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# Violent radicalization during the COVID-19 pandemic: at the intersection of gender, conspiracy theories and psychological distress

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### Abstract

The COVID-19 pandemic continues to pose a threat to health, economic stability and collective functioning. The related upsurge in psychological distress has fuelled the emergence of conspiracy theories regarding the origins of the virus. Worldwide, there is mounting evidence that these narratives have increased stigma and discrimination against diverse ethnic, age and occupational groups. However, the role of gender in the dynamics weaving together psychological distress, conspiracy theories and legitimation of violence toward other groups is still unknown. This paper addresses this knowledge gap, analysing a Canadian interprovincial survey conducted in November 2020. In total, 6003 individuals aged 18-35 years residing in large Canadian cities responded to an online survey administered in English and French between October 16 and November 17, 2020. A total of 4928 individuals with complete data on support for violent radicalization (VR), psychological distress, and endorsement of COVID-19 conspiracy theories were included in the analysis. This study indicates that for young Canadian adults, gender, endorsement of COVID-19 conspiracy theories and psychological distress, as measured by the Hopkins Symptom Checklist-25 (HSCL-25), have an interaction effect on support for VR, as measured by both the Sympathy for Violent Radicalization Scale (SyfoR) and the Radicalism Intention Scale (RIS) (both p-values <.001). While the magnitude of the association between support for VR and endorsement of COVID-19 conspiracy theories is greatest among individuals with scores of psychological distress above the clinical cut-off, there is a significant association between scores on support for VR and endorsement of COVID-19 conspiracy theories in both women and men, both above and below the psychological distress cut-off of the HSCL-25. Effective strategies to mitigate the relationship between violent radicalization and pandemic-related psychological distress must explicitly address gender differences in expression and management of psychological distress.

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### Introduction

The COVID-19 pandemic has a negative impact on the psychosocial well-being of individuals, families, and larger communities (Pfefferbaum & North, 2020). The pandemic's

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threat to health, economic stability, and social relationships led to feelings of uncertainty and threat to individual and collective functioning (Kruglanski et al., 2021). There is considerable evidence of the short and long-term mental health consequences of the pandemic related to psychosocial hardships such as social distancing, along with concrete losses including job and housing insecurity (Serafini et al., 2020; Tull et al., 2020; Vigo et al., 2020). Further, the upsurge in psychological distress, associated with obvious inequities and with scapegoating processes, has fuelled intergroup tensions and social polarization (Abrams et al., 2021). In the United States, the politicization of COVID-19 has led to highly polarized opinions and attitudes about the pandemic and government intervention efforts, supported by the emergence of conspiracy theories (Hart et al., 2020). Worldwide, there is mounting evidence that these narratives have increased stigma and discrimination against diverse ethnic, age and occupational groups (He et al., 2020; McKay et al., 2020; Miconi et al., 2021). However, the role of gender in the dynamics weaving together psychological distress, conspiracy theories and legitimation of violence toward other groups is still unknown. This paper addresses this knowledge gap, analysing a Canadian interprovincial survey conducted in November 2020.

# COVID conspiracy theories and violent radicalization

A defining feature of the COVID-19 pandemic is the proliferation of conspiracy theories related to its origins, prevention efforts, and consequences (Douglas, 2021). Conspiracy theories about the virus represent a wide range of beliefs, including mistrust of the government ('The government is misleading the public about the cause of the virus') or the existence of a malevolent other (e.g. 'Coronavirus is a bioweapon developed by China to destroy the West') (Earnshaw et al., 2020). These conspiracy theories can be understood as the product of, outlet for, and coping response to the insecurities, uncertainties, and psychological distress caused by the pandemic (Balmas et al., 2022; Grzesiak-Feldman, 2013; Šrol et al., 2021; van Mulukom, 2020). While the association between conspiracy beliefs and psychological distress has been documented extensively, the directionality has not been ascertained (Prooijen, 2022).

In its most extreme, conspiracy theories can lead to support for violent radicalization (VR). VR can be defined as an "individual or collective process whereby normal practices of



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dialogue, compromise and tolerance between groups/individuals with diverging interests are abandoned and one or more groups/individuals engage in violent actions to reach a specific goal" (Schmid, 2013). This definition of VR encompasses violence including terrorist activities as well as hate crimes and incidents. However, in the present study we do not focus on VR behaviours but on two different measures of support for VR, namely the Sympathy for Radicalization scale (SyfoR), which speaks to positive attitudes towards VR, as well as the Radicalism Intention Scale (RIS), which measures preparedness to take violent action. Although attitudes or intentions towards VR are not linearly linked with violent behaviours, population-wide attitudes and intentions towards VR contribute to the normalization and legitimization of violence, thus creating an environment where vulnerable individuals are at higher risk of engaging with ideologically motivated violence (Gøtzsche-Astrup et al., 2020; Weine et al., 2017). In a primary prevention perspective, finding ways to reduce support for VR in the general population is key to reduce the risk of violence in society in the short- and long-term.

There are emerging instances of support for, and engagement in, VR fuelled by COVID-19 conspiracy theories: most notably, the association of the virus with China has resulted in an increase in hate crimes and violence against individuals who identify as Asian (Tessler et al., 2020). In 2020, a believed association between COVID-19 and 5G technology may have motivated arson attacks against a telecommunication infrastructure in the United States (Jolley, 2020). More broadly, there is concern that COVID conspiracy theories and anti-Government sentiments during the pandemic are exacerbating pre-existing social and community tensions and fuelling endorsement and participation in extremist groups (Counter-Terrorism Committee Executive Directorate, 2021; Grossman, 2021; Marone, 2021; United Nations Institute for Training and Research, 2021).

# COVID-19 and gender

Gender is "a social construct regarding culture-bound conventions, roles and behaviours for, as well as relations between and among, women and men" (Krieger, 2003). To date, research on COVID-19 and gender has highlighted the disproportionate negative impact of the pandemic on women ranging from physical and mental health and wellbeing to



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economic insecurity (Fisher & Ryan, 2021). In addition to such gender inequalities, research indicates gender differences in terms of the perceived threat of COVID-19, with women more likely than men to view COVID as a serious health threat and to comply with prevention measures (Galasso et al., 2020; Oreffice & Quintana-Domeque, 2021). Thus far, studies of gender and COVID conspiracy theories have produced mixed results. In one study, women were less likely than men to endorse a wide range of conspiracy theories and overall endorse fewer conspiracy theories (Cassese et al., 2020); a different study found no such association (Stoica & Umbres, 2021).

In this study, we analyse gender, conspiracy theories and psychological distress as risk factors for VR using the intersectional framework proposed by Rouhani (2014), aiming to explore how gender, endorsement of COVID-19 conspiracy theories and psychological distress intersect as risk factors for support for VR. Based on results from previous surveys in Canada, we hypothesized that 1) men would report more support for VR and higher levels of endorsement of COVID-19 conspiracy theories than women, and 2) in both women and men, this relationship would be moderated by psychological distress.

# **Methods**

### Participants and procedure

In total, 6003 individuals aged 18-35 years, of which 54.8% were women, completed an on-line survey (See Table 1 for a detailed description of the full collected sample). For analyses, participants who reported 'gender-diverse' or had missing data for variables gender, support for VR, endorsement of COVID-19 conspiracy theories or psychological distress were excluded for an analysis sample size of n=4928.

The online survey targeted young adults in large cities in the Canadian provinces Quebec, Ontario and Alberta. We anticipated a sample size of 2000 participants in each province for a total of 6000 participants. Data collection took place between October 16, 2020 and November 17, 2020. The total response rate for the survey was 19%, and 19%, 18%, 19% and 22% in Calgary (Alberta), Edmonton (Alberta), Montreal (Quebec) and Toronto (Ontario), respectively. Inclusion criteria for participants were: aged between 18 and 35 years,



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and residents of Montreal, Toronto, Calgary or Edmonton. Exclusion criteria were: cognitive deficit or other disability that would prevent an individual from providing informed consent, or not speaking English or French (the languages in which the survey was administered). Participants are all registered in the AskingCanadians pool with Delvinia Technology Inc., an online data collection firm with access to more than one million Canadian professionals and consumers who are nationally representative by region and monitored against Statistics Canada. The firm emailed potential participants an introductory message with a hyperlink to the survey. Participants received a gift card valued up to 2.50\$ according to how much time they dedicated to the survey. Ethics approval was obtained from the Institutional Review Board of the McGill University Faculty of Medicine and Health before initiating the study, and all participants provided an electronic informed consent.

## Measures

# Support for violent radicalization

Our survey included two measures of support for VR: the Sympathies for Radicalisation scale (SyfoR) and the Radicalism Intention Scale (RIS). The SyfoR (Bhui et al., 2014) consists of questions related to nine acts of protest ranging from nonviolent (e.g. take part in non-violent political protests) to progressively more extreme acts (e.g. use of suicide bombs to fight against injustices). Subjects are asked to rate their attitude towards these acts on a 7-point Likert scale (1=completely condemn to 7=completely sympathise) with a higher score meaning greater support for VR. A total score (range 8-56) of sympathy for radicalization was used in this study (excluding the non-violent protest item). The SyfoR has been adapted to Canadian contexts. (Frounfelker et al., 2021) Cronbach's alpha in this study was 0.97. The RIS is a subscale of the validated Activism and Radicalism Intention Scales (ARIS). A previous validation with ethnically diverse populations yielded adequate internal consistency and discriminant validity (Moskalenko & McCauley, 2009). The RIS assesses an individual's willingness to support illegal and violent behaviour in the name of one's in-group or organisation. It is composed of four items rated on a 7-point Likert scale (1=completely disagree to 7=completely agree) with a higher total score indicating more



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support for VR. The total RIS score (range 4-28) was used in this study and Cronbach's alpha was 0.95. While both SyfoR and RIS are measures of support for VR, SyfoR scores indicate attitudes in support of VR (Frounfelker et al., 2021) and RIS scores indicate readiness to take violent action (Moskalenko & McCauley, 2009).

