Gender differences in Coronavirus Disease 2019 (COVID-19) related beliefs and practices of Orthodox Jews in Montreal: An exploratory study

Natoya Bent Department of Family Medicine McGill University, Montreal December 2023

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Master of Science in Family Medicine

© Natoya Bent, 2023

Table of Contents:

Abstract	5
Résumé	7
Acknowledgements	10
Contributions of Authors	11
List of Figures and Tables	12
List of Abbreviations	15
Chapter 1: Introduction	16
Chapter 2: Literature Review	18
2.1 Infectious Diseases in Minority Groups	
2.2 Relationship between Sex and Gender Differences and Infectious Diseases	18
2.3 Sex and Gender Differences in COVID-19 Infection	19
2.4 Gender Differences in Compliance with COVID-19 Public Health Measures	20
2.5 Compliance with COVID-19 Public Health Measures in Canada	20
2.6 Cultural Traditions in the Orthodox Jewish Community	23
2.7 COVID-19 in the Orthodox Jewish Community	24
2.8 Compliance with COVID-19 Public Health Measures within the Orthodox Je	wish
Community	24
2.9 Trust in the Government	26
Summary and Rationale of Study	27
Chapter 3: Methodology	28
3.1 Study Design	
3.2 Study Population	29
3.3 Study Tool	

3.4 Statistical Analyses	30
3.4.1 Outcome Measures	31
3.4.2 Transformed Variables	31
3.4.3 IPTW and Regression Modeling	34
3.4.4 Ethics	36
Chapter 4: Results	36
4.1 Overall Demographics	36
4.2 Gender Differences	40
4.2.1 Age Group Distribution by Gender	40
4.2.2 Municipality Distribution by Gender	41
4.2.3 Highest Level of Education by Gender	43
4.2.4 Main Occupation by Gender	43
4.2.5 Travel History by Gender	44
4.2.6 Frequency of Gathering Outside the Household	46
4.3 Levels of Trust	48
4.3.1 Levels of Trust in the Federal Government	50
4.3.2 Levels of Trust in the Quebec Government	51
4.3.3 Levels of Trust in the Community	52
4.3.4 Levels of Trust in Public Health Institutions	53
4.3.5 Levels of Trust in Individuals Outside the Orthodox Jewish Community	54
4.4 Satisfaction with Health and Public Services	55
4.4.1 Health Service Satisfaction	57
4.4.2 Public Service Satisfaction	58
4.5 Compliance with COVID-19 Public Health Measures	59
4. 5.1 Overall Compliance with COVID-19 Public Health Measures	61

4.5.2 Gender Differences in Compliance with COVID-19 Public Health Measures	62
4.6 IPTW and Regression Models	64
4.6.1 Overall Compliance and Trust Score	67
4.6.2 Individual Trust Measures	68
4.6.3 Individual Compliance Measures	70
Chapter 5: Discussion	72
Chapter 6: Knowledge Translation	78
Chapter 7: Conclusion	78
Chapter 8: References	80
Chapter 9: Appendices	88
Appendix 1: Enhanced Core Data Elements Survey for Adults	88
Appendix 2: Directed Acyclic Graphs (DAG)	99
Appendix 2.1: Overall Compliance Score DAG	99
Appendix 2.2: Overall Trust Score DAG	.100
Appendix 3: Distribution and Frequencies of Transformed Variables used in Regression	l
Models with Missing Data Excluded	.101
Appendix 4: Bagged Marginal Differences and 95% Confidence Intervals for Overall	
Compliance and Trust Score with Missing Data Replaced and Removed	.102
Appendix 4.1: Bagged Marginal Differences and 95% Confidence Intervals for Ov	erall
Compliance Score with Missing Data Replaced and Removed	.102
Appendix 4.2: Bagged Marginal Differences and 95% Confidence Intervals for Ov	erall
Trust Score with Missing Data Replaced and Removed	.103
Appendix 5: COVID-19 Timelines	.104
Appendix 5.1: 2020 COVID-19 Timeline	.104
Appendix 5.2: 2021-2022 COVID-19 Timeline	.105

<u>Abstract</u>

Background: The COVID-19 pandemic highlighted the disproportionate impact of communicable diseases on minority groups, including the Orthodox Jewish community. Men and women experienced the pandemic differently as evidenced by the ratio of male to female cases and deaths being 0.88 and 1.30 respectively, based on data collected from the World Health Organization from 186 countries as of August 21, 2023 [1]. Gender consists of socially constructed norms that determine roles, relationships, and positional power in society [2]. In cultures where women take on the role of primary caregivers, men may be less aware of health information and less motivated to locate such information. No studies have been conducted thus far on the role of gender in understanding the differential experiences of COVID-19 within Orthodox Jewish communities. Gender roles are strictly defined in this community and align with biological sex. With its breadth of sub-groups and specific gender roles based on Jewish Law, the Orthodox Jewish community of Montreal presented an ideal opportunity to investigate the relationship between gender and communicable disease impact on minority groups.

Objective: To investigate the role of gender in the differential reporting of COVID-19 experiences, including levels of trust, public and healthcare satisfaction, and compliance with public health measures within Orthodox Jewish communities in Montreal.

Methods: This cross-sectional study is embedded within an interdisciplinary mixed methods project conducted in partnership with the Orthodox Jewish community of Montreal. Data were obtained from a modified version of the COVID-19 Immunity Taskforce Core Data Elements Survey. Our convenience sample includes adults who intended to receive the COVID-19 vaccine; data were collected at baseline between June 23, 2021 and May 25, 2022. The main

outcome measures were compliance with COVID-19 public health measures and levels of trust in different authorities. Other outcomes were levels of satisfaction with public and healthcare services. Responses were elicited using likert-type scales. Analyses were performed using R Studio 4.2.2. Descriptive statistics were undertaken and compared by gender for all outcome measures. Inverse probability of treatment weighting using propensity scores and weighted Poisson regression models were used to determine the relationship between gender and the overall compliance and trust scores. Weighted logistic regression models were used to estimate the effect of gender on the individual compliance and trust measures. Predictive modeling was undertaken to determine the difference in compliance between women and men. Bootstrapping was used for accuracy to compute 95% confidence intervals.

Results: Our sample consisted of 239 adults, including 128 men and 111 women. The mean age of participants was 35 years in women and 36 years in men. Women reported greater levels of trust in the Quebec government (66% vs. 41%), Public Health Institutions (68% vs. 43%), and individuals outside the community (80% vs. 74%). The level of trust in the Federal government (57% vs. 56%) and their community (98% vs. 98%) was similar between women and men. Women also reported higher levels of satisfaction with health (68% vs. 54%) and public services (82% vs. 72%) than men. Women had a 0.75 to 1.44 (95% CI 0.10-2.60) higher overall compliance score than men. The compliance measure that showed the most significant and statistical difference between women and men was avoiding common greetings (18%, 95% CI 6-30%). Women also had a 0.80 (95% CI 0.35-1.21) higher overall trust score than men. The only trust measure that showed a statistically significant difference between women and men at the 5% type 1 error was trust in the Quebec Government (16%, 95% CI 1%-32%).

Conclusion: Women expressed greater overall compliance with public health measures, higher levels of satisfaction with health and public services, and greater levels of trust than men. Differences in gender roles in the community may explain these findings. To achieve greater compliance, public health interventions should consider the intersectional aspects of minority group experience, in this case, the combination of religion and gender.

