

Attitudes toward Mandatory COVID-19 Vaccination Policies in Alberta: Evidence from Reddit during the Fourth Wave

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Abstract

This study aims to examine public attitudes and beliefs regarding mandatory COVID-19 vaccination policies in Alberta, Canada, during the province's fourth wave of the pandemic in September 2021. A total of 9,400 posts and comments published between September 1 and September 30, 2021, were collected from the r/Alberta subreddit using Pushshift.io. Content was manually reviewed to assess relevance to the study objectives and subsequently analyzed using inductive coding and an iterative qualitative analysis approach. The qualitative analysis identified five central themes: (1) perspectives related to personal autonomy and consent, (2) concerns surrounding the enforcement of COVID-19 vaccine passports, (3) distrust and criticism of government actions, (4) logistical challenges associated with passport implementation, and (5) views on the role of vaccine passports in avoiding further lockdowns. Overall, discussions within r/Alberta reflected predominantly supportive attitudes toward the implementation of a vaccine passport in Alberta. Opposition to vaccination and mandates tended to be less extreme than what has been reported in prior literature, potentially reflecting the moderation practices of the subreddit. While apprehensions regarding bodily autonomy were the most prominent source of resistance, concerns related to government authority and practical implementation were also significant factors shaping public discourse.

Keywords: COVID-19, Public attitudes, Social media, Reddit, Vaccine passports, Vaccine mandates

Introduction

In September 2021, Alberta was experiencing a sharp escalation in COVID-19 cases during what the province's then-Health Minister, Tyler Shandro, described as a "pandemic of the unvaccinated," as infection rates rose rapidly and disproportionately affected unvaccinated populations [1, 2]. At this time, Alberta's case numbers were nearly four times higher than the national average, and the province recorded COVID-19 mortality rates almost three times higher than

those of any other Canadian province, with the exception of Saskatchewan [2].

Although these outcomes may be partly explained by vaccination coverage—by the end of September 2021, Alberta and Saskatchewan were the only provinces where fewer than 70% of residents had received at least one dose of a COVID-19 vaccine, compared to a national average of 75%—political decisions likely also contributed to the severity of the situation [2–4]. In June 2021, the Alberta government, led by then-Premier Jason Kenney of the United Conservative Party (UCP), introduced a phased reopening strategy known as the "Open for Summer" plan, which was tied to vaccination benchmarks [4, 5]. Upon announcing the plan, Premier Kenney stated that once the province reopened it would remain "open for good," a statement he later acknowledged was premature and subsequently apologized for [6]. Following this reopening, Alberta experienced a substantial fourth wave of COVID-19,

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characterized by increased case counts, hospitalizations, intensive care admissions, and deaths, placing significant strain on the provincial healthcare system [7].

During this period, several other Canadian provinces implemented proof-of-vaccination requirements, mandating that eligible individuals present vaccination documentation to access certain public venues [8–11]. In contrast, Premier Kenney initially resisted adopting a comparable policy in Alberta, instead introducing a \$100 incentive to encourage vaccination uptake [2, 4]. As case numbers continued to rise, this position was reversed in mid-September, and the government introduced a vaccine passport system referred to as the “restrictions exemption program,” which came into effect on September 20, 2021 [12].

Amid these escalating case counts and rapidly evolving public health policies, discussions unfolded in real time on social media platforms, including Reddit. Reddit allows users to share text, images, and videos within topic- or location-specific communities known as subreddits, where content can be commented on and voted up or down by other users [13]. This study focuses on posts from the subreddit “Alberta: Wild Rose Country” (r/Alberta), which had approximately 181,000 active users at the time of writing [14]. Reddit accounts require minimal personal information beyond an email address, allowing users to remain largely anonymous [13]. As a result, demographic characteristics of users cannot be reliably determined unless self-disclosed. While some subreddits permit reasonable assumptions about user characteristics—for example, r/The_Donald, a now-banned subreddit, was generally understood to consist of American supporters of Donald Trump [15]—such assumptions are less certain for r/Alberta. Although it may be inferred that many users are Albertan residents, participation is open to anyone, and some commenters explicitly identify themselves as living in other provinces, though these claims cannot be independently verified.