### Gender

Participants self-reported gender as woman, man or gender-diverse. Because of the very small size of this last group (n= 30), it is not included in the analyses.

# Endorsement of conspiracy theories

Endorsement of COVID-19-related conspiracy theories (CTs) was assessed with questions asking participants to rate, on a Likert scale from 1 = do not agree to 5 = agree completely, their level of agreement with two statements adapted from Freeman et al. (2020): 'The government is misleading the public about the cause of the Coronavirus' (CT\_GOV), and 'The Coronavirus is a bioweapon developed by China to destroy the West' (CT\_CH).

## Psychological distress

The Hopkins Symptom Checklist-25 (HSCL-25) is a self-report questionnaire aimed at screening for anxiety and depression. Items are rated on a Likert scale from 1 (not at all) to 4 (extremely), and a total score is obtained by computing the mean of all items. Higher scores indicate higher levels of symptoms of anxiety and depression. The clinical cut-off is set at 1.75 (score range from 1 to 4). This means that an individual with a score of 1.75 or more can be considered as having a level of psychological distress that can qualify for a diagnosis of anxiety and/or depression. The HSCL-25's psychometric qualities and transcultural validity have been well established among different cultural groups (Mollica et al., 1992; Moum, 1998). Cronbach's alpha in this study was 0.98.

## Sociodemographic variables

Participants self-reported age, city of residence (Montreal, Calgary, Edmonton, Toronto) and immigrant generation (first-, second- and third and above-generation



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immigrant). The financial problems variable was collected using the question "Presently in your household, are you experiencing difficulties related to lack of money?" (Not at all, Some, A moderate amount, A lot), and educational level was collected with the question "What is the highest grade you completed?" (High school or less, Technical degree or some college/university, University degree and above). Exposure to the COVID-19 virus was measured with the question "To your knowledge, have you or anyone around you (in your family, community, neighbourhood, group of friends, etc.) been diagnosed with COVID-19 in the past months?" (Yes, No, Prefer not to answer). Religiosity is the answer to the question "What is your current religion (or beliefs system)?" recoded to Yes = any religion, No = atheist/agnostic, Missing = prefer not to answer or no answer.

# Statistical analysis

For analyses, participants reporting as gender-diverse or with missing data for support for VR, gender, endorsement of COVID-19 CTs and psychological distress were excluded. All regressions were adjusted for socio-demographic variables age, city of residence, reported level of financial problems, educational level, immigrant generation, exposure to virus and religiosity. Missing socio-demographic data were imputed with multiple imputation chained equations, R-package *mice*, using 5 imputed datasets (van Buuren, 2011).

The intersectional analysis was carried out in three steps (Rouhani, 2014). Each step was carried out twice, using SyfoR and RIS respectively as the dependent variable. All models controlled for socio-demographic variables. First, directionality of the intersectional variables was studied using multivariable linear regression of support for VR on gender, endorsement of COVID-19 CTs and mean score of psychological distress, respectively. Second, simultaneity of the intersectional variables was investigated by a multivariable linear regression of support for VR with a model including all three variables. Third, multivariable linear regressions of support for VR including a three-level interaction term between endorsement of COVID-19 CT, psychological distress and gender, as well as all two-level interactions and main effects, were run for each CT respectively. Finally, the association between support for VR and endorsement of COVID-19 CT was presented in strata of gender above and below the psychological distress clinical threshold 1.75 for each CT.



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### **Results**

Participants identifying as men reported higher endorsement of COVID-19 CT scores than participants identifying as women. A majority of respondents (69.1%) reported no or little financial problems, but those who did also reported higher levels of endorsement of COVID-19 CTs. (Table 1, 2) Regarding educational level, endorsement of COVID-19 CTs was highest for individuals with a technical degree or some college/university, and endorsement of COVID-19 CTs was higher in younger individuals. Among the four cities, participants in Montreal reported the highest endorsement of COVID-19 CT scores. Non-immigrants (third or more generation immigrants) consistently reported higher endorsement of COVID-19 CTs than first or second generation. Almost half of the total sample (49.5%) reported psychological distress mean scores above the clinical cut-off 1.75.

To investigate the directionality of the variables of interest, we conducted a linear regression of support for VR on gender, endorsement of COVID-19 CTs and psychological distress respectively, in models adjusted for socio-demographic variables. All four variables were positively and significantly associated with SyfoR and RIS (Table 3, 4). Men had a higher risk of support for VR compared to women (SyfoR: β=5.28, SE=0.36, p-value <.001; RIS:  $\beta$ =2.08, SE=0.20, p-value <.001). Endorsement of the 'The Coronavirus is a bioweapon developed by China to destroy the West' (CT CH) conspiracy theory had a larger magnitude of association with support for VR than the 'The government is misleading the public about the cause of the Coronavirus' (CT GOV) conspiracy theory (SyfoR: β=4.18 and 3.61, SE=0.14 and p-value <.001 for both CTs; RIS:  $\beta$ =2.03 and 1.68, SE=0.08 and p-value <.001 for both CTs). Higher psychological distress was positively associated with SyfoR (β=8.58, SE=0.26, p-value <.001) and RIS ( $\beta$ =4.05, SE=0.15, p-value <.001). To study simultaneity of gender, endorsement of CTs and psychological distress, each of the COVID-19 CTs was entered into a model regressing support for VR on variables gender, CT, and psychological distress, adjusted for socio-demographic variables. All three variables remained statistically significant predictors of both support for VR measures, for both CTs (Table 5).



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When regressing support for VR using a model including a three-level interaction term between endorsement of COVID-19 CT, psychological distress and gender, as well as all two-level interactions and main effects, for each CT respectively, the statistical significance of all interaction terms indicate that the effects of variables gender, endorsement of COVID-19 CTs and psychological distress on support for VR are not independent. (Table 6)

Finally, the association between support for VR and endorsement of COVID-19 CTs was presented in strata of gender above and below the psychological distress clinical threshold 1.75 for each CT and measure of support for VR. (Table 7, Figure 1a,b,c,d) The significant interaction effects of gender and endorsement of CTs indicate that the association between support for VR and endorsement of CTs is moderated by gender, and the association between support for VR and endorsement of CTs has the largest magnitude in men with psychological distress above the clinical cut-off (SyfoR: CT\_GOV:  $\beta$ =4.77, SE=0.27, p-value <.001; CT\_CH:  $\beta$ =4.45, SE=0.26, p-value <.001; RIS: CT\_GOV  $\beta$ =2.16, SE=0.14, p-value <.001 and CT\_CH  $\beta$ =2.12, SE=0.14, p-value <.001). Nonetheless, in the stratum of women reporting psychological distress above the clinical cut-off, the association between support for VR and endorsement of CT\_CH, but not CT\_GOV, was of a magnitude similar to that in men reporting psychological distress above the clinical cut-off (SyfoR:  $\beta$ =3.89, SE=0.25, p-value <.001; RIS:  $\beta$ =1.89, SE=0.14 and p-value <.001).

### **Discussion**

This study shows that for young Canadian adults, gender, endorsement of COVID-19 CTs and psychological distress have a three-way interaction effect on different measures of support for VR, i.e. VR intentions (RIS) and attitudes (SyfoR). There is a significant positive association between support for VR and endorsement of COVID-19 CTs in both women and men, both above and below the psychological distress cut-off. The highest support for VR is expressed by men who report both psychological distress above the clinical cut-off and strong endorsement of either COVID-19 CT investigated in this study. In women who report psychological distress above the clinical cut-off, the magnitude of the association between support for VR and endorsement of CTs is similar to that in men for the CT "the Coronavirus



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is a bioweapon developed by China to destroy the West", but not for the CT "the government is misleading the public about the cause of the Coronavirus". These results underline that it is crucial to unpack gender differences in pathways towards support for VR in order to develop effective preventive strategies for mitigating the negative consequences of the COVID-19 pandemic.

Tangible consequences of the COVID-19 pandemic include an increase in stress in terms of economic and health insecurities, but also increased social unrest, the polarization of public opinion and politics, as well as the relative emotional deprivation stemming from the social distancing that was part of the effort to stop the propagation of the virus (Bartusevičius et al., 2021; Gloster et al., 2021; Nabavi, 2021). This multifaceted context has been repeatedly associated with very high levels of psychological distress in young adults (Balmas et al., 2022; Browning et al., 2021; Fruehwirth et al., 2021), as is also the case in this study. Although findings from one study indicate that being male is protective against psychological distress during the pandemic (Moccia et al., 2020), we found that 59.2% of women and 51.2% of men reported psychological distress levels above the cut-off for a clinical diagnosis of anxiety and/or depression. The association between psychological distress and endorsement of COVID-19 CTs suggests that for both men and women, endorsement of COVID-19 CTs may help to decrease distress by attributing the responsibility for the crisis to specific entities (minorities, the government, and others) and regaining some agency in the face of concrete alleged villains (Atlani-Duault et al., 2015; Atlani-Duault et al., 2020). The fact that psychological distress and endorsement of COVID-19 CTs are associated with support for VR in both women and men may indicate that in the pandemic context distress and helplessness may lead to attribution of blame which in turn can lead to hate and to legitimation of violence onto the group which is perceived as responsible of the adversity. Although the crosssectional nature of the data do not allow to infer causality, the literature on genocides indicate that hate can be one of the strategies decrease the feeling of threat and channel the perceived impotency in violent actions (Semelin, 2009). Furthermore, the interaction analysis reveals that men who report clinical levels of psychological distress also express greater support for VR, in terms of both attitudes (SyfoR) and intentions (RIS). This finding could be understood in the light of the large literature demonstrating that traditionally men and women tend to



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have different idioms of distress, where men have a tendency to externalize the distress through anger, while women tend to internalize the stress. (Gough et al., 2021). Women and men were affected by, and reacted to, the pandemic differently. Fisher and Ryan (2021) suggest that during the pandemic, gender roles have encouraged gendered patterns of reporting emotions, with women reporting more psychological distress while men reported more feelings of strength and determination (Hennekam & Shymko, 2020). However, feelings of helplessness in front of adversity may have challenged the masculine aspirations for strength, resulting in an increase in violence (Forbes et al., 2011; Usher et al., 2020). Thus, the context of the COVID -19 pandemic may have, by destabilizing traditional representations of masculinity, further accentuated the gender differences in idioms of distress mentioned above. Efforts to prevent and counter VR have often targeted men, and while studies indicate that men are more likely to express support for VR (Alcalá et al., 2017; Miconi et al., 2020) and be actively engaged in violent extremist movements than women, women are also recruited, radicalized, and participate in ideologically motivated extremist action (Bloom & Lokmanoglu, 2020; Corner & Gill, 2021; Morgades-Bamba et al., 2020). There is a growing body of research and focus on the part of national governments, international bodies such as the United Nations, and civil society organizations on risk and protective factors for women to become engaged with extremist groups (see for example UN Women, 2021; Rothermel, 2021). Pathways of radicalization may differ between men and women, and warrant closer examination (Chowdury Fink, 2013).