Résumé:

Contexte: La pandémie de la COVID-19 a mis en évidence l'impact disproportionné des maladies transmissibles sur les groupes minoritaires, notamment la communauté juive orthodoxe. Les hommes et les femmes ont vécu la pandémie différemment, comme en témoigne le ratio de cas et de décès entre hommes et femmes de 0,88 et 1,30, respectivement, d'après la base de données collectées par l'Organisation mondiale de la santé dans 186 pays le 21 août 2023 [1]. Le genre est constitué de normes socialement construites qui déterminent les rôles, les relations et le pouvoir de positionnalité dans la société [2]. Dans les cultures où les femmes assument le rôle principal de dispensatrice de soins, les hommes peuvent être moins conscients des informations liées à la santé et moins motivés à les trouver. Jusqu'à présent, aucune étude n'a été menée sur le rôle du genre dans la compréhension des expériences différentielles liées à la COVID-19 au sein des communautés juives orthodoxes. Dans cette communauté, les rôles de genre sont strictement définis et s'alignent sur le sexe biologique. En raison de l'étendue de ses sous-groupes et de ses rôles de genre spécifiques basés sur la loi juive, la communauté juive orthodoxe de Montréal se présentait comme une occasion idéale d'étudier la relation entre le genre et l'impact des maladies transmissibles sur les groupes minoritaires.

Objectif: Étudier le rôle du genre dans les rapports différentiels sur les expériences liées à la COVID-19, y compris les niveaux de confiance, de satisfaction envers le public et les soins

7

de santé, et de respect des mesures de santé publique au sein des communautés juives orthodoxes de Montréal.

Méthodes : Cette étude transversale s'inscrit dans un projet interdisciplinaire à méthodes mixtes mené en partenariat avec la communauté juive orthodoxe de Montréal. Les données ont été obtenues à partir d'une version modifiée de l'enquête sur les éléments de données essentiels du groupe de travail sur l'immunité face à la COVID-19. Notre échantillon de commodité comprend des adultes qui avaient l'intention de recevoir le vaccin contre la COVID-19. Les données ont été collectées au début de l'enquête entre le 23 juin 2021 et le 25 mai 2022. Les principales mesures des résultats étaient le respect des mesures de santé publique liées au COVID-19 et les niveaux de confiance envers les diverses autorités. D'autres résultats étaient les niveaux de satisfaction à l'égard des services publics et de santé. Les réponses ont été obtenues à l'aide d'échelles de type Likert. Les analyses ont été effectuées à l'aide de R Studio 4.2.2. Des statistiques descriptives ont été entreprises et comparées par genre pour toutes les mesures des résultats. La probabilité inverse de pondération du traitement à l'aide de scores de propension et de modèles de régression de Poisson pondérés ont été utilisés pour déterminer la relation entre le genre et les scores globaux de conformité et de confiance. Des modèles de régression logistique pondérée ont été utilisés pour estimer l'effet du genre sur les mesures individuelles de conformité et de confiance. Une modélisation prédictive a été entreprise pour déterminer la différence en matière de conformité entre les femmes et les hommes. Le bootstrapping a été utilisé pour améliorer la précision afin de calculer des intervalles de confiance (IC) à 95 %.

Résultats: Notre échantillon était composé de 239 adultes, dont 128 hommes et 111 femmes. L'âge moyen des participants était de 35 ans pour les femmes et de 36 ans pour les hommes. Les femmes ont déclaré des niveaux de confiance plus élevés envers le gouvernement du Québec (66 % comparé à 41 %), les institutions publiques de santé (68 % comparé à 43 %) et les individus à l'extérieur de la communauté (80 % comparé à 74 %). Le niveau de confiance envers le gouvernement fédéral (57 % comparé à 56 %) et dans leur communauté (98 % comparé à 98 %) était similaire chez les femmes et les hommes. Les femmes ont également déclaré des niveaux de satisfaction plus élevés à l'égard de la santé (68 % comparé à 54 %) et des services publics (82 % comparé à 72 %) que les hommes. Les femmes avaient un score de conformité global de 0,75 à 1,44 (IC à 95 % : 0,10-2,60) plus élevé que les hommes. La mesure de conformité qui a montré la différence statistique la plus significative entre les femmes et les hommes ont également obtenu un score de confiance global 0,80 (IC à 95 % : 6-30 %). Les femmes ont également obtenu un score de confiance avec un différence statistiquement significative entre les femmes et les hommes. La seule mesure de confiance avec un différence statistiquement significative entre les femmes et les hommes. La seule mesure de confiance avec un différence statistique ment significative entre les femmes à l'erreur de type 1 de 5 % était la confiance envers le gouvernement du Québec (16 %, IC à 95 % : 1 %-32 %).

Conclusion: Les femmes ont exprimé une plus grande conformité globale aux mesures de santé publique, des niveaux plus élevés de satisfaction à l'égard des services de santé et publics et des niveaux de confiance plus élevés que les hommes. Les différences entre les rôles de genre au sein de la communauté peuvent expliquer ces résultats. Pour obtenir une plus grande conformité, les interventions de santé publique devraient prendre en compte les aspects intersectionnels de l'expérience des groupes minoritaires, en l'occurrence la combinaison entre la religion et le genre.

Acknowledgements:

I would like to express gratitude to my supervisor, Dr. Tracie Barnett, and co-supervisor, Dr. Peter Nugus for allowing me to join their team and guiding me throughout my graduate studies. I would also like to thank my thesis committee members Dr. Fernanda Claudio and Dr. Alexandra de Pokomandy who provided me with useful insights and constructive feedback during my research. Additionally, I would like to thank Geneviève Gore for helping with the search strategy for my literature review, Dr. Tibor Schuster who assisted and guided me through the analysis, and Danny Nguyen who provided me with crucial information from the database to conduct this study. I would like to thank the Department of Family Medicine for providing me with the required quantitative and academic writing skills to complete this thesis.

I would not have been able to write this thesis without the help of my support systems. My buddy and mentor Deanna Chinerman, Dr. Sheri McDowell, and Fio Vialard. I would like to give special thanks to Alexis Mundy, Chalay Walker, and my partner, Craig Bryan, who provided me with emotional support throughout this journey. I would like to thank my inlaws Margaret Plummer and Relva Bryan for assisting me with this transition. Lastly my mother, Velma Bent, who has always been my role model and biggest support, without whom none of this would have been possible.

Contribution of Authors:

I completed this thesis under the supervision of my supervisor, Dr. Tracie Barnett, and cosupervisor, Dr. Peter Nugus. I formulated the original research question and objectives of this project, under the guidance of my supervisors. Geneviève Gore assisted with the search strategy for my literature review and Danny Nguyen provided the data for me to conduct my analyses. My analyses and interpretation of initial results was guided by Dr. Tibor Schuster. My supervisors and thesis committee members reviewed and provided feedback to my initial analyses, and interpretations. I wrote all chapters of this manuscript which was reviewed by my supervisors and thesis committee members. Fio Vialard assisted with the translation of my French abstract.