In recent years, Reddit has increasingly been recognized as a useful data source for examining public perceptions and health-related behaviors [16–21]. Nevertheless, it remains a relatively novel platform for social science research and has been utilized less extensively than more established social media sources, such as Twitter [13]. Moreover, public attitudes toward vaccine passports as a mechanism for enforcing vaccination remain an underexplored area of research.

The purpose of this study is to examine online attitudes and beliefs surrounding mandatory COVID-19 vaccination policies in Alberta, Canada, by analyzing posts and comments from the r/Alberta subreddit between September 1 and September 30, 2021. This timeframe was selected to capture public discourse both prior to and immediately following the implementation of mandatory vaccination measures. Exploring public opinions on vaccine mandates and related policies provides valuable insight into the underlying themes shaping these discussions, which may, in turn, inform future considerations by public health authorities regarding the design and implementation of mandatory vaccination strategies.

Materials and Methods

Data for this study were obtained from the subreddit r/Alberta. English-language Reddit posts and comments were collected using the Pushshift.io platform. To limit the dataset to discussions related to COVID-19 vaccination, a set of predefined search terms was applied, including “COVID,” “COVID-19,” “vaccination,” “vaccine,” “jab,” “vax,” “passport” and “mandate.” These keywords were selected in collaboration with a departmental librarian and with authors HC and ZB, who have expertise in social media infoveillance research. Additional colloquial terms, such as “viddy” and “corona,” were also evaluated but were excluded because they did not produce any unique or relevant results.

Posts and comments were eligible for inclusion if they were published between September 1 and September 30, 2021. This timeframe was selected to capture public opinions regarding mandatory vaccination policies in Alberta both before and immediately after their initial implementation.

Following data extraction, a total of 9,400 comments were compiled and organized into an Excel spreadsheet. Three members of the research team independently conducted a manual screening process to determine whether each comment explicitly addressed vaccine mandates. To ensure consistency in screening decisions, predefined inclusion criteria were developed and are outlined in **Figure 1**. Of the 9,400 comments reviewed, 1,755 were deemed relevant and included in the analysis, as they contained discussion related to vaccine mandates or vaccine passports. Relevant comments were then transferred into a separate Excel file for further analysis

and randomly divided into two equal subsets, which were assigned to BR and GBN.

An iterative qualitative analysis was conducted following the framework proposed by Braun and Clarke [22], which emphasizes identifying all findings pertinent to the research objectives, regardless of how frequently they appear in the data. BR initially coded a random sample of 300 comments using an inductive approach to develop a preliminary codebook, consistent with Braun and Clarke’s methodology [22]. This codebook was subsequently reviewed and refined through discussions

with other members of the research team. BR and GBN then applied the finalized codebook to code the full dataset. The final stage of analysis involved synthesizing the coded data into five overarching themes, led by BR in consultation with the broader research team. Any discrepancies in coding were resolved through discussion between BR and GBN. The overall approach to data collection and qualitative analysis was informed by previously published studies examining online public opinion [23–25].