Although the present study focuses only on attitudes and intentions, it provides an opportunity for an examination of gender and VR in a general population youth sample. While women overall report lower levels of support for VR compared to men, for the CT explicitly pointing out China as both scapegoat and malevolent other, the magnitude of the significant association with support for VR was similar and large in both women and men. Thus, when believing in an identified external enemy, women and men show similar increase in support for resorting to violence. However, a more vaguely defined adversary who is still part of the extended ingroup seems to elicit a lesser inclination to support violence in women compared to men. These results do indeed indicate that the factors driving these associations are not the same in women and men. Likely, the underlying mechanisms are plural and



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complex. Gender psychology may provide a useful lens of interpretation, and future research should make use of theory on gendered in- and outgroup behaviours in investigating these gender differences further, as they may reveal insights that may be leveraged when designing strategies to prevent and counteract VR.

During societal crisis, tensions are not only expected but may be necessary to negotiate solutions and preserve democracy. In these processes what is coined as radical and even extremist often depends on the political stance that is preferred. Primary prevention of violent radicalization is the range of policies and programs which may decrease, in the general population, attitudes promoting that violence is a legitimate way to attains one's goal (Bartlett & Miller, 2012; Stephens & Sieckelinck, 2021). In the present study, we have chosen to use two measures of support for VR: SyfoR, which speaks to attitudes, as well as RIS, which measures preparedness to take violent action. Research on non-violent radicalization suggests that the participant, regardless of the underlying motivation, channels their desire for change into "focusing on what's right", meaning collectively accepted as moral in a democratic society rather than a problem-based approach legitimating violence (Reidy, 2018). Applying this to the pandemic context, alleviation of the psychological distress fuelling support for VR could be facilitated by channelling people's need to act, into collective support networks and community engagement rather than employing a punitive approach such as curfews.

# Implications for preventing and countering violent radicalization

Study findings have important implications for policy and programmatic interventions to mitigate attitudes which may eventually encourage violent radicalization. This may be achieved through proximal interventions, which directly target CT and the associated affects (psychological distress) and increase capacities to cope with the psychological distress or, as recommended by the UN through more distal avenues that focus on the factors generating the psychological distress. In terms of proximal interventions specific to the relationship between conspiracy theories and support for violent radicalization, existing research in culturally diverse contexts suggest that psychological inoculation may be effective in countering discourse inspiring violence, including in the online space (Braddock, 2022; Lewandowsky & van der Linden, 2021; Lewandowsky & Yesilada, 2021; Pilditch et al., 2022; Roozenbeek et



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al., 2022; Saleh et al., 2021). These more "content-focused" interventions that aim to debunk and discredit conspiracy theories may be relevant for primary prevention efforts, when their message is tailored to a specific group, in terms of culture, SES, age, and as our data suggest, gender. Yet, the medium- and long-term impact of these approaches need to be studied to see to which extent they shape-or not- the capacity of the individuals to resist further disinformation. From a prevention perspective, it is important to make sure individuals do not find themselves in the midst of an information-disinformation tornado which does not equip them with capacity to think critically and leave them with the impression of being manipulated on all sides, increasing their distrust in the system. Furthermore, our findings underline that cognitive misbeliefs such as conspiracy theories represent a risk factor especially when associated with psychological distress, thus indicating that VR prevention programs targeting beliefs and ideologies should be accompanied by socio-emotional support tackling the associated suffering/emotional experience. As such, more "audience-focused" intervention strategies may be warranted for deradicalization efforts. Such interventions focus on cognitive change (disenchantment with conspiracy theories) among individuals via mechanisms of increasing feelings of control and self-efficacy (Liu et al., 2022). In light of our findings, audience-focused interventions that include components specifically targeting psychosocial distress may be warranted as part of a larger which would address wellbeing in multiple ways at the population level.

### Limitations

The limitations of this study include the cross-sectional study design, the use of an internet survey and the associated response rate, as well as the overrepresentation of university-educated respondents.

Due to the cross-sectional study design we cannot make causal claims and, similarly to previous research, have not been able to ascertain the temporality of psychological distress and conspiracist ideation.(Levinsson, 2021; van Mulukom, 2020) Nonetheless, our results are consistent for both SyfoR and RIS where the positive association between support for VR and COVID-19 conspiracist ideation has the largest magnitude in men with a psychological



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distress mean score above the clinical cut-off (especially for CTs targeting the ingroup/government rather than the out-group/China).

On-line surveys present limitations when compared to face-to-face interviews, such as misinterpretation of study questions. However, an online survey is advantageous for research specific to conspiracy theories and VR in that it guarantees anonymity, thereby increasing the likelihood that subjects will provide accurate, sensitive information. Further, it is attractive to the 18-35 age group and cultural communities who may distrust institutions and authorities (van Gelder et al., 2010; Wright, 2005). Several studies have examined the validity and test-retest reliability of online self-administered survey instruments and found that overall psychometric qualities were satisfactory and comparable to traditional versions. Nonetheless, the overall response rate in this study was 19%. This entails considerable risk of selection bias that could over- or underestimate the relationship between COVID-19 conspiracy theories and VR. For instance, if people who endorse conspiracy theories and support for VR were less likely to complete the survey, we may be underestimating the relationship between these variables. However, we obtained a full range of results for both support for VR and endorsement of COVID-19 conspiracy theories items.

Finally, 48.2% of survey respondents reported having university-level education. This is not representative for the provinces where the survey was completed, nor for Canada in general, thus limiting the generalizability of results to young adults Canada-wide.

## Conclusion and recommendations for further research

The mental health effects of the COVID-19 pandemic are expected to linger beyond the end of the pandemic (Nabavi, 2021). According to literature, men and women cope with psychological distress in different ways, and these patterns may be exacerbated and/or shifted by large social crisis like the pandemic. The results of this study highlight that effective interventions and policies aimed at protecting against support for VR must not only acknowledge gender differences in coping with psychological distress but explicitly monitor them in order to address them effectively.



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As we move away from the acute phase of COVID-19, attention is shifting from the urgent need to stop the spread of the virus, to evaluating the health and social effects of the pandemic in the short- and long-term. Big Events theory proposes a framework of non-deterministic pathways. Future research on VR in the wake of the pandemic may adopt this framework to investigate how multiple currents came together in 2020-21 to create a "perfect storm" with the pandemic at its centre (Bartusevičius et al., 2021; Friedman et al., 2021). This framework, in particular when adding a gender lens, is well suited to examine complex phenomena in that it aims for understanding how simultaneous underlying processes fuel behaviours, including support for VR.



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## References

- Abrams, D., Lalot, F., & Hogg, M. A. (2021). Intergroup and intragroup dimensions of COVID-19: A social identity perspective on social fragmentation and unity. *Group Processes & Intergroup Relations*, 24(2), 201-209. https://doi.org/10.1177/1368430220983440
- Alcalá, H. E., Sharif, M. Z., & Samari, G. (2017). Social determinants of health, violent radicalization, and terrorism: a public health perspective. *Health equity*, 1(1), 87-95.
- Atlani-Duault, L., Mercier, A., Rousseau, C., Guyot, P., & Moatti, J.-P. (2015). Blood libel rebooted: traditional scapegoats, online media, and the H1N1 epidemic. *Culture, Medicine, and Psychiatry*, 39(1), 43-61.
- Atlani-Duault, L., Ward, J. K., Roy, M., Morin, C., & Wilson, A. (2020). Tracking online heroisation and blame in epidemics. *The Lancet Public Health*, *5*(3), e137-e138.
- Balmas, M., Harel, T. O., & Halperin, E. (2022). I hate you when I am anxious: Anxiety during the COVID-19 epidemic and ideological hostility. *Journal of Applied Social Psychology*, 52(11), 1081-1093. https://doi.org/https://doi.org/10.1111/jasp.12914
- Bartlett, J., & Miller, C. (2012). The Edge of Violence: Towards Telling the Difference Between Violent and Non-Violent Radicalization. *Terrorism and Political Violence*, 24(1), 1-21. https://doi.org/10.1080/09546553.2011.594923
- Bartusevičius, H., Bor, A., Jørgensen, F., & Petersen, M. B. (2021). The Psychological Burden of the COVID-19 Pandemic Is Associated With Antisystemic Attitudes and Political Violence. *Psychological Science*, *32*(9), 1391-1403. https://doi.org/10.1177/09567976211031847
- Bhui, K., Warfa, N., & Jones, E. (2014). Is violent radicalisation associated with poverty, migration, poor self-reported health and common mental disorders? *PloS one*, *9*(3), e90718.
- Bloom, M., & Lokmanoglu, A. (2020). From Pawn to Knights: The Changing Role of Women's Agency in Terrorism? *Studies in Conflict & Terrorism*, 1-16. https://doi.org/10.1080/1057610X.2020.1759263
- Braddock, K. (2022). Vaccinating Against Hate: Using Attitudinal Inoculation to Confer Resistance to Persuasion by Extremist Propaganda. *Terrorism and Political Violence*, 34(2), 240-262. https://doi.org/10.1080/09546553.2019.1693370
- Browning, M. H. E. M., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., Cloutier, S., Vu, T. M., Thomsen, J., Reigner, N., Metcalf, E. C., D'Antonio, A., Helbich, M., Bratman, G. N., & Alvarez, H. O. (2021). Psychological