List of Figures and Tables:

Table 1: Characteristics of Study Participants	36
Table 2: Age Group Distribution of Participants by Gender	40
Figure 1: Age Group Distribution of Participants by Gender	41
Table 3: Municipality Distribution of Participants by Gender	42
Figure 2: Municipality Distribution of Participants by Gender	42
Figure 3: Distribution of Highest Level of Education of Participants by Gender	43
Figure 4: Distribution of Main Occupation of Participants by Gender	44
Table 4: Travel History Participants by Gender	45
Figure 5: Distribution of Travel History of Participants by Gender	46
Table 5: Frequency of Gathering Outside the Household by Gender	47
Figure 6: Frequency of Gathering Outside the Household by Gender	48
Table 6: Levels of Trust in the Different Authorities by Gender	49
Figure 7: Level of Trust in the Federal Government by Gender	51
Figure 8: Level of Trust in the Quebec Government by Gender	52
Figure 9: Level of Trust in Own Community by Gender	53
Figure 10: Level of Trust in Public Health Institutions by Gender	54
Figure 11: Level of Trust in in Individuals outside the Orthodox Jewish Community by	
Gender	55
Table 7: Satisfaction with Health and Public Services by Gender	56
Figure 12: Level of Health Service Satisfaction by Gender	57
Figure 13: Level of Public Service Satisfaction by Gender	58
Table 8: Compliance with COVID-19 Public Health Measures	59
Figure 15: Overall Compliance with COVID-19 Public Health Measures	62
Figure 16a: Compliance with COVID-19 Public Health Measures by Gender	63

Figure 16b: Compliance with COVID-19 Public Health Measures by Gender64
Table 9: Distribution and Frequencies of Transformed Variables used in Regression
Models
Table 10: Bagged Marginal Differences and 95% Confidence Intervals for Overall
Compliance and Trust Scores
Figure 17: Bagged Marginal Differences and 95% Confidence Intervals for Overall
Compliance and Trust Scores
Table 11: Bagged Marginal Differences and 95% Confidence Intervals for Individual Trust
Measures
Figure 18: Bagged Marginal Differences and 95% Confidence Individual Trust
Measures
Table 12: Bagged Marginal Differences and 95% Confidence Intervals for Individual
Compliance Measures
Figure 19: Bagged Marginal Differences and 95% Confidence Intervals for Individual
Compliance Measures
Appendix 1: Enhanced Core Data Elements Survey for Adults
Appendix 2.1: Overall Compliance Score DAG
Appendix 2.2: Overall Trust Score DAG
Appendix 3: Distribution and Frequencies of Transformed Variables used in Regression
Models
Appendix 4.1: Bagged Marginal Differences and 95% Confidence Intervals for Overall
Compliance Score with Missing Data Replaced and Removed100
Appendix 4.2: Bagged Marginal Differences and 95% Confidence Intervals for Overall Trust
Score with Missing Data Replaced and Removed101
Appendix 5.1: 2020 COVID-19 Timeline

Appendix 5.2: 2021-2022 COVID-19 Timeline	03
---	----

List of Abbreviations:

- CITF COVID-19 Immunity Task Force
- COVID-19 Coronavirus Disease 2019
- IPTW- Inverse Probability of Treatment Weighting
- WHO World Health Organization

1. Introduction

Infectious Diseases have had a negative impact on ethnic and minority groups for centuries [3-7]. This impact is thought to be due to risk perceptions, media exposures, level of trust in authorities, cultural diversity, socio-economic vulnerabilities, as well as the level of understanding of regulations [6, 8]. The Coronavirus Disease 2019 pandemic (COVID-19) continues this trend by disproportionately affecting minority groups [8-10]. According to a Canadian private household home finger-prick survey of 11,026 participants between November 2020 and April 2021, being part of a visible minority group was associated with seropositivity for a past COVID-19 infection [10]. As a result of this unequal impact on minority groups, policymakers have discovered that general public health messaging is insufficient to meet the diverse public health needs of minority groups and thereby reduce the spread of the virus [9].

The Orthodox Jewish Community is one ethnoreligious minority group that was severely affected by the COVID-19 pandemic [5-7, 11-13]. Under normal circumstances, infectious disease morbidity, mortality, and hospitalization rates are lower in the Jewish population versus the non-Jewish population, as has been reported for Britain and Israel [11, 14]. COVID-19 seroprevalence was as high as 65% in the strictly Orthodox Jewish community in the United Kingdom between October to December 2020 as opposed to 10.8% and 6.9% seropositivity respectively in London and nationally [7]. Apart from the impact on ethnic and religious minority groups, COVID-19 seropositivity and mortality are associated with sex and gender. This is evidenced by higher COVID-19 mortality rates in males than females [1].

There are concerns that the impact of COVID-19 on the Orthodox Jewish community has resulted in stigma and microaggressions toward the community. The Orthodox Jewish

community is a minority group in which separate gender roles are prescribed by religious rules and cultural precedent. These roles are in accordance with the Halakha (Jewish Law) [8]. The community holds its religious and cultural practices in high regard. It has been proposed that some of these practices as well as public health authorities' poor understanding of the importance of these practices have exacerbated outbreaks in the community. Given the existing disparities in gender, it is even more important to understand the interplay between gender and infectious disease in minority groups.

The Orthodox Jewish community of Montreal, with its various subgroups, will therefore be an ideal community to gain such information - the community is not only a marginalized group severely affected by the pandemic but also a group with defined sex and gender roles based on their religious law. Insights from community members into their sex and gender-specific beliefs and behaviours in relation to the pandemic will assist in informing not only targeted minority group public health messaging but sex and gender-targeted messaging. Moreover, this targeted approach may serve to inform behavioural change messaging for not only the ongoing pandemic but future outbreaks as well. Thus, the aim of this study was to investigate the role of gender in understanding COVID-19 experiences within Orthodox Jewish communities in Montreal.

2. Literature Review

2.1 Infectious Diseases in Minority Groups

A minority group is "a group of people within a society that is either small in number and may have little or no access to social, economical, political, or religious power" [15]. Among minority groups, community transmission of infectious diseases was found to be higher [3]. Regarding COVID-19 specifically, individuals from minority groups were found to be more vulnerable to infections and their consequences [4, 8]. Reasons for this negative impact are multi-factorial relating to levels of trust in different governmental bodies, level of understanding of different messages, modes of communication, as well as socio-economic factors [6, 8]. As a result of the disproportionate impact of COVID-19 on minority groups, public health authorities have identified the necessity of creating and distributing culturally sensitive prevention messages [8]. To develop these messages, a better understanding of the intersecting factors that shed light on lifestyle and belief, and that contribute to compliance within minority groups is necessary.

2.2 Relationship between Sex and Gender Differences and Infectious Diseases

Sex as defined by the Canadian Institute of Health Research is a "set of biological attributes in humans and animals and is primarily associated with physical and physiological features including chromosomes, gene expression, hormone levels and function, and reproductive anatomy" [2]. "It is usually classified as male or female but there are variations in biological attributes that comprise sex and how those attributes are expressed" [2]. Gender as defined by the Canadian Institute of Health Research refers to "the socially constructed roles, behaviours, expressions and identities of girls, women, boys, men, and gender diverse people [2]. It influences how people perceive themselves and each other, how they act and interact, and the

distribution of power and resources in society" [2]. Sex and gender terminology were frequently used interchangeably within the literature, which resulted in confusion. The terminology from the source material was used throughout the review, however, the primary focus of this study remains on gender.