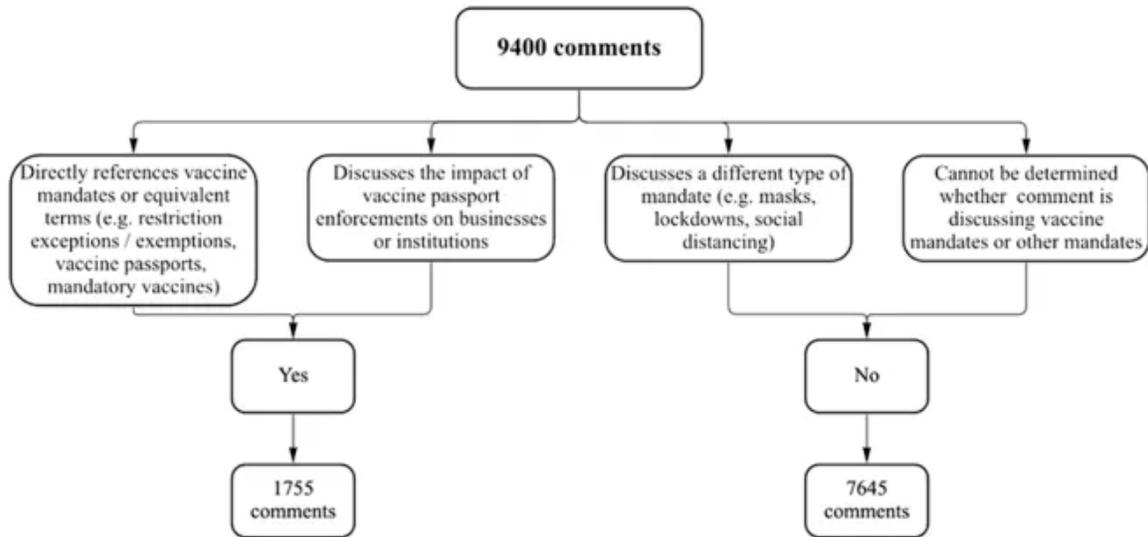


Figure 1. Screening criteria applied to Reddit comments (Canada, 2021).

Following consultation with the University of Waterloo Research Ethics Board, this study was deemed exempt from formal ethics approval because it relied exclusively on publicly accessible data. To further protect user privacy, all quoted material was paraphrased to ensure anonymity.

Results and Discussion

An overview of the five themes identified through qualitative analysis, along with representative example quotes, is presented in **Table 1**.

Table 1. Overview of identified themes and illustrative quotes (Canada, 2021).

Theme	Example Quote
Sentiments Relating to Autonomy and Consent	The passport is worse than a driver's license but not as bad as the Star of David. It would be like prohibiting voting until everyone performs an action they view as potentially harmful.
Concerns About Passport Enforcement	Enforcement of vaccine passports raises issues, as many retail workers have faced mistreatment when enforcing mask rules. A vaccine passport could lead to even worse abuse, since it involves handling sensitive private medical information.
Concerns About Government	Vaccine passports are coming, along with mandatory masking and business restrictions. Due to Jason Kenney's policies, Alberta will likely be the last province in Canada to implement them.

Concerns About the Logistics of Vaccine Passports	I'm okay with vaccine passports in principle, but relying on a third-party app would be hard to trust, given the problems experienced with the Alberta COVID contact tracing app.
Sentiments Relating to the Necessity of Passports to Avoid Lockdowns	Vaccine passports combined with higher vaccination rates are preferable; otherwise, business closures and limits on gatherings may become necessary. Though unfair to those who behaved responsibly, this is the reality.

Opinions relating to autonomy and consent

Commenters raised issues tied to personal autonomy and consent, a theme that appeared across different views on mandatory vaccinations. Many emphasized the importance of bodily autonomy, arguing that forcing vaccines would violate a person's fundamental right to decide what happens to their body, rather than having the government dictate it. These individuals often compared vaccine passports to discrimination against those who remained unvaccinated.

One commenter described it as: "It's about freedom of movement. The passport is worse than a driver's license but not quite as bad as the Star of David. It would be similar to barring people from voting until they perform an action they see as potentially harmful."

On the other side, some expressed frustration that the absence of mandates and passports was restricting the freedoms of vaccinated people. They believed that introducing a passport system would allow restrictions to be eased, and felt that compliant individuals were being penalized while the unvaccinated held society back from recovering.

For example: "Yes, those who've been vaccinated want to move on with life. Everyone knows restrictions damage businesses and rising cases strain healthcare. A passport would protect both."

Another added: "I'm furious right now. We—the vaccinated, now about 80% of the population—are paying the price for the selfish 20% who refuse to get the shot."

Those opposed to passports held firm in their belief that such a system would coerce "free individuals" into vaccination just to engage in normal societal activities.

One stated: "Proponents of vaccine passports truly want to impose the heaviest possible restrictions on others to pressure them into something they've freely decided against."

Some also worried that Alberta's context made a passport less likely to succeed compared to other provinces, as holdouts would not suddenly get vaccinated. This concern was linked to the proposed system's numerous exemptions, such as temporary allowances for recent COVID-19 recoveries.

A commenter suggested: "Rather than rushing a half-hearted version at the last moment and leaving businesses in chaos, we could have reopened slowly and cautiously, kept some measures like masks, and prepared a proper vaccine passport. Nearly every other province has managed to reopen without ending up with our outcomes."