ISSN: 2363-9849

impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PloS one*, *16*(1), e0245327. https://doi.org/10.1371/journal.pone.0245327

- Cassese, E. C., Farhart, C. E., & Miller, J. M. (2020). Gender Differences in COVID-19 Conspiracy Theory Beliefs. *Politics & Gender*, 1-10. https://doi.org/10.1017/S1743923X20000409
- Chowdury Fink, N., Barakat, R., Shetret, L. (2013). The Roles of Women in Terrorism, Conflict and Violent Extremism: Lessons for the United Nations and international actors. In: Center on Global Counterterrorism Cooperation.
- Corner, E., & Gill, P. (2021). Psychological distress and terrorist engagement: Measuring, correlating, and sequencing its onset with negative life events, social factors, and protective factors. *Transcult Psychiatry*, *58*(5), 697-711. https://doi.org/10.1177/13634615211023669
- Counter-Terrorism Committee Executive Directorate. (2021). *Update on the impact of the COVID-19 pandemic on terrorism, counter-terrorism and countering violent extremism*. https://www.un.org/securitycouncil/ctc/content/update-impact-covid-19-pandemic-terrorism-counter-terrorism-and-countering-violent-extremism
- Douglas, K. M. (2021). COVID-19 conspiracy theories. *Group Processes & Intergroup Relations*, 24(2), 270-275. https://doi.org/10.1177/1368430220982068
- Earnshaw, V. A., Eaton, L. A., Kalichman, S. C., Brousseau, N. M., Hill, E. C., & Fox, A. B. (2020). COVID-19 conspiracy beliefs, health behaviors, and policy support. *Translational behavioral medicine*, 10(4), 850-856. https://doi.org/10.1093/tbm/ibaa090
- Fisher, A. N., & Ryan, M. K. (2021). Gender inequalities during COVID-19. *Group Processes & Intergroup Relations*, 24(2), 237-245. https://doi.org/10.1177/1368430220984248
- Forbes, G. B., Collinsworth, L. L., Zhao, P., Kohlman, S., & LeClaire, J. (2011). Relationships among individualism--collectivism, gender, and ingroup/outgroup status, and responses to conflict: a study in China and the United States. *Aggress Behav*, *37*(4), 302-314. https://doi.org/10.1002/ab.20395
- Freeman, D., Waite, F., Rosebrock, L., Petit, A., Causier, C., East, A., Jenner, L., Teale, A.-L., Carr, L., Mulhall, S., Bold, E., & Lambe, S. (2020). Coronavirus conspiracy beliefs, mistrust, and compliance with government guidelines in England. *Psychological Medicine*, 1-13. https://doi.org/10.1017/S0033291720001890



- Friedman, S. R., Mateu-Gelabert, P., Nikolopoulos, G. K., Cerdá, M., Rossi, D., Jordan, A. E., Townsend, T., Khan, M. R., & Perlman, D. C. (2021). Big Events theory and measures may help explain emerging long-term effects of current crises. *Glob Public Health*, *16*(8-9), 1167-1186. https://doi.org/10.1080/17441692.2021.1903528
- Frounfelker, R. L., Frissen, T., Miconi, D., Lawson, J., Brennan, R. T., d'Haenens, L., & Rousseau, C. (2021). Transnational evaluation of the Sympathy for Violent Radicalization Scale: Measuring population attitudes toward violent radicalization in two countries. *Transcultural Psychiatry*, 13634615211000550. https://doi.org/10.1177/13634615211000550
- Fruehwirth, J. C., Biswas, S., & Perreira, K. M. (2021). The Covid-19 pandemic and mental health of first-year college students: Examining the effect of Covid-19 stressors using longitudinal data. *PloS one*, *16*(3), e0247999. https://doi.org/10.1371/journal.pone.0247999
- Galasso, V., Pons, V., Profeta, P., Becher, M., Brouard, S., & Foucault, M. (2020). Gender differences in COVID-19 attitudes and behavior: Panel evidence from eight countries. *Proceedings of the National Academy of Sciences*, *117*(44), 27285. https://doi.org/10.1073/pnas.2012520117
- Gloster, A. T., Lamnisos, D., Lubenko, J., Presti, G., Squatrito, V., Constantinou, M., Nicolaou, C., Papacostas, S., Aydın, G., Chong, Y. Y., Chien, W. T., Cheng, H. Y., Ruiz, F. J., Garcia-Martin, M. B., Obando-Posada, D. P., Segura-Vargas, M. A., Vasiliou, V. S., McHugh, L., Höfer, S., Baban, A., Dias Neto, D., Nunes da Silva, A., Monestès, J.-L., Alvarez-Galvez, J., Paez-Blarrina, M., Montesinos, F., Valdivia-Salas, S., Ori, D., Kleszcz, B., Lappalainen, R., Ivanović, I., Gosar, D., Dionne, F., Merwin, R. M., Kassianos, A. P., & Karekla, M. (2021). Impact of COVID-19 pandemic on mental health: An international study. *PloS one*, *15*(12), e0244809. https://doi.org/10.1371/journal.pone.0244809
- Gøtzsche-Astrup, O., van den Bos, K., & Hogg, M. A. (2020). Radicalization and violent extremism: Perspectives from research on group processes and intergroup relations. *Group Processes & Intergroup Relations*, 23(8), 1127-1136. https://doi.org/10.1177/1368430220970319
- Gough, B., Robertson, S., & Luck, H. (2021). Engendered Expressions of Anxiety: Men's Emotional Communications With Women and Other Men [Original Research]. *Frontiers in Sociology*, *6*(138). https://doi.org/10.3389/fsoc.2021.697356
- Grossman, M. (2021). How has COVID-19 changed the violent extremist landscape? *Security Review*. Retrieved Feb 14, 2022, from https://crestresearch.ac.uk/comment/how-has-covid-19-changed-the-violent-extremist-landscape/



- Grzesiak-Feldman, M. (2013). The effect of high-anxiety situations on conspiracy thinking. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*, 32, 100-118. https://doi.org/10.1007/s12144-013-9165-6
- Hart, P. S., Chinn, S., & Soroka, S. (2020). Politicization and Polarization in COVID-19 News Coverage. *Science Communication*, 42(5), 679-697. https://doi.org/10.1177/1075547020950735
- He, J., He, L., Zhou, W., Nie, X., & He, M. (2020). Discrimination and Social Exclusion in the Outbreak of COVID-19. *International journal of environmental research and public health*, *17*(8), 2933. https://doi.org/10.3390/ijerph17082933
- Hennekam, S., & Shymko, Y. (2020). Coping with the COVID-19 crisis: force majeure and gender performativity. *Gender, Work & Organization*, 27(5), 788-803. https://doi.org/https://doi.org/10.1111/gwao.12479
- Jolley, D., & Paterson, J. L. (2020). Pylons ablaze: Examining the role of 5G COVID-19 conspiracy beliefs and support for violence. *British journal of social psychology*, 59(3), 628-640.
- Krieger, N. (2003). Genders, sexes, and health: what are the connections—and why does it matter? *International Journal of Epidemiology*, *32*(4), 652-657. https://doi.org/10.1093/ije/dyg156
- Kruglanski, A. W., Molinario, E., & Lemay, E. P. (2021). Coping with COVID-19-induced threats to self. *Group Processes & Intergroup Relations*, 24(2), 284-289. https://doi.org/10.1177/1368430220982074
- Levinsson, A., Miconi, D., Li, Z.-Y., Frounfelker, R.L., Rousseau, C. (2021). Conspiracy theories, psychological distress, and sympathy for violent radicalization in young adults during the COVID-19 pandemic. *Submitted*.
- Lewandowsky, S., & van der Linden, S. (2021). Countering Misinformation and Fake News Through Inoculation and Prebunking. *European Review of Social Psychology*, *32*(2), 348-384. https://doi.org/10.1080/10463283.2021.1876983
- Lewandowsky, S., & Yesilada, M. (2021). Inoculating against the spread of Islamophobic and radical-Islamist disinformation. *Cognitive Research: Principles and Implications*, 6(1), 57. https://doi.org/10.1186/s41235-021-00323-z
- Liu, T., Guan, T., & Yuan, R. (2022). Can Debunked Conspiracy Theories Change Radicalized Views? Evidence from Racial Prejudice and Anti-China Sentiment Amid the COVID-19 Pandemic. *J Chin Polit Sci*, 1-33. https://doi.org/10.1007/s11366-022-09832-0