There have been multiple reported sex and gender differences in studies on infectious diseases. Higher case fatality rates were reported in male patients diagnosed with Middle East Respiratory Syndrome [MERS] (2012) and Severe Acute Respiratory Syndrome [SARS] (2003) than in females [16-22]. Sex and gender differences in morbidity and mortality from the influenza virus showed mixed results [18, 23-26].

2.3 Sex and Gender Differences in COVID-19 Infection

There has been inconsistent evidence regarding the gender and sex differences associated with COVID-19 infection [19]. Some studies reported a higher incidence of COVID-19 infection in men [27], while other studies did not show a sex or gender difference in the incidence or prevalence of COVID-19 infections [16, 17, 28]. Case fatality rates were however consistently found to be greater in men than women [16, 17, 29]. The Sex, Gender, and COVID-19 project is one source of sex-disaggregated data that aims to understand the role of sex and gender in relation to the COVID-19 pandemic [30]. Overall, it was found that the number of COVID-19 cases in males equates to that in females, according to sex-disaggregated data gathered from over 183 countries [30]. There was however a difference in COVID-19 mortality, with 15 male deaths for every 10 female deaths, based on data from 129 countries [30].

According to data collected from the World Health Organization (WHO) from 186 countries as of August 21, 2023, the male-to-female ratio of cases was 0.88 while the ratio of male-to-

female deaths was 1.30 [1]. These results are similar in Canada with a male-to-female case ratio of 0.83 and a lower male-to-female death ratio of 1.12 [1]. Statistics from the Government of Canada show a higher number of cases in females aged over 20 than males, except for in the 70 to 79 age group, and higher deaths in males than females aged over 20 except for in the 80 and above age group [31].

2.4 Gender Differences in Compliance with COVID-19 Public Health Measures

The sex disparity of COVID-19 is likely explained both by biological sex differences and gender [32]. Gender is a complex social construct that includes roles, identity, and relations deemed socially acceptable and may influence disease exposure and risk [28, 33]. Gender may therefore be a plausible factor in compliance with COVID-19 public health measures. Other factors thought to contribute to this difference include age, smoking, occupation, chronic illnesses, risk perceptions, income, number of household members, and health-seeking behaviours [10, 19, 21, 34, 35]. In a study conducted in Canada, among the general population, between November 2020 and April 2021, seropositivity was found to be higher in males with a visible minority status, lower level of education, and who resided in a multi-unit dwelling [10]. There was also increased seropositivity among females in healthcare occupations [10].

Based on previous studies, women were more likely to adopt health protective behaviours [35] while men were more likely to engage in high-risk behaviours [36, 37]. Men reported having a lower risk perception of COVID-19 and had higher levels of smoking and alcohol use [28, 35-38]. Women reported practicing physical distancing, mask-wearing, hand-washing, and avoiding crowded gatherings and public places more than men [33, 35, 39-42].

2.5 Compliance with COVID-19 Public Health Measures in Canada

There have been multiple studies done in Canada looking at perceived and actual compliance with COVID-19 public health measures among the general population. In a cross-sectional study done in May 2020, respondents reported a perceived 90% ability to comply with five public health measures [40]. A lower level of confidence was reported among men, younger individuals, and individuals in the workforce [40]. Women reported greater confidence in compliance with reducing contacts (94.6% vs 92.8%), self-isolation (94.9% vs 91.1%), avoiding crowds (94.7% vs 91.9%), self-quarantine (92.7% vs 89.3%), and avoiding public transportation (92.9% vs 88.8%) than did men [40].

In a study conducted in May 2020, mask-wearing in Canada and Quebec was approximately 32.5% and 27% respectively within a twenty-four-hour period [40]. Percentages were higher in individuals with greater risk perceptions, a university-level education, and from multi-generational households [40]. Contact with individuals outside of the household within the last seven days was reported at 24.4% [40]. The highest reported frequency of gathering was once or twice for the week (62%) while the lowest was three or more days (23%) [40]. Higher percentages were reported in younger individuals and individuals with a higher income whilst lower percentages were reported in individuals with higher risk perceptions [40].

In another survey conducted by Statistics Canada using the COVID-19 Antibody and Health Survey between November 2020 and April 2021, six compliance measures were assessed [41]. These measures included frequent hand-washing, mask-wearing in indoor public places, maskwearing in outdoor public places, avoiding crowds and large gatherings, limiting contact with people at high risk, and keeping a two-metre distance from others [41]. Overall, males were found to be less compliant with the measure than females with an adjusted risk ratio of 1.84 (95% CI 1.54-2.19) [41].

Four precautionary measures were investigated in a two-survey study done in June and July 2020, using data collected from the Canadian Perspective Survey Series [42]. These measures were mask-wearing, social distancing, hand-washing, and avoiding crowds [42]. Hand-washing (92-94%) was the most frequently reported compliance measure followed by avoiding crowds (84-89%), and social distancing (82-89%). Mask-wearing (67-84%) was the least practiced measure reported [42]. Older, immigrant, and highly educated individuals were found to be more compliant with the measures [42]. There were significant gender disparities in adherence with the measures, across both surveys [42]. Overall, females reported higher adherence to the measures than males [42]. Social distancing showed the most significant gender difference with adjusted odds ratios of 2.56 and 1.79 in the first and second surveys respectively [42].

In Quebec, a cross-sectional survey conducted between April 15-17, 2020 examined adherence to four governmental physical distancing guidelines: minimizing non-essential errands outside the home, limiting household guests, avoiding social gatherings with more than two people, and social distancing in public (2-metre) [39]. Respondents reported adhering to these physical distancing guidelines almost always on average 48.4% of the time [39]. The highest reported sub-measures were avoiding social gatherings with more than two individuals (87%) and maintaining a 2-metre distance (75.7%) [39]. Adherence with physical-distancing measures was reported to be higher overall among women, workers in non-essential services, and individuals aged seventy and above [39]. While these studies addressed gender differences in

compliance among the general population, they did not consider how gender differences may interplay with the minority groups experience and affect compliance.

2.6 Cultural Traditions in the Orthodox Jewish Community

The Orthodox Jewish community is a close-knit, socio-culturally bound community that prioritizes its religious traditions and communal gatherings [3, 43-45]. The community historically is reported to have crowded households (larger family sizes), low levels of trust in authorities, lower socio-economic levels, and limited access to mainstream media [6, 46]. There is a large emphasis on religious teachings and strict adherence to Halakha (Jewish law). Religious practices include multiple daily prayers with a minyan (quorum of ten men), ritual baths, bible study, in-person Torah education with peer support, gathering with extended families weekly to share meals during the Shabbat, as well as group celebrations of festivities and mournings [6, 44-47]. The community is also known to have high fertility rates (4-7 children) and larger household densities [7, 46, 48].

Gender differences have also been identified which are in keeping with religious traditions. Men pray three times a day in the synagogue while women are not required to do so and are tasked with taking care of the household and child-rearing [6]. Gathering collectively for prayers and worship in the synagogues is an integral part of the community's culture and where information may be shared. When some men were not allowed to go to the synagogue for worship during the restrictions, they reported feeling a loss of purpose [6, 49]. Given these strict gender roles based on Jewish Law, the Orthodox Jewish community is an ideal group to study relationships between gender differences in belief and behaviour within minority groups and compliance with COVID-19 public health measures.

