	1365	71.2%
Length of residence (Immigrant participants only; n = 362)			
	Fewer than 5 years	18	5.0%
	5–10 years	61	16.9%
	11–20 years	89	24.6%
	21–30 years	93	25.7%
	More than 30 years	101	27.9%

Note. ^a Participants could identify as multiple ethnic groups; thus, the sum of the percentage is more than 100%.

Results

Preliminary analyses

The descriptive statistics and correlations among key variables are reported in Table 2. We first examined whether the control variables (i.e., sex, education, household income, age, political orientations, immunocompromise, and available social support) were correlated with the threat and negative affect. We found that female participants reported higher levels of health threat and negative affect than male participants. Although household income was not significantly related to any outcomes, people who experienced a more negative impact of the pandemic on their income also reported more material threat and higher negative affect. Those who had a higher educational level reported more health threat but less cultural threat. Age was negatively correlated with negative affect. Political orientation (right vs. left) was positively associated with material and cultural threat, but negatively associated with health threat. Those who are politically more conservative reported more material and cultural threats, whereas those who are more liberal reported a greater health threat. Finally, people who are immune-compromised reported more health-related threat, and those who had more social support also perceived less cultural threat.

Table 2
Results of Descriptive and Correlational Analyses.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Sex (0 = male, 1 = female)	–	.04	–.02	–.01	.04	–.10	.05	.08	.13***	.02	–.09	.12***
2. Higher education (0 = no, 1 = yes)		–	.23***	–.09	–.07	–.15***	–.04	.05	.16***	–.05	–.16***	.08
3. Household income			–	–.16***	–.03	.05	–.05	.08	–.04	–.02	–.04	–.07
4. COVID impact on income				–	.01	–.06	.01	–.05	.06	.33***	.07	.15***
5. Age					–	.15***	.23***	.06	–.01	.03	.01	–.22***
6. Political orientation						–	.04	–.09	–.21***	.15***	.38***	–.14***
7. Immune compromised (0 = no, 1 = yes)							–	.05	.17***	.03	–.06	.03
8. Available social support								–	.05	–.06	–.17***	–.09
9. Health threat									–	.21***	–.13***	.29***
10. Material threat										–	.46***	.33***
11. Cultural threat											–	.17***
12. Negative affect												–
N	1872	1918	1724	1236	1918	1918	1918	1918	1918	1918	1918	1918
Mean	1.50	1.50	3.15	1.82	46.58	2.82	0.29	2.50	3.73	4.03	3.16	3.22
SD	0.50	0.50	1.24	1.10	15.88	1.10	0.45	0.75	1.36	1.07	1.36	1.14
Theoretical range	0 / 1	0 / 1	1–6	1–4	NA	1–5	0 / 1	1–4	1–6	1–6	1–6	1–6
Skewness	0.02	0.01	0.34	0.96	0.20	0.65	0.94	0.05	–0.14	–0.14	0.30	0.12
Kurtosis	–2.00	–2.00	–0.13	–0.59	–0.96	–0.26	–1.13	–0.62	–0.75	–0.43	–0.80	–0.57

Notes. *** $r \geq 0.10$ and $p < .001$, two-tailed test.

Group differences in perceived threat and well-being

As shown in Table 3, group status alone accounts for a little variance on threat and negative affect (R^2 s = 0.01 to .06; Model 1), but a relatively large increase in explained variance when the control variables are included in the model (R^2 s = 0.12 to .19; Model 2). Model 1 shows that there is a clear pattern that the minority immigrant group perceived significantly higher levels of each type of threat compared to the European Canadian group. As well, the Indigenous group perceived more cultural threat, and the non-immigrant minority group perceived more health and material threat than the European Canadian group. These group differences in threat remained significant even after controlling for covariates (Table 3). Although the minority immigrant group and the non-immigrant minority group perceived a significantly higher level of negative affect (Model 1), these differences were no longer significant after controlling for covariates (Model 2). The mean comparison for the four groups is available in the Supplement (Appendix C).

Path analyses

We then conducted path analyses to systematically test the hypothesized mediation model (“groups→threats→negative affect”). Both models fit the data well: $\chi^2 = 9.62$, $df = 3$, CFI = 0.99, RMSEA = 0.045, SRMR = 0.008 (with controlled variables) and $\chi^2 = 2.31$, $df = 3$, CFI = 1.00, RMSEA ≤ 0.001 , SRMR ≤ 0.001 (without controlled variables).