- Marone, F. (2021). Hate in the time of coronavirus: exploring the impact of the COVID-19 pandemic on violent extremism and terrorism in the West. *Security Journal*. https://doi.org/10.1057/s41284-020-00274-y
- McKay, D., Heisler, M., Mishori, R., Catton, H., & Kloiber, O. (2020). Attacks against health-care personnel must stop, especially as the world fights COVID-19. *The Lancet*, 395(10239), 1743-1745.
- Miconi, D., Li, Z. Y., Frounfelker, R. L., Venkatesh, V., & Rousseau, C. (2021). Socio-cultural correlates of self-reported experiences of discrimination related to COVID-19 in a culturally diverse sample of Canadian adults. *International Journal of Intercultural Relations*, 81, 176-192. https://doi.org/https://doi.org/10.1016/j.ijintrel.2021.01.013
- Miconi, D., Oulhote, Y., Hassan, G., & Rousseau, C. (2020). Sympathy for violent radicalization among college students in Quebec (Canada): The protective role of a positive future orientation. *Psychology of Violence*.
- Moccia, L., Janiri, D., Pepe, M., Dattoli, L., Molinaro, M., De Martin, V., Chieffo, D., Janiri, L., Fiorillo, A., & Sani, G. (2020). Affective temperament, attachment style, and the psychological impact of the COVID-19 outbreak: an early report on the Italian general population. *Brain, behavior, and immunity*, 87, 75-79.
- Mollica, R. F., Caspi-Yavin, Y., Bollini, P., Truong, T., Tor, S., & Lavelle, J. (1992). The Harvard trauma questionnaire: Validating a cross-cultural instrument for measuring torture, trauma, and post-traumatic stress disorder in Indochinese refugees. *Journal of Nervous and Mental Disease*, 180(2), 111-116.
- Morgades-Bamba, C. I., Raynal, P., & Chabrol, H. (2020). Exploring the Radicalization Process in Young Women. *Terrorism and Political Violence*, *32*(7), 1439-1457. https://doi.org/10.1080/09546553.2018.1481051
- Moskalenko, S., & McCauley, C. (2009). Measuring political mobilization: The distinction between activism and radicalism. *Terrorism and Political Violence*, 21(2), 239-260.
- Moum, T. (1998). Mode of administration and interviewer effects in self-reported symptoms of anxiety and depression. *Social Indicators Research*, *45*, 279-318.
- Nabavi, N. (2021). Covid-19: Pandemic will cast "a long shadow" on mental health, warns England's CMO. *BMJ*, *373*, n1655. https://doi.org/10.1136/bmj.n1655
- Oreffice, S., & Quintana-Domeque, C. (2021). Gender inequality in COVID-19 times: evidence from UK prolific participants. *Journal of Demographic Economics*, 87(2), 261-287. https://doi.org/10.1017/dem.2021.2



- Pfefferbaum, B., & North, C. S. (2020). Mental Health and the Covid-19 Pandemic. *New England Journal of Medicine*, *383*(6), 510-512. https://doi.org/10.1056/NEJMp2008017
- Pilditch, T. D., Roozenbeek, J., Madsen, J. K., & van der Linden, S. (2022). Psychological inoculation can reduce susceptibility to misinformation in large rational agent networks. *Royal Society Open Science*, *9*(8), 211953. https://doi.org/doi:10.1098/rsos.211953
- Prooijen, J. V. (2022). Psychological benefits of believing conspiracy theories. *Curr Opin Psychol*, 47, 101352. https://doi.org/10.1016/j.copsyc.2022.101352
- Reidy, K. (2018). Radicalization as a Vector: Exploring Non-Violent and Benevolent Processes of Radicalization. *Journal for Deradicalization*, 249-294.
- Roozenbeek, J., van der Linden, S., Goldberg, B., Rathje, S., & Lewandowsky, S. (2022). Psychological inoculation improves resilience against misinformation on social media. *Sci Adv*, 8(34), eabo6254. https://doi.org/10.1126/sciadv.abo6254
- Rothermel, A.-K. (2021). Gender at the crossroads: the role of gender in the UN's global counterterrorism reform at the humanitarian-development-peace nexus. *Critical Studies on Terrorism*, 1-26. https://doi.org/10.1080/17539153.2021.1969061
- Rouhani, S. (2014). Intersectionality-informed quantitative research: A primer.
- Saleh, N. F., Roozenbeek, J. O. N., Makki, F. A., McClanahan, W. P., & Van Der Linden, S. (2021). Active inoculation boosts attitudinal resistance against extremist persuasion techniques: a novel approach towards the prevention of violent extremism. *Behavioural Public Policy*, 1-24. https://doi.org/10.1017/bpp.2020.60
- Schmid, A. P. (2013). Radicalisation, De-radicalisation, Counter-radicalisation: A Conceptual Discussion and Literature Review. *ICCT Research Paper*, 97, 22.
- Semelin, J. (2009). Purify and Destroy (C. Schoch, Trans.). Columbia University Press.
- Serafini, G., Parmigiani, B., Amerio, A., Aguglia, A., Sher, L., & Amore, M. (2020). The psychological impact of COVID-19 on the mental health in the general population. *QJM: monthly journal of the Association of Physicians*, *113*(8), 531-537. https://doi.org/10.1093/qjmed/hcaa201
- Šrol, J., Ballová Mikušková, E., & Čavojová, V. (2021). When we are worried, what are we thinking? Anxiety, lack of control, and conspiracy beliefs amidst the COVID-19 pandemic. *Applied cognitive psychology*, 10.1002/acp.3798. https://doi.org/10.1002/acp.3798



- Stephens, W., & Sieckelinck, S. (2021). Resiliences to radicalization: Four key perspectives. *International Journal of Law, Crime and Justice*, 66, 100486. https://doi.org/https://doi.org/10.1016/j.ijlcj.2021.100486
- Stoica, C. A., & Umbreş, R. (2021). Suspicious minds in times of crisis: determinants of Romanians' beliefs in COVID-19 conspiracy theories. *European Societies*, 23(sup1), S246-S261. https://doi.org/10.1080/14616696.2020.1823450
- Tessler, H., Choi, M., & Kao, G. (2020). The Anxiety of Being Asian American: Hate Crimes and Negative Biases During the COVID-19 Pandemic. *American journal of criminal justice : AJCJ*, 1-11. https://doi.org/10.1007/s12103-020-09541-5
- Tull, M. T., Edmonds, K. A., Scamaldo, K. M., Richmond, J. R., Rose, J. P., & Gratz, K. L. (2020). Psychological Outcomes Associated with Stay-at-Home Orders and the Perceived Impact of COVID-19 on Daily Life. *Psychiatry research*, *289*, 113098-113098. https://doi.org/10.1016/j.psychres.2020.113098
- UN Women. (2021). Civil society voices on the gendered dimensions of violent extremism and counter-terrorism responses.
- United Nations Institute for Training and Research. (2021). *Impact of COVID-19 on Violent Extremism and Terrorism*. https://unitar.org/learning-solutions/publications/impact-covid-19-violent-extremism-and-terrorism
- Usher, K., Bhullar, N., Durkin, J., Gyamfi, N., & Jackson, D. (2020). Family violence and COVID-19: Increased vulnerability and reduced options for support. *International journal of mental health nursing*, 29(4), 549-552. https://doi.org/10.1111/inm.12735
- van Buuren, S., Groothuis-Oudshoorn, K. (2011). mice: Multivariate Imputation by Chained Equations in R. *Journal of Statistical Software*, 45(3). https://doi.org/10.18637/jss.v045.i03
- van Gelder, M. M., Bretveld, R. W., & Roeleveld, N. (2010). Web-based questionnaires: the future in epidemiology? *American journal of epidemiology*, 172(11), 1292-1298.
- van Mulukom, V., Pummerer, L.J., Alper, S., Bai, H.M., Cavojova, V., Farias, J., Kay, C.S., Lazaervic, L.B., Lobato, E.J.C., Marinthe, G., Banai, I.P., Srol, J., Zezelj, I. (2020). Antecedents and consequences of COVID-19 conspiracy theories: a rapid review of the evidence. *Pre-print*.
- Vigo, D., Patten, S., Pajer, K., Krausz, M., Taylor, S., Rush, B., Raviola, G., Saxena, S., Thornicroft, G., & Yatham, L. N. (2020). Mental Health of Communities during the COVID-19 Pandemic. *The Canadian Journal of Psychiatry*, 65(10), 681-687. https://doi.org/10.1177/0706743720926676



ISSN: 2363-9849

Weine, S., Eisenman, D. P., Kinsler, J., Glik, D. C., & Polutnik, C. (2017). Addressing violent extremism as public health policy and practice. *Behavioral Sciences of Terrorism and Political Aggression*, 9(3), 208-221. https://doi.org/10.1080/19434472.2016.1198413

Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer Mediated Communication*, 10(3), 00-00.



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# Annex

| Variable                                      | n (%)         |
|---|---------------|
| Self-reported gender                          |               |
| Woman   | 3292 (54.8%)  |
| Man   | 2646 (44.1%)  |
| Gender-diverse                                | 30 (0.5%)     |
| Missing                                       | 35 (0.6%)     |
| Psychological distress                        |               |
| ≤1.75   | 2441 (40.7%)  |
| >1.75   | 2974 (49.5%)  |
| Missing                                       | 588 (9.8%)    |
| City  |               |
| Montreal                                      | 2000 (33.3%)  |
| Calgary                                       | 1002 (16.7%)  |
| Edmonton                                      | 1000 (16.7%)  |
| Toronto                                       | 2001 (33.3%)  |
| Financial problems                            |               |
| Not at all                                    | 1963 (32.70%) |
| A little                                      | 2184 (36.4%)  |
| Moderate                                      | 896 (14.9%)   |
| A lot   | 769 (12.8%)   |
| Missing                                       | 191 (3.2%)    |
| Education                                     |               |
| High school or less                           | 1267 (21.1%)  |
| Apprenticeship, technical institute, trade or |               |
| vocational school, college, CEGEP or other    | 1741 (29.0%)  |
| non-university certificate or diploma,        | 2002 (40.20)  |
| University certificate, diploma or degree     | 2892 (48.2%)  |
| Missing                                       | 103 (1.7%)    |
| Immigration status                            |               |
| First generation                              | 1454 (24.2%)  |
| Second generation                             | 1577 (26.3%)  |
| Third generation or more                      | 2872 (47.8%)  |
| Missing                                       | 100 (1.7%)    |
| Religiosity                                   |               |
| Yes   | 3281 (54.7%)  |
| No  | 2402 (40.0%)  |
| Missing                                       | 320 (5.3%)    |
| Exposure to COVID-19 virus                    |               |
| Yes   | 2130 (35.5%)  |