2.7 COVID-19 in the Orthodox Jewish Community

The Orthodox Jewish community has been severely impacted by the COVID-19 pandemic [5-7, 11, 13]. In Israel, the Orthodox Jewish community contributed to 40% seropositivity although the community only made up 12.5% of the population [4, 12]. In a study done in the United Kingdom in October 2020, seroprevalence was estimated at 65% within the Orthodox Jewish population, 10.8% in London, and 6.9% nationally [7]. Another study done in Israel between March 2020 and February 2021 compared COVID-19 seropositivity and mortality among the Arab, ultra-Orthodox Jewish, and general Jewish populations [48]. This study found that COVID-19 mortality was higher in the Arab population compared with the ultra-Orthodox and general Jewish population [48].

2.8 Compliance with COVID-19 Public Health Measures within the Orthodox Jewish Community

Multiple religious traditions within the Orthodox Jewish community require gathering with numerous individuals outside the household. As a result, some of the COVID-19 guidelines issued by the government posed a particular challenge to the community. Some members thought that the public health measures were discriminatory as they were not allowed to follow their religious practices such as studying the Talmud for many hours and communal prayers, which were thought of as virtues within the community [6].

Lockdowns and curfews also prevented religious holiday gatherings and presented a threat to their core values [6]. There was discourse in some communities between the public health guidelines issued by authorities and that relayed by some Rabbis [6]. Historically, gatherings with extended family members and other community members were seen as a protective factor and up to 91% of members from one study believed that religious practices protected them from harm [4, 6]. Despite this, 88% of members from this study perceived that the community still adheres to the measures [6].

A study conducted in Israel between April and May 2020 looked at compliance with COVID-19 public health measures among ultra-Orthodox Jews [4]. The most frequently practiced measures were praying in a minyan according to the public health guidelines (96.5%) and avoiding contact such as shaking hands (91.4%) [4]. The least practiced measures were social distancing (60%) and quarantine (70.5%) [4]. Individuals reported that social distancing was the most difficult measure to be compliant with as both their religious and cultural practices involved large group gatherings [4]. Compliance with public health measures was especially difficult at the start of the pandemic as social distancing and mask-wearing weren't as widespread [3]. While these studies among the Orthodox Jewish community highlighted the overall frequency of compliance with COVID-19 public health measures, they did not take into account how compliance with these measures may vary based on gender.

COVID-19 outbreaks were also thought to be due to the timing of delivery of public health information such as on the Shabbat and on the eve of Jewish festivals [50]. There was also a delay in information delivery depending on the sources of information. Most information was initially distributed by local news stations, the internet, and social media [50]. However, community members primarily used alternative modes of communication, including daily ultra-Orthodox newspapers (32%), ultra-religious internet sites (19%), and ultra-religious radio stations (17%) [6]. Secular internet sites (10%) and newspapers (9%) were the two least reported sources of COVID-19 related information [6].

2.9 Trust in the Government

Governmental trust has been reported to play a role in compliance with public health measures [51, 52]. In a cross-sectional survey done in March 2020 across Canada, France, Great Britain, Germany, Italy, Japan, and the United States, it was found that individuals who reported the government as their most trustworthy source of information had higher levels of trust in governmental actions and compliance with public health measures as opposed to individuals who reported health care providers as their most trusted source [53]. In this study, it was also found that levels of approval of government response and trust towards the government for future decisions were higher in males than females. Females however reported greater satisfaction with government communication than males [53].

Trust in national public health authorities was noted to play a greater role in reducing vaccine hesitancy and increasing intention to comply with public health measures than trust in the government, based on a study done among Canadians between May and June 2020 [54]. Among the different governmental levels in Canada, trust in Federal government officials resulted in a larger increase in individuals' intent to follow public health measures when compared with officials in the municipal and provincial governments [54]. Based on a stratified analysis, it was found that trust in public health institutions was lower in individuals from visible minority groups, women, and Quebec residents [54].

Lower levels of trust have been reported in minority groups which may contribute to their lower predicted level of compliance. Reasons for this include limited representation in governmental bodies, feelings of misunderstanding, and lack of confidence in the government's ability to keep their best interests at heart [5, 55]. The Orthodox Jewish community is thought to have a

lower level of trust in governmental authorities due to historical trauma and is more likely to respond to collaborative than coercive measures [4, 55].

In a study conducted in the United States between December 2020 to January 2021 among Orthodox Jews, the government and local health departments were among the least trusted sources of information [5]. There was also a lower level of trust in mainstream media [5]. Trust was highest among personal physicians, Orthodox Jewish medical groups, and religious leaders due to their cultural safety [5]. Most individuals reported their local communities being their most trusted source of information, while government and local or state health departments were the least trusted [5].

Summary and Rationale of the Study:

In summary, there have been multiple studies investigating the role of sex and gender in compliance with COVID-19 public health measures, and the level of trust in governmental and public health authorities. To our knowledge, there have however been no studies investigating the intersection of gender and compliance with COVID-19 public health measures within the Orthodox Jewish community. This study hopes to address this gap and investigate the role of gender in the differential reporting of COVID-19 experiences, including levels of trust, public and health service satisfaction, and compliance behaviours within Orthodox Jewish communities in Montreal.

3. Methodology

3.1 Study Design

This study is embedded within an interdisciplinary mixed methods cohort study done in partnership with the Orthodox Jewish Community of Montreal. The main study gained approval from the Jewish community of Montreal and was endorsed by a signed letter from Rabbi Weiss, the Chief Rabbi of Montreal.

Recruitment was undertaken at the Refuah V'Chesed clinic, and at community vaccination clinics, all with the support of community partners. Advertisements were made in community newspapers, local flyers, and posters distributed to households, synagogues, and local stores. The Refuah V'Chesed clinic is a well-known and respected clinic among the Orthodox Jewish community and was also a COVID-19 vaccination site, making it an ideal location for recruitment. Specifically, individuals who were members of the Montreal Orthodox Jewish community and who intended to receive the first dose of the COVID-19 vaccine were eligible to participate in the study. Although there were recruitment targets for age and sex strata, all those intending to vaccinate that the team came into contact with (either because they responded to advertisements or because they attended vaccination clinics) were invited to participate. Sex was used as a proxy for gender in our study. Gender roles are strictly defined in this community and align with biological sex. With its breadth of sub-groups and specific gender roles based on Jewish Law, the Orthodox Jewish community of Montreal presented an ideal opportunity to investigate the relationship between gender and communicable disease impact on minority groups. This study employed a cross-sectional design, using data collected from baseline surveys between June 23, 2021, and May 25, 2022.

3.2 Study Population

The Orthodox Jewish community of Montreal consists of approximately 18,525 individuals according to a 2011 household survey conducted by the Jewish Federations of Canada [56]. The community is distributed across numerous subcommunities including Outremont, Côtedes-Neiges, Boisbriand, Côte-Saint-Luc, and Mile-End. Only adult participants aged 18 years or older were retained for the current study. While it is not possible to estimate the number who were eligible to participate over the course of the recruitment period, approximately 47.8% of those who were approached and who were eligible agreed to participate in the baseline survey. The final sample consisted of 239 participants, including 128 men and 111 women.