As presented in Fig. 1, compared to the reference group (i.e., European Canadians), the Indigenous group perceived higher cultural threat, the minority immigrant group reported higher health, material, and cultural threat, and the non-immigrant minority group perceived higher health and material threat. And in turn, all three threats significantly predicted negative affect. The model controlling for covariates (values outside of the parenthesis in Fig. 1) and the model without controlling for covariates (values inside the parenthesis) yielded consistent findings.

The indirect effects (see Table 4) showed that cultural threat mediated the status of the Indigenous group and the European Canadian group on negative affect. Each of the health, material, and cultural threats significantly mediated the link between the minority immigrant group (vs. the European Canadian group) and negative affect. Finally, health and material threat mediated the association between the non-immigrant minority group (vs. the European Canadian group) and negative affect. In summary, these findings showed that perceived threat could explain the group disparity in well-being.

Discussion

The COVID-19 pandemic perpetuates the long-existing racial and ethnic disparities worldwide (Lopez et al., 2021; OECD, 2020). This study explores an important and timely topic that contributes to the understanding of negative emotional experiences during the pandemic from the perspective of group disparities. The primary goal of this study was to investigate the mediating role of pandemic threat on the racial and ethnic disparities of negative affect in Canada. Our finding corroborates the emerging literature that the disproportionate risk of COVID-19 on ethnic minority members, immigrants, and Indigenous people for not only their physical health, but also psychological well-being (Gibson et al., 2021; Rubin-Miller, 2020; Purtle, 2020).

Our findings suggest that the perceptions of threats might partly explain the group differences in well-being. Specifically, Indigenous people perceived more cultural threat (e.g., civil disorder, undermined Canadian culture); visible minority immigrants perceived significantly more health, cultural, and material threats; members of non-immigrant ethnic minority groups also perceived

Table 3
Regression results.

Model	Outcome variable	Predictor	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²
Model 1 (without controlled variables; <i>n</i> = 1918)								
	Health threat	Indigenous	−0.14	0.14	−0.02	−1.03	.301	.06
		Immigrant minority	0.77	0.08	0.22	9.70***	< .001	
		Non-immigrant minority	0.57	0.08	0.16	6.83***	< .001	
	Material threat	Indigenous	0.21	0.11	0.04	1.85	.065	.01
		Immigrant minority	0.29	0.06	0.10	4.45***	< .001	
		Non-immigrant minority	0.13	0.07	0.05	1.98*	.048	
	Cultural threat	Indigenous	0.40	0.14	0.07	2.82**	.005	.01
		Immigrant minority	0.22	0.08	0.06	2.66**	.008	
		Non-immigrant minority	−0.13	0.09	−0.04	−1.56	.118	
	Negative affect	Indigenous	0.02	0.12	0.00	0.16	.871	.01
		Immigrant minority	0.22	0.07	0.07	3.14**	.002	
		Non-immigrant minority	0.22	0.07	0.07	3.08**	.002	
Model 2 (with controlled variables; <i>n</i> = 1918)								
	Health threat	Indigenous	−0.21	0.13	−0.03	−1.58	.114	.16
		Immigrant minority	0.80	0.08	0.23	9.88***	< .001	
		Non-immigrant minority	0.53	0.08	0.15	6.29***	< .001	
		Sex	0.25	0.06	0.09	4.31***	< .001	
		Education	0.17	0.06	0.06	2.57**	.010	
		Household income	−0.06	0.03	−0.06	−2.43*	.015	
		COVID impact on income	0.05	0.03	0.04	1.60	.110	
		Age	0.00	0.00	0.01	0.50	.619	
		Political orientation	−0.23	0.03	−0.17	−7.87***	< .001	
		Immune compromise	0.54	0.07	0.18	8.30***	< .001	
	Material threat	Available support	0.08	0.04	0.05	2.31*	.021	.15
		Indigenous	0.16	0.11	0.03	1.51	.131	
		Immigrant minority	0.28	0.07	0.10	4.22***	< .001	
		Non-immigrant minority	0.19	0.07	0.07	2.77**	.006	
		Sex	0.07	0.05	0.03	1.54	.124	
		Education	−0.08	0.05	−0.04	−1.48	.138	
		Household income	0.03	0.02	0.04	1.55	.120	
		COVID impact on income	0.33	0.03	0.33	12.91***	< .001	
		Age	0.00	0.00	0.01	0.56	.579	
		Political orientation	0.17	0.02	0.16	6.92***	< .001	
	Cultural threat	Immune compromise	0.10	0.05	0.04	1.85	.064	.19
		Available support	−0.04	0.03	−0.03	−1.28	.201	
		Indigenous	0.37	0.13	0.06	2.84**	.005	
		Immigrant minority	0.24	0.08	0.07	2.99**	.003	
		Non-immigrant minority	0.03	0.08	0.01	0.40	.686	
		Sex	−0.11	0.06	−0.04	−1.87	.062	
		Education	−0.28	0.06	−0.10	−4.47***	< .001	
		COVID impact on income	−0.02	0.03	−0.02	−0.85	.395	
		Household income	0.09	0.03	0.07	2.66**	.008	
		Age	−0.00	0.00	−0.03	−1.42	.155	
	Negative affect	Political orientation	0.47	0.03	0.35	16.28***	< .001	.12
		Immune compromise	−0.09	0.06	−0.03	−1.44	.149	
		Available support	−0.21	0.04	−0.12	−5.82***	< .001	
		Indigenous	−0.08	0.11	−0.02	−0.70	.485	
		Immigrant minority	0.07	0.07	0.02	0.99	.321	
		Non-immigrant minority	0.00	0.07	0.00	0.03	.977	
		Sex	0.27	0.05	0.12	5.36***	< .001	
		Education	0.16	0.06	0.07	2.87**	.004	
		Household income	−0.05	0.02	−0.06	−2.37*	.018	
		COVID impact on income	0.15	0.03	0.15	5.30***	< .001	
		Age	−0.02	0.00	−0.23	−9.70***	< .001	
		Political orientation	−0.08	0.03	−0.07	−3.21**	.001	
		Immune compromise	0.20	0.06	0.08	3.52***	< .001	
		Available support	−0.10	0.03	−0.07	−3.27**	.001	