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No 3762 (62.7%)
Missing 111 (1.8%)

|   | mean (SD) min, max, % missing   |
|---|---------------------------------|
| Age   | 26.72 (4.53) 18.00, 35.00, 0.0% |
| Psychological distress                      | 2.00 (0.79) 1.00, 4.00, 9.8%    |
| Conspiracy theory CT_GOV                    | 2.30 (1.38) 1.00, 5.00, 4.2%    |
| Conspiracy theory CT_CH                     | 2.00 (1.36) 1.00, 5.00, 5.1%    |
| Sympathy for violent radicalisation (SyfoR) | 23.72 (13.86) 8.00, 56.00, 7.9% |
| Radicalisation Intention Scale (RIS)        | 13.87 (7.40) 4.00, 28.00, 9.3%  |

Note. SD: standard deviation

Table 2. Distribution of endorsement of COVID-19 conspiracy theories and psychological distress in analysed sample

| <del>_</del>              | CT_GOV: The government is me the public about of the Coronavir n (%) | the cause | CT_CH: Coror<br>a bioweapon d<br>by China to de<br>West<br>n (%) | eveloped | Psychologica | l distress |
|---------------------------|--|-----------|--|----------|--------------|------------|
| Endorsement of conspiracy | II (%)   |           | 11 (%)   |          |              |            |
| theory                    |  |           |  |          |              |            |
| Do not agree (1)          | 2051 (41.6%)   |           | 2824 (57.3%)   |          |              |            |
| Agree a little (2)        | 1036 (21.0%)   |           | 690 (14.0%)  |          |              |            |
| Agree moderately (3)      | 764 (15.5%)  |           | 569 (11.5%)  |          |              |            |
| Agree a lot (4)           | 551 (11.2%)  |           | 379 (7.7%)   |          |              |            |
| Agree completely (5)      | 526 (10.7%)  |           | 466 (9.5%)   |          |              |            |
|                           | mean (SD)  | p-value   | mean (SD)  | p-value  | mean (SD)    | p-value    |
| Self-reported gender      |  | <.001     |  | <.001    |              | 0.38       |
| Woman                     | 2.16 (1.30)  |           | 1.80 (1.22)  |          | 2.03 (0.71)  |            |
| Man                       | 2.43 (1.45)  |           | 2.20 (1.48)  |          | 2.01 (0.86)  |            |
| Age                       |  | <.001     |  | <.001    |              | <.001      |
| 18-25                     | 2.39 (1.39)  |           | 2.07 (1.42)  |          | 2.17 (0.83)  |            |
| 26-35                     | 2.22 (1.37)  |           | 1.93 (1.32)  |          | 1.93 (0.76)  |            |
| City of residence         |  | <.001     |  | <.001    |              | <.001      |
| Calgary                   | 2.17 (1.34)  |           | 1.87 (1.26)  |          | 1.90 (0.73)  |            |
| Edmonton                  | 2.27 (1.25)  |           | 2.02 (1.41)  |          | 2.08 (0.82)  |            |
| Montreal                  | 2.59 (1.45)  |           | 2.23 (1.50)  |          | 2.19 (0.87)  |            |
| Toronto                   | 2.02 (1.18)  |           | 1.75 (1.17)  |          | 1.86 (0.68)  |            |
| Financial problems        | ` '  | <.001     | , , ,  | <.001    |              | <.001      |
| Not at all                | 1.88 (1.18)  |           | 1.52 (0.98)  |          | 1.62 (0.58)  |            |
| A little                  | 2.15 (1.25)  |           | 1.86 (1.24)  |          | 1.95 (0.66)  |            |
| 11 111110                 | (/   |           | 1  |          |              |            |



| Moderate                   | 2.70 (1.44) |       | 2.46 (1.48) |       | 2.40 (0.79) |       |
|----------------------------|-------------|-------|-------------|-------|-------------|-------|
| A lot                      | 3.25 (1.56) |       | 2.99 (1.68) |       | 2.81 (0.86) |       |
| Education                  |             | <.001 |             | <.001 |             | <.001 |
| High school or less        | 2.37 (1.32) |       | 1.97 (1.27) |       | 2.10 (0.75) |       |
| Vocational school^         | 2.74 (1.27) |       | 2.41 (1.51) |       | 2.26 (0.88) |       |
| University^^               | 1.99 (1.27) |       | 1.74 (1.24) |       | 1.85 (0.71) |       |
| Immigrant status           |             | <.001 |             | <.001 |             | <.001 |
| First generation           | 2.15 (1.28) |       | 1.90 (1.27) |       | 1.81 (0.65) |       |
| Second generation          | 2.13 (1.28) |       | 1.79 (1.20) |       | 1.92 (0.73) |       |
| Third generation or more   | 2.42 (1.46) |       | 2.11 (1.46) |       | 2.17 (0.86) |       |
| Religiosity                |             | <.001 |             | <.001 |             | <.001 |
| Yes                        | 2.56 (1.46) |       | 2.33 (1.49) |       | 2.16 (0.87) |       |
| No                         | 1.92 (1.18) |       | 1.53 (1.01) |       | 1.84 (0.64) |       |
| Exposure to COVID-19 virus |             | <.001 |             | <.001 |             | <.001 |
| Yes                        | 2.53 (1.49) |       | 2.23 (1.51) |       | 2.28 (0.87) |       |
| No                         | 2.14 (1.29) |       | 1.83 (1.24) |       | 1.86 (0.70) |       |

Note. ^: Apprenticeship, technical institute, trade- or vocational school, college, CEGEP or other non-university certificate or diploma; ^^: University certificate, diploma or degree; SD: standard deviation



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Table 3. Regression of SyfoR on gender, endorsement of conspiracy theories CT\_GOV and CT\_CH, and psychological distress respectively, adjusted for socio-demographic variables

| Outcome                                |       | SyfoR | _     |       | SyfoR |       |       | SyfoR |       |       | SyfoI | ₹       |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
|  |       |       | p-    |       |       | p-    |       |       | p-    |       |       |         |
| Variable                               | β     | SE    | value | β     | SE    | value | β     | SE    | value | β     | SE    | p-value |
| (Intercept)                            | 26.15 | 1.22  | <.001 | 20.06 | 1.96  | <.001 | 21.71 | 1.16  | <.001 | 8.63  | 1.25  | <.001   |
| Gender (men vs women)                  | 5.28  | 0.36  | <.001 |       |       |       |       |       |       |       |       |         |
| CT_GOV                                 |       |       |       | 3.61  | 0.14  | <.001 |       |       |       |       |       |         |
| CT_CH                                  |       |       |       |       |       |       | 4.18  | 0.14  | <.001 |       |       |         |
| Psychological distress                 |       |       |       |       |       |       |       |       |       | 8.58  | 0.26  | <.001   |
| Age                                    | -0.47 | 0.04  | <.001 | -0.40 | 0.04  | <.001 | -0.41 | 0.04  | <.001 | -0.23 | 0.04  | <.001   |
| City (ref = Montreal)                  |       |       |       |       |       |       |       |       |       |       |       |         |
| Calgary                                | -0.41 | 0.56  | 0.465 | 0.81  | 0.53  | 0.132 | 0.85  | 0.52  | 0.104 | 1.48  | 0.52  | 0.004   |
| Edmonton                               | -0.06 | 0.55  | 0.898 | 1.01  | 0.53  | 0.057 | 0.82  | 0.52  | 0.115 | 0.86  | 0.51  | 0.093   |
| Toronto                                | -0.40 | 0.48  | 0.403 | 0.27  | 0.46  | 0.562 | 0.24  | 0.45  | 0.596 | 0.12  | 0.45  | 0.796   |
| Financial problems                     |       |       |       |       |       |       |       |       |       |       |       |         |
| (ref = none)                           |       |       |       |       |       |       |       |       |       |       |       |         |
| A little                               | 3.21  | 0.43  | <.001 | 2.31  | 0.41  | <.001 | 1.87  | 0.40  | <.001 | 0.35  | 0.41  | 0.384   |
| Moderate                               | 8.06  | 0.58  | <.001 | 5.61  | 0.56  | <.001 | 4.77  | 0.56  | <.001 | 2.05  | 0.57  | <.001   |
| A lot                                  | 11.86 | 0.61  | <.001 | 7.65  | 0.60  | <.001 | 6.64  | 0.60  | <.001 | 2.75  | 0.62  | <.001   |
| <b>Education</b> (ref = HS or less)    |       |       |       |       |       |       |       |       |       |       |       |         |
| Voc school, CEGEP^                     | 3.68  | 0.55  | <.001 | 2.68  | 0.53  | <.001 | 2.22  | 0.52  | <.001 | 2.46  | 0.51  | <.001   |
| University^^                           | 2.50  | 0.53  | <.001 | 2.80  | 0.51  | <.001 | 2.18  | 0.50  | <.001 | 2.00  | 0.49  | <.001   |
| Immigrant generation                   |       |       |       |       |       |       |       |       |       |       |       |         |
| (ref = 3rd or more)                    |       |       |       |       |       |       |       |       |       |       |       |         |
| First                                  | -3.56 | 0.47  | <.001 | -3.22 | 0.45  | <.001 | -3.20 | 0.44  | <.001 | -1.50 | 0.44  | <.001   |
| Second                                 | -1.10 | 0.47  | 0.018 | -0.85 | 0.44  | 0.055 | -0.53 | 0.44  | 0.224 | -0.16 | 0.43  | 0.705   |
| Religiosity (yes vs no)                | 3.11  | 0.38  | <.001 | 1.72  | 0.37  | <.001 | 0.84  | 0.37  | 0.024 | 1.80  | 0.36  | <.001   |
| Exposure to COVID-19 virus (yes vs no) | 2.35  | 0.39  | <.001 | 1.87  | 0.37  | <.001 | 1.79  | 0.36  | <.001 | 0.38  | 0.36  | 0.295   |