3.3 Study Tool

Data were collected using the Enhanced Core Data Elements Survey, which is a modified version of the COVID-19 Immunity Task Force (CITF) Core Data Elements Survey. The survey included the following main components: demographics, compliance with public health measures, levels of trust in the community and government, healthcare and public service satisfaction, past medical history, travel history, and COVID-19 symptoms. Demographics included age, sex, occupation, highest level of education, municipality, community, and number of household members. Compliance with public health measures included seven items: mask-wearing, physical distancing, avoiding crowded gatherings and common greetings, limiting contact with high-risk individuals, as well as self-quarantine and self-isolation practices. Participants were asked how often they practiced the following measures since January 2020. Responses were elicited using Likert-type scales with response options "always", "often", "occasionally", "rarely", and "never".

29

Levels of trust in the Federal government, Quebec government, and the community were elicited using Likert-type scales with response options "completely", "some", "not much", and "not at all". Levels of trust in public health institutions and people outside of their community to take care of their needs were also assessed using Likert-type scales, with response options including "a lot", "some", "little", "very little", and "not at all". Finally, levels of satisfaction with health and public services were also assessed using Likert-type scales with response options "very satisfied", "somewhat satisfied", "dissatisfied", and "very dissatisfied". A "do not know" or "do not know/prefer not to say" option was provided for all levels of trust and satisfaction variables. The complete questionnaire can be seen in Appendix 1.

3.4 Statistical Analyses

Statistical Analyses were performed using R Studio 4.2.2. Descriptive statistics were used to present gender differences in compliance measures, levels of trust, health, and public service satisfaction. Descriptive statistics were presented by comparing means and medians for continuous variables, and proportions for categorical variables, by gender. Inverse probability treatment weighting (IPTW), utilizing propensity scores, was used to reduce confounding. Covariates were informed by a directed acyclic graph (DAG) shown in Appendix 2. The inverse probability weights were then inputted into Poisson and Logistic regression models to estimate the association between gender and the overall compliance and trust scores as well as the individual compliance and trust measures. Predictive modelling was used to determine the compliance in men and women respectively. The difference in compliance between women and men was then calculated. Bootstrapping was used for accuracy to determine the 95% confidence intervals. Results were presented using R Studio 4.2.2 and Microsoft Excel.

3.4.1 Outcome Measures

The primary outcome measures were compliance with public health measures, levels of trust, and levels of satisfaction with health and public services.

3.4.2 Transformed Variables

Gender

Participants' sex was collected in the questionnaire with the following options, "male" and "female." A binary variable for gender was created from sex. Male sex was relabelled as men while female sex was relabelled as women.

Crowding Index

A new continuous variable for the crowding index was created. Participants were asked "How many people live in your household?" and "How many bedrooms are in your household?" The crowding index was calculated by dividing the number of individuals reported in each household by the number of bedrooms reported in each household.

Smoking

Participants were asked if they currently smoked or if they currently used e-cigarettes (vape). Responses of yes or no were listed in the questionnaire. A new categorical variable for smoking was created. Individuals who reported smoking or vaping were classified as smokers and individuals who neither smoked nor vaped were classified as non-smokers.

Primary Occupation

A grouped primary occupation categorical variable was created. Participants were asked if they worked in the following occupations for any length of time since January 2020: Hairdressers, barbers, and aestheticians were combined into haircare and aesthetic services. Pharmacy, first responder, hospital, and healthcare services were combined under healthcare. The food service industry and grocery store workers were combined under the food industry. Childcare workers, factory workers, religious specialists, students, transit drivers, and school staff were left unchanged.

Post-Secondary Education

A binary variable for post-secondary education was created. Individuals were asked about their highest completed level of education. Non-university certificates or CEGEP-level diplomas, as well as university undergraduate and graduate degrees, were listed as post-secondary education. Less than Yeshiva, Yeshiva, and trade certificate or apprenticeship were combined and listed as not having a post-secondary education.

Individual Compliance Measures

There were seven individual compliance measures: mask-wearing, physical distancing, avoiding crowded gatherings and common greetings, limiting contact with high-risk individuals, as well as self-quarantine and self-isolation practices. The measures were initially coded as ordinal variables and were then converted to a binary variables for analysis. Likert-type scale responses of "always", "often", and "occasionally" were combined and relabelled as "compliant" while responses of "never" or "rarely" were combined and relabelled as "non-compliant".

Overall Compliance Score

A continuous variable for the overall compliance score was calculated. For each of the seven compliance variables, participants who indicated "occasionally", "often", or "always" following the measures were given a score of one. Participants who indicated "rarely" or "never" following the measures were given a score of zero. Participants who had missing answers for each compliance measure were also given a score of zero as it was inferred that individuals who did not complete the question were more likely to be less compliant with the measure. An overall compliance score was calculated by adding the scores from the seven individual compliance measures. The minimum overall compliance score was zero and the maximum score was seven. This score used a principle similar to the stringency index in a paper studying the variation in government responses to COVID-19 by the Blavatnik School of Government at the University of Oxford [57] and a compliance measure score used in a COVID-19 study conducted by Statistics Canada [10].

Individual Trust Measures

There were five individual trust measures: trust in the Federal government, Quebec government, own community, public health institutions, and individuals outside the Orthodox Jewish community. These measures were initially coded as ordinal variables and were then converted to binary variables for analysis. Likert-type scale responses of "completely" and "some" were combined and relabelled as "trust" while responses such as "not at all" and "not much" were combined and relabelled as "distrust" for responses to trust in the Federal, Quebec government, and own community. Responses of "a lot" and "some" were relabelled as "trust" while responses of "trust in public health institutions and individuals outside the Orthodox Jewish community.

Overall Trust Score

A continuous variable for the overall trust score was created. It included the five trust measures. For the community, Federal, and Quebec governments, Likert-type scale responses of "completely" and "some" were given a score of one. Responses such as "not much", "not at all", and "do not know" were given a score of zero. For levels of trust in public health institutions and individuals outside of the community, Likert-type scale responses of "a lot" and "some" were given a score of one while responses of "little", "very little", and "do not know/prefer not to say" were given a score of zero. Missing responses were again given a score of zero as it was inferred that individuals who did not complete the question had lower levels of trust. An overall trust score was calculated by adding together the scores for the five different levels of trust. The minimum overall trust score was zero and the maximum trust score was five. This score again used a principle similar to the stringency index and COVID-19 compliance measure score [10, 57].

3.4.3 IPTW and Regression Modelling

Dependent and Independent variables

Four regression models were used. Gender was the independent variable for each model while the dependent variables were the individual trust measures, individual compliance measures, overall trust score, and overall compliance score.

Covariates

Covariates for all models included age, post-secondary education, crowding index, smoking history, presence of a family physician, or receipt of flu vaccine within the last year. Overall

trust score was also used as a covariate in the models looking at the association of gender with the individual compliance measures and overall compliance score. The grouped primary occupation was considered as a covariate but excluded from the model due to a large number of missing responses (103), 49 (47.6%) of which were men and 54 (52.4%) of which were women. Age, crowding index, and overall trust score were continuous variables while the other covariates were binary variables (yes/no). Missing responses for the covariates were replaced with the mean for continuous variables and the most frequent category for categorical variables.