Concerns about passport enforcement

Commenters highlighted potential negative impacts on businesses if they were tasked with checking passports. Many believed the government deliberately shifted enforcement to private companies to shield itself from anti-vaccine backlash. There was also significant worry about the risks faced by low-wage workers who would have to handle checks, with commenters arguing it was unfair to expose them to harassment while simply performing their duties.

One explained: "They're pushing the responsibility onto individual businesses. If you decide to enforce the passport, angry customers will blame *you*, not the government. If it were simply made law..."

Another noted: "A key problem is who enforces these passports. Retail workers have already faced abuse for enforcing mask rules. Checking vaccine status—which involves sensitive medical information—could lead to even worse mistreatment."

Some predicted that businesses might opt out of enforcement to avoid protests, lost revenue, or confrontations. This, they argued, would undermine the system's effectiveness, as unvaccinated people would simply patronize lenient venues, allowing transmission to continue.

As one put it: "If we leave it up to businesses, many will hesitate—either because they're anti-vax themselves or because they fear losing customers and dealing with backlash. If only some places require it, cases won't drop because the unvaccinated will just go to competitors that let them in, and spread will persist. Plus, responsible businesses that do enforce it will be punished for doing the right thing."

Another observed: "That's why many businesses and staff have quietly stopped enforcing mask rules. With vaccine

passports, we'd risk the same thing happening again. It's simply unfair to place that load on those workers once more."

Finally, commenters doubted that passports could be meaningfully enforced legally. Referencing past cases where mask violation fines were overturned in court, they feared similar challenges would render the system ineffective or unenforceable.

They pointed out that opponents would likely fight violations in court, drawing parallels to previous unsuccessful enforcement efforts in Alberta.

Concerns about the Alberta government

Commenters frequently expressed strong dissatisfaction with the Alberta government's approach to COVID-19 policies, criticizing both the overall restrictions and the delayed introduction of vaccine mandates. This anger seemed to come from a widespread belief that proof-of-vaccination requirements were crucial for slowing the virus's spread.

One commenter remarked: "We're definitely going to end up with vaccine passports, along with mandatory masks and restrictions on businesses. But thanks to Jason Kenney, Alberta will be the last province in Canada to get them."

Several people pointed out that the government went out of its way to avoid calling the system a "vaccine passport," which many saw as a blatant attempt to dodge backlash from their core supporters.

For example: "In last week's announcement, the UCP made it very clear this wasn't a vaccine passport. They actually called it a 'conveniently sized paper card.'"

Others noted the government's obvious reluctance to adopt a proof-of-vaccination program, especially since Premier Jason Kenney had previously stated his opposition to such a system.

A typical view was: "Since he's not mandating vaccines or introducing a proper passport system—both of which would clearly boost vaccination rates—he definitely shares some of the blame."

These criticisms often included accusations of corruption, with people claiming the government was treading carefully on vaccine measures to preserve its political power.

One person wrote: "Bringing in vaccine passports would cause a major shift in the UCP's voter base toward the Wildrose Independence Party. I believe that's what Hinshaw was hinting at when he mentioned it would be political suicide for Kenney. What a ridiculous situation."

A separate group of commenters focused on government overreach. Generally opposed to mandates, they argued that requiring proof of vaccination was ethically indefensible and created a form of discrimination.

As one put it: "They're supporting segregation and forced government mandates—both of which are completely morally unacceptable."

Concerns about the logistics of vaccine passports

While not as dominant as complaints about the government, some commenters raised practical worries about how a proof-of-vaccination system would work. Many feared technical problems, often referencing past failures with Canada's COVID-19 contact-tracing apps.

One said: "I'm fine with the idea of passports, but if it involves a third-party app, it'll be hard to persuade me after the mess with the Alberta COVID contact-tracing app."

Others predicted the system would have too many weaknesses, particularly around the risk of forgery.

A commenter observed: "Even though Kenney strongly opposes calling it a 'vaccine passport,' he announced that people could download and print a document proving their vaccination status. So they're essentially issuing a vaccine passport without naming it that—especially since everyone knows it can be easily forged."