Note. ^: Apprenticeship, technical institute, trade- or vocational school, college, CEGEP or other non-university certificate or diploma; ^^: University certificate, diploma or degree; SE: standard error; CT\_CH: Coronavirus is a bioweapon developed by China to destroy the West; CT\_GOV: The government is misleading the public about the cause of the Coronavirus; SE: standard error; SyfoR: Sympathies for Radicalisation scale

Table 4. Regression of RIS on gender, endorsement of conspiracy theories CT\_GOV and CT\_CH, and psychological distress respectively, adjusted for socio-demographic variables



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| Outcome                                |       | RIS  |             |       | RIS  |             |       | RIS  |         |       | RIS  |         |
|--|-------|------|-------------|-------|------|-------------|-------|------|---------|-------|------|---------|
| Variable                               | β     | SE   | p-<br>value | β     | SE   | p-<br>value | β     | SE   | p-value | β     | SE   | p-value |
| (Intercept)                            | 16.27 | 0.67 | <.001       | 13.38 | 0.67 | <.001       | 14.03 | 0.65 | <.001   | 7.92  | 0.71 | <.001   |
| Gender (men vs women)                  | 2.08  | 0.20 | <.001       | 15.50 | 0.07 | (,001       | 11.05 | 0.05 |         | 7.72  | 0.71 |         |
| CT_GOV                                 | 2.00  | 0.20 | (1001       | 1.68  | 0.08 | <.001       |       |      |         |       |      |         |
| CT_CH                                  |       |      |             | -100  |      |             | 2.03  | 0.08 | <.001   |       |      |         |
| Psychological distress                 |       |      |             |       |      |             |       |      |         | 4.05  | 0.15 | <.001   |
| Age                                    | -0.28 | 0.02 | <.001       | -0.25 | 0.02 | <.001       | -0.26 | 0.02 | <.001   | -0.17 | 0.02 | <.001   |
| City (ref = Montreal)                  |       |      |             |       |      |             |       |      |         |       |      |         |
| Calgary                                | -0.79 | 0.31 | 0.010       | -0.20 | 0.30 | 0.491       | -0.15 | 0.29 | 0.611   | 0.13  | 0.29 | 0.662   |
| Edmonton                               | -0.21 | 0.31 | 0.488       | 0.31  | 0.30 | 0.294       | 0.25  | 0.29 | 0.395   | 0.25  | 0.29 | 0.385   |
| Toronto                                | -0.21 | 0.27 | 0.434       | 0.15  | 0.26 | 0.568       | 0.16  | 0.26 | 0.524   | 0.09  | 0.25 | 0.730   |
| Financial problems                     |       |      |             |       |      |             |       |      |         |       |      |         |
| (ref = none)                           |       |      |             |       |      |             |       |      |         |       |      |         |
| A little                               | 1.88  | 0.24 | <.001       | 1.45  | 0.23 | <.001       | 1.22  | 0.23 | <.001   | 0.52  | 0.23 | 0.023   |
| Moderate                               | 3.84  | 0.33 | <.001       | 2.72  | 0.32 | <.001       | 2.26  | 0.32 | <.001   | 1.01  | 0.32 | 0.002   |
| A lot                                  | 5.58  | 0.34 | <.001       | 3.65  | 0.34 | <.001       | 3.07  | 0.33 | <.001   | 1.30  | 0.35 | <.001   |
| <b>Education</b> (ref = HS or less)    |       |      |             |       |      |             |       |      |         |       |      |         |
| Voc school, CEGEP^                     | 1.76  | 0.30 | <.001       | 1.31  | 0.29 | <.001       | 1.07  | 0.29 | <.001   | 1.21  | 0.29 | <.001   |
| University^^                           | 1.35  | 0.29 | <.001       | 1.53  | 0.28 | <.001       | 1.25  | 0.28 | <.001   | 1.16  | 0.27 | <.001   |
| Immigrant generation                   |       |      |             |       |      |             |       |      |         |       |      |         |
| (ref = 3rd or more)                    |       |      |             |       |      |             |       |      |         |       |      |         |
| First                                  | -1.29 | 0.27 | <.001       | -1.14 | 0.26 | <.001       | -1.12 | 0.25 | <.001   | -0.33 | 0.25 | 0.192   |
| Second                                 | -0.25 | 0.26 | 0.333       | -0.15 | 0.25 | 0.559       | 0.01  | 0.25 | 0.969   | 0.18  | 0.24 | 0.466   |
| Religiosity (yes vs no)                | 1.76  | 0.21 | <.001       | 1.08  | 0.21 | 0.003       | 0.63  | 0.21 | 0.003   | 1.13  | 0.20 | <.001   |
| Exposure to COVID-19 virus (yes vs no) | 0.84  | 0.21 | <.001       | 0.62  | 0.21 | <.001       | 0.57  | 0.20 | 0.005   | -0.09 | 0.20 | 0.659   |

Note. ^: Apprenticeship, technical institute, trade- or vocational school, college, CEGEP or other non-university certificate or diploma; ^^: University certificate, diploma or degree; CT\_CH: Coronavirus is a bioweapon developed by China to destroy the West; CT\_GOV: The government is misleading the public about the cause of the Coronavirus; RIS: Radicalism Intention Scale; SE: standard error



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Table 5. Regression of support for VR on gender, endorsement of conspiracy theories, and psychological distress, for each conspiracy theory respectively, adjusted for socio-demographic variables

| conspiracy theory respectively, adjusted for socio-demographic variables |       |       |         |       |       |         |       |       |       |       |       |       |
|--|-------|-------|---------|-------|-------|---------|-------|-------|-------|-------|-------|-------|
| Outcome  | SyfoR |       |         |       |       |         | RIS   |       |       |       |       |       |
| Conspiracy theory  | (     | CT_GO | V       |       | CT_CH |         |       | CT_GO | V     |       | CT_CH | I     |
|  |       |       |         |       |       |         |       |       | p-    |       |       | p-    |
|  | β     | SE    | p-value | β     | SE    | p-value | β     | SE    | value | β     | SE    | value |
| (Intercept)  | 5.40  | 1.19  | <.001   | 7.12  | 1.17  | <.001   | 6.53  | 0.69  | <.001 | 7.34  | 0.68  | <.001 |
| Gender (men vs women)  | 5.23  | 0.32  | <.001   | 4.79  | 0.32  | <.001   | 2.06  | 0.18  | <.001 | 1.81  | 0.18  | <.001 |
| Conspiracy theory  | 2.36  | 0.13  | <.001   | 2.78  | 0.14  | <.001   | 1.10  | 0.08  | <.001 | 1.40  | 0.08  | <.001 |
| Psychological distress   | 7.42  | 0.25  | <.001   | 7.14  | 0.25  | <.001   | 3.50  | 0.15  | <.001 | 3.30  | 0.15  | <.001 |
| Age  | -0.31 | 0.04  | <.001   | -0.32 | 0.04  | <.001   | -0.20 | 0.02  | <.001 | -0.21 | 0.02  | <.001 |
| City (ref = Montreal)  |       |       |         |       |       |         |       |       |       |       |       |       |
| Calgary  | 2.41  | 0.49  | <.001   | 2.37  | 0.48  | <.001   | 0.54  | 0.28  | 0.054 | 0.54  | 0.28  | 0.050 |
| Edmonton   | 1.84  | 0.48  | <.001   | 1.67  | 0.48  | <.001   | 0.69  | 0.28  | 0.014 | 0.63  | 0.28  | 0.023 |
| Toronto  | 1.47  | 0.42  | 0.001   | 1.37  | 0.42  | 0.001   | 0.67  | 0.25  | 0.007 | 0.64  | 0.24  | 0.009 |
| Financial problems   |       |       |         |       |       |         |       |       |       |       |       |       |
| (ref = none)   |       |       |         |       |       |         |       |       |       |       |       |       |
| A little   | 0.26  | 0.38  | 0.497   | 0.05  | 0.38  | 0.904   | 0.48  | 0.22  | 0.031 | 0.37  | 0.22  | 0.096 |
| Moderate   | 1.18  | 0.54  | 0.029   | 0.79  | 0.53  | 0.139   | 0.62  | 0.31  | 0.049 | 0.40  | 0.31  | 0.197 |
| A lot  | 1.40  | 0.59  | 0.018   | 0.98  | 0.59  | 0.096   | 0.68  | 0.35  | 0.048 | 0.42  | 0.34  | 0.223 |
| <b>Education</b> (ref = HS or less)                                      |       |       |         |       |       |         |       |       |       |       |       |       |
| Voc. school, CEGEP^  | 2.18  | 0.48  | <.001   | 1.89  | 0.47  | <.001   | 1.07  | 0.28  | <.001 | 0.91  | 0.27  | <.001 |
| University^^   | 2.93  | 0.46  | <.001   | 2.50  | 0.45  | <.001   | 1.56  | 0.26  | <.001 | 1.36  | 0.26  | <.001 |
| Immigrant generation   |       |       |         |       |       |         |       |       |       |       |       |       |
| (ref = 3rd or more)  |       |       |         |       |       |         |       |       |       |       |       |       |
| First  | -1.63 | 0.41  | <.001   | -1.67 | 0.41  | <.001   | -0.38 | 0.24  | 0.113 | -0.41 | 0.24  | 0.086 |
| Second   | -0.21 | 0.40  | 0.605   | -0.02 | 0.40  | 0.960   | 0.16  | 0.24  | 0.498 | 0.25  | 0.23  | 0.281 |
| Religiosity (yes vs no)  | 0.53  | 0.34  | 0.114   | 0.01  | 0.34  | 0.968   | 0.56  | 0.20  | 0.004 | 0.27  | 0.20  | 0.174 |
| Exposure to COVID-19 virus   |       |       |         |       |       |         |       |       |       |       |       |       |
| (yes vs no)  | 0.39  | 0.34  | 0.258   | 0.39  | 0.34  | 0.248   | -0.08 | 0.20  | 0.668 | -0.08 | 0.19  | 0.674 |
|  |       |       |         |       |       |         |       |       |       |       |       |       |