Modeling

Propensity scores as defined by Rosenbaum and Rubin were calculated using the above listed covariates and logistic regression models. Inverse probability weights were calculated using the respective propensity scores. The weights were then incorporated into outcome models. Poisson regression was used to model the association between gender and the overall compliance and overall trust score. Logistic regression was used to model the association between gender and the individual compliance and trust measures. Predictive modeling was then done to calculate the overall compliance and trust score in women and men respectively. The mean compliance and trust score for each gender was calculated as well as the difference in mean compliance and trust score between women and men. Predictive modeling was again used to determine the compliance with the individual compliance measures and levels of trust in the different bodies among women and men. The difference in compliance and level of trust between women and men were then calculated for the individual compliance and trust measures. Bootstrapping was used for accuracy in estimating 95% confidence intervals.

3.4.4 Ethics

Human ethics approval for the larger mixed-methods project was granted by McGill University's Institutional Review Board [A05-M33-21B(21-05-028)].

4. <u>Results</u>

4.1 Overall Demographics

The number of respondents who completed the survey was 239. Among them 128 (53.6%) were men and 111 (46.4%) were women (Table 1). The mean age was 36 years, ranging from 18 to 72. Participants were mostly from the Outremont (58%) municipality followed by Mile-End (20%). Boisbriand (10%) and Côte-des-Neiges-NDG (9.8%) showed similar distributions. Most of the respondents reported Yeshiva (52%) as their highest level of education, followed by a non-university certificate or CEGEP-level diploma (30%). The most prominent occupation was a teacher or other school staff (27%) followed by childcare worker (24.8%), and student (22.6%). The majority of individuals did not smoke or vape (92%).

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Age			
Mean [SD]	36.2 [3.9]	35.7 [13.9]	36.0 [3.8]
Median [Q25, Q75]	33.0 (24.0, 44.3)	33.0 (23.0, 46.5)	33.0 (24.0, 45.5)
Min, Max	18.0, 72.0	18.0, 71.0	18.0, 72.0

Table 1. Characteristics of study participa

BMI
Mean [SD]
Median [Q25, Q75)]
Min, Max
Municipality
Outremont
Mile-End
Boisbriand
Côte-des-Neiges-NDG
Côte-Saint-Luc
Community
Belz
Vitnitz
Satmar
Skver
Tosh
Chasidish
Lubavitch

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Yeshivish	1 (0.83%)	4 (3.8%)	5 (2.2%)
Litvish	1 (0.83%)	4 (3.8%)	5 (2.2%)
Bobov	1 (0.83%)	3 (2.9%)	4 (1.8%)
Sephardic	1 (0.83%)	0 (0%)	1 (0.45%)
Education			
Less than Yeshiva (high school)	2 (1.7%)	3 (2.9%)	5 (2.3%)
Yeshiva (high school diploma)	84 (72%)	31 (30%)	115 (52%)
Trade Certificate, Apprenticeship	4 (3.4%)	6 (5.8%)	10 (4.5%)
Non-University Certificate or CEGEP	14 (12%)	52 (50%)	66 (30%)
Diploma	14 (1270)	52 (5076)	00 (3078)
University Undergraduate Degree	7 (6.0%)	7 (6.7%)	14 (6.3%)
Undergraduate Graduate Degree	0 (0%)	3 (2.9%)	3 (1.4%)
Other	6 (5.1%)	2 (1.9%)	8 (3.6%)
Main Occupation			
Teacher or other School Staff	23 (29%)	14 (25%)	37 (27%)
Childcare Worker	9 (11%)	25 (44%)	34 (25%)
Student	21 (27%)	10 (18%)	31 (23%)
Religious Specialist	13 (16%)	0 (0%)	13 (9.6%)
Food Industry	8 (10%)	1 (1.8%)	9 (6.6%)

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Healthcare	2 (2.5%)	4 (7.0%)	6 (4.4%)
Haircare and Aesthetic Services	0 (0%)	3 (5.3%)	3 (2.2%)
Transit Driver	2 (2.5%)	0 (0%)	2 (1.5%)
Factory Worker	1 (1.3%)	0 (0%)	1 (0.74%)
Household Crowding Index			
Mean [SD]	1.6 [0.7]	1.6 [0.7]	1.6 [0.7]
Median [Q25, Q75]	1.7 [1.0, 2.0]	1.7 [1.0, 2.0]	1.7 [1.0, 2.0]
Min, Max	0.3, 3.5	0.2, 3.3	0.2, 3.5
Smoke or Vape			
No	103 (87%)	102 (98%)	205 (92%)
Yes	16 (13%)	2 (1.9%)	18 (8.1%)
Have a Family Physician			
No	42 (37%)	18 (18%)	60 (28%)
Yes	73 (63%)	84 (82%)	157 (72%)
Flu Shot Last Year			
No	112 (94%)	95 (91%)	207 (93%)
Yes	7 (5.9%)	9 (8.7%)	16 (7.2%)

*Missing data excluded from the table

4.2 Gender Differences

4.2.1 Age Group Distribution by Gender

The majority of participants from our study were in the 18-29 age group (45.2%), followed by the 40-49 age group (19.2%), and the 30-39 age group (18.4%). Individuals in the 50-59 age group made up 9.6% of our sample, while individuals 60 years and older made up 7.5% of our sample (Table 2). There was a higher percentage of men than women in the 18-29 (54.6% vs. 45.4%), 30-39 (54.5% vs. 45.5%), and 60 years old and over (66.7% vs. 33.3%) age group (Figure 1). The reverse was true in the 40-49 (47.8% vs 52.2%) and 50-59 (47.8% vs 52.2%) age group.

	Men	Men Women	
	(N=128)	(N=111)	(N=239)
Age Group			
18-29 years old	59 (46.1%)	49 (44.1%)	108 (45.2%)
30-39 years old	24 (18.8%)	20 (18.0%)	44 (18.4%)
40-49 years old	22 (17.2%)	24 (21.6%)	46 (19.2%)
50-59 years old	11 (8.6%)	12 (10.8%)	23 (9.6%)
60 years old and over	12 (9.4%)	6 (5.4%)	18 (7.5%)

Table 2. Age Group Distribution of Participants by Gender

*Missing data excluded from the table



Figure 1. Age Group Distribution of Participants by Gender (N= 239)

4.2.2 Municipality Distribution by Gender

Men reported residing in the Outremont (56.6% vs 43.4%) and Boisbriand (62.5% vs 37.5%) areas more than women (Table 3 and Figure 2). There was an equal distribution of both genders in Mile-End (50% vs 50%). Fewer men reported living in Côte-des-Neiges-NDG (34.8%vs 65.2%) and Côte-Saint-Luc (25% vs 75%).

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Municipality			
Outremont	77 (56.6%)	59 (43.4%)	136 (100%)
Mile-End	24 (50%)	24 (50%)	48 (100%)
Boisbriand	15 (62.5%)	9 (37.5%)	24 (100%)
Côte-des-Neiges-NDG	8 (34.8%)	15 (65.2%)	23 (100%)
Côte-Saint-Luc	1 (25%)	3 (75%)	4 (100%)

Table 3. Municipality Distribution of Participants by Gender

*Missing data excluded from the table



Municipality Distribution across Gender

Figure 2. Municipality Distribution of Participants by Gender (N= 235)

4.2.3 Highest Level of Education by Gender

The most frequent highest level of education reported among women was a non-university or CEGEP level diploma (50%), followed by Yeshiva (30%) (Table 1). The reverse was seen among men, with Yeshiva (71%) being the most frequently reported highest level of education followed by a non-university or CEGEP level diploma (12%) (Table 1 and Figure 3).