There were also broader concerns about fairness and access. Some argued that relying on digital solutions would disadvantage people without the necessary technology, such as smartphones.

One explanation was: "An app is likely to be chosen because it's quick to update and cheap to roll out. But for those without smartphones—like some low-income individuals, the homeless, or older adults—this would create a significant barrier. Any passport system needs a solid alternative option if the main method is too difficult for some people. Regardless of the format, everyone's vaccination status should still be verifiable."

Opinions relating to the necessity of passports to avoid lockdowns

Commenters showed deep frustration over the absence of vaccine passports, arguing that without them, vaccinated people were unfairly restricted in their everyday non-essential activities.

One typical view was: "It's either vaccine passports with higher vaccination rates, or we'll likely have to face business shutdowns and limits on gatherings again. It's

harsh on the majority of us who did the right thing, but that's the reality."

Others pushed back, insisting that private businesses should be allowed to require proof of vaccination if they wish, but that a broad government mandate was unnecessary.

As one put it: "Private businesses should absolutely have the freedom to admit only vaccinated customers. They just need to clearly advertise their policy so people can choose whether or not to go there."

Many went beyond supporting passports for non-essential venues like stores, salons, or restaurants, and proposed consequences in healthcare for those who remained unvaccinated.

For instance: "The logical next step after vaccine passports would be higher healthcare premiums for the unvaccinated—something I would fully back."

Another elaborated: "Require payment upfront by a set deadline, refunded only after completing the full vaccine series. If not, that money could be pooled to bolster our strained healthcare system."

Some commenters took an even harder line, suggesting that hospitals should deny treatment to unvaccinated patients who fall ill with COVID-19.

One stated bluntly: "There should be a vaccine passport for hospitals. Let the anti-vaxxers get sick—society would be better off without them. It's just natural selection at work."

Overall, the findings indicate that opinions toward the introduction of a vaccine passport in Alberta were largely positive. The passport system was ultimately implemented on 15 September 2021 [26]. Reddit discussions predominantly supported the use of a passport, although many users simultaneously raised concerns regarding its rollout, enforcement, and logistical challenges. These findings are consistent with the limited body of existing research, which suggests that attitudes toward vaccine mandates tend to be favorable overall [27–29].

In alignment with previous studies, negative perceptions of vaccine passports were most commonly associated with concerns about bodily autonomy and personal freedoms [28, 30]. Although commenters opposing passports were fewer in number compared to supporters, they frequently argued that such systems would unfairly discriminate against individuals who were unvaccinated. However, a divergence from the literature was observed in the tone of opposition. Anti-passport sentiment in this dataset was generally more restrained than the intensity

observed in some pro-passport commentary [28]. For instance, while opponents emphasized individual choice regarding medical decisions, some supporters advocated for extreme measures, including restricting unvaccinated individuals' access to healthcare services. Existing literature has shown that opposition to vaccine passports is often rooted in conspiracy-driven narratives and strong anti-vaccination beliefs, particularly around privacy and government surveillance [28, 30]. The relative absence of such rhetoric in this dataset may be attributable to content moderation practices on Reddit. Although the platform is often viewed as enabling anonymous expression of controversial viewpoints [31], subreddit moderators who support vaccination policies may remove content perceived as extreme or harmful.

The data also revealed substantial concerns related to the enforcement of vaccine passports, as well as dissatisfaction with government-led implementation and operational feasibility. Notably, limited research has examined these practical concerns, as most existing studies focus primarily on ethical or human rights implications. A novel contribution of this study is the identification of implementation and logistical apprehensions among individuals who otherwise supported the concept of a vaccine passport.

With respect to enforcement, many commenters felt that responsibility for implementing the passport was disproportionately placed on businesses rather than the provincial government. This perception appeared to reflect broader dissatisfaction with Alberta's government, which was reinforced by comments directly criticizing political leadership. Commenters expressed anger and frustration toward the premier's opposition to vaccine passports and his handling of COVID-19 prevention strategies. Some went further, characterizing the provincial government as corrupt, indicating a profound lack of trust in both political leadership and governing institutions. These findings are consistent with broader vaccine hesitancy literature, which frequently identifies distrust in government as a central theme [32–35]. However, a distinctive aspect of this dataset is that distrust was expressed by both pro-vaccine and anti-vaccine individuals. This may be partially explained by Alberta's management of the pandemic, during which the province experienced nearly three times the case counts of other provinces, excluding Saskatchewan [8–11].