Note. The group variables were dummy coded using the non-immigrant European Canadian group as the reference. *** *p* < .001, ** *p* < .01, **p* < .05, two-tailed test.

more health and material threat. We tested these three types of threats as possible mechanisms contributing to the group differences of emotional experiences. We found that all three threats could account for why minority immigrants reported more negative emotions, whereas only the health and material threat explained why non-immigrant ethnic minority experienced more negative emotions. Furthermore, although the Indigenous group did not report a higher level of negative emotions than the majority group, they perceived more cultural threat, which indirectly predicted negative affect. Although other demographic variables (sex, education, income, age, political orientation, can health status) can also explain threat and well-being outcomes, the indirect effects of group status on well-

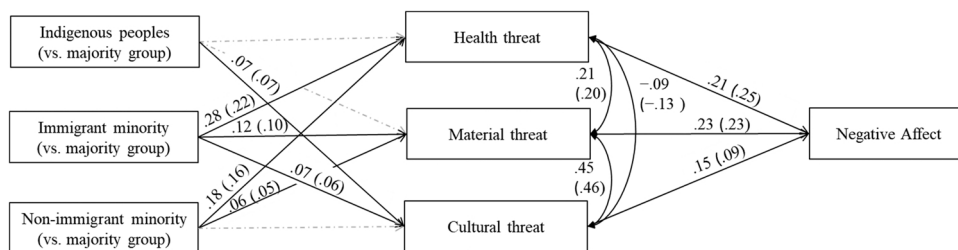


Fig. 1. Results for the final path analysis model. Note. The group variables were dummy coded using the dominant group as the reference. The first dummy variable represents the Indigenous group (1 when the person is Indigenous and 0 otherwise). Likewise, the second dummy variable represents ethnic minority immigrants, and the third group represents ethnic minority non-immigrants. Numbers inside the parentheses represent standardized coefficients without controlling for covariates, whereas numbers outside the parentheses represent standardized coefficients controlling for covariates. Solid lines and numbers in dark color represent significant path coefficients ($p < .05$), whereas dash gray lines represent non-significant paths. Missing data in the path model were handled using Full Information Maximum Likelihood (FIML).

Table 4

Indirect Effects for the Path Model: Estimates, Standard Error (SE), and 95% Confidence Intervals (CI).