Note. ^: Apprenticeship, technical institute, trade- or vocational school, college, CEGEP or other non-university certificate or diploma; ^^: University certificate, diploma or degree; CT\_CH: Coronavirus is a bioweapon developed by China to destroy the West; CT\_GOV: The government is misleading the public about the cause of the Coronavirus; RIS: Radicalism Intention Scale; SE: standard error; SE: standard error; SyfoR: Sympathies for Radicalisation scale; VR: violent radicalization



Table 6. Regression of support for VR on gender, endorsement of COVID-19 conspiracy theories, and psychological distress including interaction terms, adjusted for socio-demographic variables

| , , , , , , , , , , , , , , , , , , , | SyfoR | <b>J</b> |       |       |       |       | RIS   |        |       |       |       |       |
|---------------------------------------|-------|----------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
|                                       | •     | CT_GOV   | 1     |       | CT_CH |       |       | CT_GOV |       |       | CT_CH |       |
|                                       |       |          | p-    |       |       | p-    |       |        | p-    |       |       | p-    |
| Variable                              | β     | SE       | value | β     | SE    | value | β     | SE     | value | β     | SE    | value |
| (Intercept)                           | 22.67 | 1.65     | <.001 | 21.63 | 1.58  | <.001 | 13.31 | 0.97   | <.001 | 12.71 | 0.92  | <.001 |
| Gender (men vs women)                 | -7.25 | 1.73     | <.001 | -5.04 | 1.62  | 0.002 | -2.77 | 1.03   | 0.007 | -1.65 | 0.95  | 0.083 |
| Conspiracy theory                     | -3.32 | 0.46     | <.001 | -2.63 | 0.49  | <.001 | -1.22 | 0.27   | <.001 | -0.69 | 0.29  | 0.016 |
| Psychological distress                | 0.00  | 0.59     | 0.994 | 0.53  | 0.55  | 0.332 | 0.67  | 0.35   | 0.054 | 0.89  | 0.32  | 0.005 |
| Age                                   | -0.32 | 0.04     | <.001 | -0.32 | 0.04  | <.001 | -0.21 | 0.02   | <.001 | -0.21 | 0.02  | <.001 |
| City (ref = Montreal)                 |       |          |       |       |       |       |       |        |       |       |       |       |
| Calgary                               | 2.91  | 0.48     | <.001 | 2.87  | 0.47  | <.001 | 0.73  | 0.28   | 0.008 | 0.73  | 0.28  | 0.008 |
| Edmonton                              | 2.27  | 0.47     | <.001 | 2.15  | 0.47  | <.001 | 0.86  | 0.28   | 0.002 | 0.81  | 0.27  | 0.003 |
| Toronto                               | 1.80  | 0.41     | <.001 | 1.71  | 0.41  | <.001 | 0.80  | 0.24   | 0.001 | 0.77  | 0.24  | 0.002 |
| Financial problems (ref = None)       |       |          |       |       |       |       |       |        |       |       |       |       |
| A little                              | 0.40  | 0.37     | 0.276 | 0.47  | 0.37  | 0.200 | 0.53  | 0.22   | 0.016 | 0.53  | 0.22  | 0.016 |
| Moderate                              | 1.20  | 0.52     | 0.022 | 1.18  | 0.52  | 0.024 | 0.63  | 0.31   | 0.042 | 0.55  | 0.31  | 0.075 |
| A lot                                 | 0.66  | 0.58     | 0.255 | 0.53  | 0.58  | 0.354 | 0.39  | 0.34   | 0.252 | 0.25  | 0.34  | 0.464 |
| Education                             |       |          |       |       |       |       |       |        |       |       |       |       |
| Vocational school <sup>^</sup>        | 1.60  | 0.46     | 0.001 | 1.30  | 0.46  | 0.005 | 0.84  | 0.27   | 0.002 | 0.68  | 0.27  | 0.012 |
| University^^                          | 1.98  | 0.45     | <.001 | 1.60  | 0.45  | <.001 | 1.18  | 0.26   | <.001 | 1.02  | 0.26  | <.001 |
| Immigrant generation                  |       |          |       |       |       |       |       |        |       |       |       |       |
| First                                 | -1.15 | 0.40     | 0.004 | -1.10 | 0.40  | 0.007 | -0.19 | 0.24   | 0.426 | -0.19 | 0.24  | 0.424 |
| Second                                | 0.16  | 0.39     | 0.679 | 0.28  | 0.39  | 0.473 | 0.30  | 0.23   | 0.194 | 0.37  | 0.23  | 0.117 |
| Religiosity (yes vs no)               | -0.05 | 0.33     | 0.873 | -0.44 | 0.33  | 0.183 | 0.34  | 0.19   | 0.079 | 0.10  | 0.20  | 0.593 |



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| Exposure to COVID-19     | 0.03  | 0.33 | 0.917 | -0.03 | 0.33 | 0.925 | -0.21 | 0.19 | 0.270 | -0.24 | 0.19 | 0.221 |
|--------------------------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|
| CT*Psych. distress       | 2.34  | 0.20 | <.001 | 2.29  | 0.20 | <.001 | 0.92  | 0.12 | <.001 | 0.87  | 0.12 | <.001 |
| Psych. distress*Gender   | 4.46  | 0.90 | <.001 | 4.39  | 0.82 | <.001 | 1.47  | 0.53 | <.001 | 1.40  | 0.48 | 0.004 |
| CT*Gender                | 3.46  | 0.63 | <.001 | 2.28  | 0.66 | 0.001 | 1.54  | 0.37 | <.001 | 0.96  | 0.39 | 0.013 |
| CT*Psych.distress*Gender | -1.01 | 0.27 | <.001 | -0.95 | 0.27 | <.001 | -0.38 | 0.16 | 0.017 | -0.34 | 0.16 | 0.029 |

Note. ^: Apprenticeship, technical institute, trade- or vocational school, college, CEGEP or other non-university certificate or diploma; ^^: University certificate, diploma or degree; CT\_CH: Coronavirus is a bioweapon developed by China to destroy the West; CT\_GOV: The government is misleading the public about the cause of the Coronavirus; RIS: Radicalism Intention Scale; SE: standard error; SyfoR: Sympathies for Radicalisation scale; VR: violent radicalization



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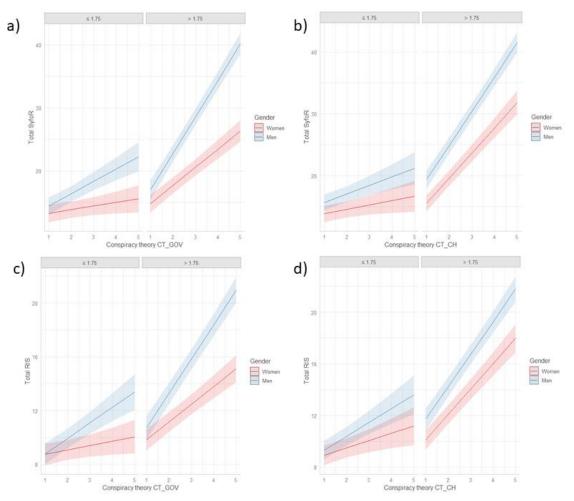
Table 7. Association between support for VR and endorsement of COVID-19 conspiracy theories in strata of gender and psychological distress

| Conspiracy<br>theory | Support for VR measure | Gender | Psychological distress (level) | β    | SE   | p-value |
|----------------------|------------------------|--------|--------------------------------|------|------|---------|
|                      | SyfoR                  | Women  | ≤1.75 (low)                    | 0.80 | 0.25 | 0.002   |
| CT_GOV               |                        |        | >1.75 (high)                   | 2.62 | 0.26 | <.001   |
| C1_00 V              |                        | Men    | ≤1.75 (low)                    | 2.08 | 0.27 | <.001   |
|                      |                        |        | >1.75 (high)                   | 4.77 | 0.27 | <.001   |
|                      | RIS                    | Women  | ≤1.75 (low)                    | 0.44 | 0.16 | 0.007   |
|                      |                        |        | >1.75 (high)                   | 1.15 | 0.14 | <.001   |
|                      |                        | Men    | ≤1.75 (low)                    | 1.12 | 0.17 | <.001   |
|                      |                        |        | >1.75 (high)                   | 2.16 | 0.14 | <.001   |
|                      | SyfoR                  | Women  | ≤1.75 (low)                    | 1.01 | 0.29 | <.001   |
| CT_CH                |                        |        | >1.75 (high)                   | 3.89 | 0.25 | <.001   |
| C1_CII               |                        | Men    | ≤1.75 (low)                    | 1.51 | 0.32 | <.001   |
|                      |                        |        | >1.75 (high)                   | 4.45 | 0.26 | <.001   |
|                      | RIS                    | Women  | ≤1.75 (low)                    | 0.72 | 0.18 | <.001   |
|                      |                        |        | >1.75 (high)                   | 1.89 | 0.14 | <.001   |
|                      |                        | Men    | ≤1.75 (low)                    | 1.11 | 0.19 | <.001   |
|                      |                        |        | >1.75 (high)                   | 2.12 | 0.14 | <.001   |

Note. CT\_CH: Coronavirus is a bioweapon developed by China to destroy the West; CT\_GOV: The government is misleading the public about the cause of the Coronavirus; RIS: Radicalism Intention Scale; SE: standard error; SyfoR: Sympathies for Radicalisation scale; VR: violent radicalization



**Figure 1.** Visual representation of the interaction between gender, endorsement of COVID-19 conspiracy theories and psychological distress on support for violent radicalization for a) CT\_GOV and SyfoR, b) CT\_CH and SyfoR, c) CT\_GOV and RIS, d) CT\_CH and RIS



Note. CT\_CH: Coronavirus is a bioweapon developed by China to destroy the West; CT\_GOV: The government is misleading the public about the cause of the Coronavirus; RIS: Radicalism Intention Scale, SyfoR: Sympathy for violent radicalization



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