Concerns regarding the logistical implementation of vaccine passports were also evident, particularly surrounding the technological systems required to access

vaccination proof. While the availability of paper-based vaccine certificates helped mitigate some of these concerns, challenges remained for individuals who might face barriers when applying for documentation online.

Overall, the findings demonstrate strong support for vaccine passports among this sample of Reddit users, with many commenters endorsing vaccine mandates as a means to restore pre-pandemic social and economic activities. Some supporters advocated for even stricter policies than those implemented, including extending passport requirements to healthcare settings. These views may reflect heightened frustration among individuals who complied with public health guidance yet continued to experience restrictions on non-essential activities. Additionally, dissatisfaction with provincial leadership likely contributed to these sentiments. Many commenters expressed resentment toward unvaccinated individuals, attributing ongoing public health restrictions to their refusal to receive vaccines.

Several limitations should be considered when interpreting these findings. One key limitation relates to the removal of content. While Reddit does not enforce a platform-wide policy against misinformation, subreddit moderators, including those of r/Alberta, have the authority to remove posts containing anti-vaccine misinformation. Removed comments are no longer visible, making it impossible to determine the rationale for their removal. Consequently, although the dataset appeared overwhelmingly supportive of vaccine passports, dissenting views may have been underrepresented. Furthermore, as a qualitative study, the findings are not generalizable to the broader population of Alberta. The anonymity of Reddit also prevents the collection and analysis of demographic data and does not guarantee that all commenters were residents of Alberta. Additionally, the data were collected over a one-month period, during which the vaccine passport was implemented midway through the month [12]. This timing may have influenced the findings, as users had limited opportunity to reflect on the real-world impacts of the policy. Although post-implementation data were captured, discussion of the passport declined following its introduction.

To the authors' knowledge, this study is the first to examine vaccine passport attitudes in Alberta using social media data. These findings offer valuable insights into public perceptions of mandatory vaccination policies. Public health authorities should prioritize clear and transparent communication regarding passport

systems prior to implementation and establish consistent enforcement mechanisms. The results may also inform future research exploring the relationship between public opinion and the effectiveness of stringent public health interventions, such as vaccine passports, during public health emergencies. Future studies could expand this work by analyzing social media discussions across multiple provinces to assess whether similar patterns emerge during vaccine passport implementation.

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References

1. Global News. 'Pandemic of the Unvaccinated' Surging Across Alberta, Straining the Health-Care System: Shandro. Glob News (2021). Available From: <https://globalnews.ca/video/8165878/pandemic-of-the-unvaccinated-surging-across-alberta-straining-the-health-care-system-shandro> (Accessed June 20, 2022).
2. Miller A. Alberta Acted Like the Pandemic Was Over. Now It's a Cautionary Tale for Canada. CBC News (2021). Available From: <https://www.cbc.ca/news/health/alberta-fourth-wave-surge-hospitals-icu-covid-19-1.6197263> (Accessed June 20, 2022).
3. Public Health Agency of Canada. Demographics: COVID-19 Vaccination Coverage in Canada (2021). Canada.ca. Available From: <https://health-infobase.canada.ca/covid-19/vaccination-coverage/archive/2021-09-24/index.html> (Accessed June 20, 2022).
4. Bratt D. "Open for Summer:" The Political Failure of Alberta's COVID-19 Response. *J Mil Strateg Stud* (2022) 21(3):66–92. ISSN:1488-559X.
5. Alberta. Alberta's Open for Summer Plan | Plan de Réouverture Estivale de l'Alberta en Trois Étapes. Edmonton, Alberta: Government of Alberta; (2021). Available From: <https://www.alberta.ca/release.cfm?xID=78245A07>