Indirect links	Estimate	SE	Lower 2.5% CI	Upper 2.5% CI
Indigenous → health threat → negative affect	-0.06 (-0.03)	0.04 (0.03)	-0.132 (-0.096)	0.010 (0.034)
Indigenous → material threat → negative affect	0.02 (0.05)	0.04 (0.03)	-0.051 (-0.008)	0.095 (0.114)
Indigenous → cultural threat → negative affect	0.06* (0.03*)	0.03 (0.01)	0.009 (0.007)	0.119 (0.064)
Immigrant → health threat → negative affect	0.16* (0.16*)	0.03 (0.02)	0.104 (0.121)	0.218 (0.207)
Immigrant → material threat → negative affect	0.07* (0.07*)	0.02 (0.02)	0.034 (0.039)	0.125 (0.108)
Immigrant → cultural threat → negative affect	0.03* (0.02*)	0.01 (0.01)	0.004 (0.004)	0.058 (0.034)
Non-immigrant minority → health threat → negative affect	0.10* (0.12*)	0.02 (0.02)	0.061 (0.083)	0.150 (0.161)
Non-immigrant minority → material threat → negative affect	0.04* (0.03*)	0.02 (0.02)	0.002 (0.002)	0.082 (0.067)
Non-immigrant minority → cultural threat → negative affect	-0.01 (-0.01)	0.01 (0.01)	-0.035 (-0.025)	0.017 (0.001)

Note. *A 95% CI (with 5000 bootstrap samples) not including zero indicates significant indirect effects. Numbers inside the parentheses represent coefficients for the model controlling for covariates, whereas numbers outside the parentheses represent coefficients for the model without controlling for covariates.

being remain significant even after controlling for these demographic variables.

This research uses perceived threats as a lens to understand mental health disparities and identifies some of the challenges experienced by different minoritized groups during the pandemic. Our results are consistent with Minority Stress Theory (Meyer et al., 2008), which suggests that the poorer mental health reported among minoritized persons is attributable to the greater number of threats/stressors they experience compared to their majority group counterparts. Our results also align with the acculturation literature, which shows that immigrants’ acculturation experiences are additional stressors that could explain why they have a high level of threat and negative emotion (Berry, 2006). For example, immigrants may have less knowledge/access to the healthcare system, more language barriers, have less family support, experience more discrimination, and feel less secure about their cultural identity as they are still adapting and developing a sense of belonging to the new society (Bae, 2020; Lou, 2021; Usama et al., 2021; Ward et al., 2021). In summary, our findings suggest that the COVID-19 pandemic is likely to perpetuate, if not intensify, the pre-existing disparities and negative emotional experiences among immigrants, ethnic minorities, and Indigenous people (Escobar et al., 2021; Kim et al., 2021; Statistics Canada, 2020c).

Limitations

A few limitations in this research should be noted. First, the conclusions of this cross-sectional study should not be construed as demonstrating causal relations. A lack of data about threats and emotions before the COVID-19 pandemic prevented us from examining whether such group differences are driven by the impact of the pandemic or other factors. Second, other factors may explain the group differences in well-being, such as group differences in coping strategies and acculturation stress (Berry, 2006; Meyer et al., 2008; Ward et al., 2021). Third, this study focuses on the differences between established, dominant European Canadians, on the one hand, and minority immigrants, non-migrant ethnic minorities, and Indigenous people, on the other; we acknowledge that there are nuances in group categorizations (e.g., different subgroups of ethnic minority and European Canadians; see Statistics Canada, 2017) and within-group heterogeneity in perceived threat and well-being. Although we controlled for some demographic variables (sex, education, household income, age, COVID-19’s impact on income), generalization of the group comparisons should be cautious as it may conceal within-group variations. Fourth, although the survey was conducted across all of the provinces in Canada, a comparison with census data from Statistics Canada shows that it is not a representative sample. Some groups are underrepresented (Immigrants: 19.5% in this study vs. 21.5% in the population; Statistics Canada, 2017), and some are overrepresented (East Asians: 26% in this study vs. 6.2% in the population). Moreover, East Asians also represent 76% and 73% of the visible minority non-immigrant group and

immigrant group, respectively. Therefore, this self-selected, unrepresentative sample can also raise issues about the generalizability of the findings.

Conclusion

Immigrants, indigenous people, and ethnic minority members are disproportionately impacted by the COVID-19 pandemic. It is possible that such disparities, if not addressed, can have downstream consequences that continue to impact minority groups' well-being and widen the inequalities after the pandemic. This study adds to the timely and important literature about mental health disparities during the pandemic. We found that the mental health disparities could be explained partially by perceived threats. Therefore, support that focuses on reducing the perceived threat, including reducing or eliminating the actual threat (e.g., controlling the coronavirus, improving financial resources, and supporting social cohesion), may be important to reduce the well-being disparities related to minorities' burdens that are inflicted by the pandemic.

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Appendix A. Supporting information

Supplementary materials associated with this article can be found in the online version at [doi:10.1016/j.ijintrel.2022.04.006](https://doi.org/10.1016/j.ijintrel.2022.04.006).

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