- B1BCA-D29D-4853-55C609A2834F05E3 (Accessed June 20, 2022).
6. Dawson T. 'Excruciating, Overwhelming': Jason Kenney Reflects on Leading Alberta Through COVID in 2021. *Natl Post* (2021). Available From: <https://nationalpost.com/news/politics/jason-kenney-reflects-on-leading-alberta-through-covid-in-2021> (Accessed June 20, 2022).
 7. Austen I. Alberta's 'Best Summer Ever' Ends With an Overwhelmed Medical System. *The New York Times* (2021). Available From: <https://www.nytimes.com/2021/09/24/world/canada/canada-alberta-covid-cases.html> (Accessed June 20, 2022).
 8. Office of the Premier. Ontario to Require Proof of Vaccination in Select Settings. *Ontario Newsroom* (2021). Available From: <https://news.ontario.ca/en/release/1000779/ontario-to-require-proof-of-vaccination-in-select-settings> (Accessed June 20, 2022).
 9. BC Gov News. B.C. Launches Proof of Vaccination to Stop Spread of Covid-19. *BC Gov News* (2021). Available From: <https://news.gov.bc.ca/releases/2021HLTH0053-001659> (Accessed June 20, 2022).
 10. Jonas S. Facing 'Inevitable' 4th Wave, Quebec to Implement COVID-19 Vaccine Passport Sept. 1. *CBC News* (2021). Available From: <https://www.cbc.ca/news/canada/montreal/quebec-vaccine-passport-1.6136031> (Accessed June 20, 2022).
 11. Manitoba. Manitoba Expands Vaccine Passports for Fully Immunized Individuals as of Sept. 3. *Province of Manitoba* (2021). Available From: <https://news.gov.mb.ca/news/index.html?item=52278&posted=2021-08-27> (Accessed June 20, 2022).
 12. CBC News. Alberta's Proof-of-Vaccination Program Begins Today. Here's What You Need to Know. *CBC News* (2021). Available From: <https://www.cbc.ca/news/canada/edmonton/vaccine-passport-proof-of-vaccination-alberta-1.6182352> (Accessed June 20, 2022).
 13. Amaya A, Bach R, Keusch F, Kreuter F. New Data Sources in Social Science Research: Things to Know Before Working With Reddit Data. *Soc Sci Comput Rev* (2019) 39(5):943–60. 10.1177/0894439319893305
 14. Reddit. Alberta: Wild Rose Country (2022). Available From: <https://www.reddit.com/r/alberta/> (Accessed July 26, 2022).
 15. Isaac M. Reddit, Acting Against Hate Speech, Bans 'The_Donald' Subreddit. *The New York Times* (2020). Available From: <https://www.nytimes.com/2020/06/29/technology/reddit-hate-speech.html> (Accessed July 26, 2022).
 16. Record RA, Silberman WR, Santiago JE, Ham T. I Sought It, I Reddit: Examining Health Information Engagement Behaviors Among Reddit Users. *J Health Commun* (2018) 23(5):470–6. 10.1080/10810730.2018.1465493
 17. Sowles SJ, McLeary M, Optican A, Cahn E, Krauss MJ, Fitzsimmons-Craft EE, et al. A Content Analysis of an Online Pro-Eating Disorder Community on Reddit. *Body Image* (2018) 24:137–44. 10.1016/j.bodyim.2018.01.001.
 18. Du C, Lee W, Moskowitz D, Lucioni A, Kobashi KC, Lee UJ. I Leaked, Then I Reddit: Experiences and Insight Shared on Urinary Incontinence by Reddit Users. *Int Urogynecol J* (2019) 31(2):243–8. 10.1007/s00192-019-04165-8
 19. Kumar N, Corpus I, Hans M, Harle N, Yang N, McDonald C, et al. Covid-19 Vaccine Perceptions in the Initial Phases of US Vaccine Roll-Out: An Observational Study on Reddit. *BMC Public Health* (2022) 22:446. 10.1186/s12889-022-12824-7
 20. Gozzi N, Tizzani M, Starnini M, Ciulla F, Paolotti D, Panisson A, et al. Collective Response to Media Coverage of the COVID-19 Pandemic on Reddit and Wikipedia: Mixed-Methods Analysis. *J Med Internet Res* (2020) 22(10):e21597. 10.2196/21597
 21. Yan C, Law M, Nguyen S, Cheung J, Kong J. Comparing Public Sentiment Toward COVID-19 Vaccines Across Canadian Cities: Analysis of Comments on Reddit. *J Med Internet Res* (2021) 23(9):e32685. 10.2196/32685
 22. Braun V, Clarke V. Using Thematic Analysis in Psychology. *Qual Res Psychol* (2006) 3(2):77–101. 10.1191/1478088706qp063oa
 23. Meyer SB, Violette R, Aggarwal R, Simeoni M, MacDougall H, Waite N. Vaccine Hesitancy and Web 2.0: Exploring How Attitudes and Beliefs About Influenza Vaccination Are Exchanged in Online Threaded User Comments. *Vaccine* (2019) 37(13):1769–74. 10.1016/j.vaccine.2019.02.028.
 24. Rotolo B, Dubé E, Vivion M, MacDonald SE, Meyer SB. Hesitancy Towards COVID-19 Vaccines

- on Social Media in Canada. *Vaccine* (2022) 40(19):2790–6. 10.1016/j.vaccine.2022.03.024.
25. Maxwell D, Robinson SR, Williams JR, Keaton C. “A Short Story of a Lonely Guy”: A Qualitative Thematic Analysis of Involuntary Celibacy Using Reddit. *Sex Cult* (2020) 24(6):1852–74. 10.1007/s12119-020-09724-6.
 26. Government of Alberta. COVID-19 Information: Requirements for the Restrictions Exemption Program. Edmonton, Alberta: Government of Alberta; (2021).
 27. Martin S, Vanderslott S. “Any Idea How Fast ‘It’s Just a Mask!’ Can Turn Into ‘It’s Just a Vaccine!’”: From Mask Mandates to Vaccine Mandates During the COVID-19 Pandemic. *Vaccine* (2021) 40:7488–99. 10.1016/j.vaccine.2021.10.031.
 28. Khan ML, Malik A, Ruhi U, Al-Busaidi A. Conflicting Attitudes: Analyzing Social Media Data to Understand the Early Discourse on COVID-19 Passports. *Technol Soc* (2022) 68:101830. 10.1016/j.techsoc.2021.101830.
 29. de Figueiredo A, Larson HJ, Reicher SD. The Potential Impact of Vaccine Passports on Inclination to Accept COVID-19 Vaccinations in the United Kingdom: Evidence From a Large Cross-Sectional Survey and Modeling Study. *EclinicalMedicine* (2021) 40:101109. 10.1016/j.eclinm.2021.101109.
 30. Smith LE, Hodson A, Rubin GJ. Parental Attitudes Towards Mandatory Vaccination; a Systematic Review. *Vaccine* (2021) 39(30):4046–53. 10.1016/j.vaccine.2021.06.018.
 31. Reddit. Anyone Else Kind of Feel Reddit Is Very Toxic and Hostile? (2021). Available From: <https://www.reddit.com/r/CasualConversation/comments/othng0/> (Accessed July 1, 2022).
 32. Hudson A, Montelpare WJ. Predictors of Vaccine Hesitancy: Implications for COVID-19 Public Health Messaging. *Int J Environ Res Public Health* (2021) 18(15):8054. 10.3390/ijerph18158054.
 33. Jennings W, Stoker G, Bunting H, Valgarðsson VO, Gaskell J, Devine D, et al. Lack of Trust, Conspiracy Beliefs, and Social Media Use Predict COVID-19 Vaccine Hesitancy. *Vaccines* (2021) 9(6):593. 10.3390/vaccines9060593.
 34. Hou Z, Tong Y, Du F, Lu L, Zhao S, Yu K, et al. Assessing COVID-19 Vaccine Hesitancy, Confidence, and Public Engagement: A Global Social Listening Study. *J Med Internet Res* (2021) 23(6):e27632. 10.2196/27632.
 35. Schernhammer E, Weitzer J, Laubichler MD, Birmann BM, Bertau M, Zenk L, et al. Correlates of COVID-19 Vaccine Hesitancy in Austria: Trust and the Government. *J Public Health (Oxf)* (2022) 44(1):e106–e116. 10.1093/pubmed/fdab122.