Figure 3. Distribution of Highest Level of Education of Participants by Gender (N= 221)

4.2.4 Main Occupation by Gender

The most common occupation reported among men was a teacher or other school staff (29.1%), followed by student (26.6%), and religious specialist (16.5%) (Table 1). Among women, the most commonly reported occupation was childcare worker (43.9%) followed by teacher or other school staff (24.6%), and student (17.5%). Religious specialist, transit driver, and factory worker occupations were solely occupied by men in the study whilst haircare and aesthetic

services were exclusively occupied by women (Figure 4). A total of 103 participants did not answer this question, 49 (47.6%) and 54 (52.4%) of whom were men and women respectively.



Main Occupation by Gender

Figure 4. Distribution of the Main Occupation of Respondents by Gender (N=136)

4.2.5 Travel History by Gender

The majority of travel by our participants was to the United States of America (86%) (Table 4). Men travelled more than women outside of Quebec (55.7% vs 44.3%), within Canada (68.4% vs 31.6%), to the United States of America (55.2% vs 44.8%), Europe (60% vs 40%), and Israel (76% vs 24%) (Figure 5). An individual from each gender travelled to another country, one man to Mexico and one woman to Argentina.

	Men	Women	Overall	
	(N=128)	(N=111)	(N=239)	
Outside Quebec			·	
No	9 (7.44%)	15 (14.4%)	24 (10.7%)	
Yes	112 (92.6%)	89 (85.6%)	201 (89.3%)	
Within Canada				
No	108 (89.3%)	98 (94.2%)	206 (91.6%)	
Yes	13 (10.7%)	6 (5.77%)	19 (8.44%)	
United States of America (USA)				
No	14 (11.6%)	17 (16.3%)	31 (13.8%)	
Yes	107 (88.4%)	87 (83.7%)	194 (86.2%)	
Europe				
No	106 (87.6%)	94 (90.4%)	200 (88.9%)	
Yes	15 (12.4%)	10 (9.62%)	25 (11.1%)	
Israel				
No	102 (84.3%)	98 (94.2%)	200 (88.9%)	
Yes	19 (15.7%)	6 (5.77%)	25 (11.1%)	
Other				
No	120 (99.2%)	103 (99.0%)	223 (99.1%)	
Yes	1 (0.826%)	1 (0.962%)	2 (0.889%)	

Table 4. Travel History of Participants by Gender



Travel History by Gender

Figure 5. Distribution of the Travel History of Participants by Gender (N= 225)

4.2.6 Frequency of Gathering Outside the Household

Among women, the most frequent gathering outside the household was less than once a day (66%) (Table 5 and Figure 6). Conversely, among men, the most frequent gathering outside the household was more than once a day (65%).

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Frequency			
Less than once per day	22 (18.3%)	68 (66.0%)	90 (40.4%)
Once per day	13 (10.8%)	16 (15.5%)	29 (13.0%)
More than once per day	78 (65.0%)	13 (12.6%)	91 (40.8%)
Do not know/Prefer not to say	7 (5.8%)	6 (5.8%)	13 (5.8%)

Table 5. Frequency of Gathering Outside the Household by Gender

*Missing data excluded from the table





Figure 6. Frequency of Gathering Outside the Household by Gender (N= 223)

4.3 Levels of Trust

The levels of trust in the five different groups are shown in Table 6. Levels of Trust in the community and governments were presented by combining the "completely" and "somewhat" responses to trusting the government and community. The "not much" and "not at all" responses were interpreted as distrusting the government and community. Fourteen individuals had missing responses, seven from each gender.

Levels of trust in public health institutions to manage the pandemic and individuals outside the Orthodox Jewish community were calculated by adding together the "a lot" and "somewhat" responses. The "a little" and "very little" responses were interpreted as distrusting public health institutions and individuals outside the community. Eighteen individuals had missing responses, ten men and eight women.

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Federal Government			
Completely	17 (14.2%)	15 (14.4%)	32 (14.3%)
Some	51 (42.5%)	45 (43.3%)	96 (42.9%)
Not much	30 (25.0%)	28 (26.9%)	58 (25.9%)
Not at all	15 (12.5%)	5 (4.81%)	20 (8.93%)
Do not know	7 (5.83%)	11 (10.6%)	18 (8.04%)
Quebec Government			
Completely	17 (14.2%)	16 (15.4%)	33 (14.7%)
Some	33 (27.5%)	53 (51.0%)	86 (38.4%)
Not much	39 (32.5%)	20 (19.2%)	59 (26.3%)
Not at all	24 (20.0%)	7 (6.73%)	31 (13.8%)
Do not know	7 (5.83%)	8 (7.69%)	15 (6.70%)
Own Community			
Completely	87 (72.5%)	82 (78.8%)	169 (75.4%)
Some	30 (25.0%)	20 (19.2%)	50 (22.3%)
Not much	2 (1.67%)	0 (0%)	2 (0.893%)
Not at all	0 (0%)	0 (0%)	0 (0%)
Do not know	1 (0.833%)	2 (1.92%)	3 (1.34%)

Table 6. Levels of Trust in the Different Groups by Gender

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Public Health Institutions			
A lot	21 (17.8%)	21 (20.4%)	42 (19.0%)
Some	30 (25.4%)	49 (47.6%)	79 (35.7%)
Little	26 (22.0%)	17 (16.5%)	43 (19.5%)
Very little	37 (31.4%)	12 (11.7%)	49 (22.2%)
Do not know/Prefer not to say	4 (3.39%)	4 (3.88%)	8 (3.62%)
Individuals Outside the Orthodox			
Jewish Community			
A lot	33 (28.0%)	32 (31.1%)	65 (29.4%)
Some	54 (45.8%)	51 (49.5%)	105 (47.5%)
Little	9 (7.63%)	5 (4.85%)	14 (6.33%)
Very little	10 (8.47%)	4 (3.88%)	14 (6.33%)
Do not know/Prefer not to say	12 (10.2%)	11 (10.7%)	23 (10.4%)

* Missing data excluded from the table

4.3.1 Levels of Trust in the Federal Government

Levels of trust in the Federal government were similar among both genders. The level of trust in the Federal government reported among men was 57% while that reported among women was 58% (Figure 7). Eighteen individuals selected a "do not know" response, eleven of whom were women and seven men.



Figure 7. Level of Trust in the Federal Government by Gender (N= 224)

4.3.2 Levels of Trust in the Quebec Government

Women (66%) reported higher levels of trust in the Quebec government than men (42%) (Figure 8). Fifteen individuals selected a "do not know" response, eight women and seven men.





Figure 8. Levels of Trust in the Quebec Government by Gender (N= 224)

4.3.3 Levels of Trust in the Community

Both genders reported high levels of trust in their community to take care of their needs. Women reported a 98% level of trust in their community while men reported 97% trust (Figure 9). Three individuals answered "did not know" for their level of trust in their community, two women and one man.





Figure 9. Levels of Trust in Own Community by Gender (N= 224)

4.3.4 Levels of Trust in Public Health Institutions

The level of trust in Public Health institutions to manage the pandemic reported among women (68%) was higher than that reported among men (43%) (Figure 10). Eight respondents selected "do not know/prefer not to say" responses, four individuals from each gender.



Figure 10. Level of Trust in Public Health Institutions to Manage the Pandemic by Gender (N= 221)

4.3.5 Levels of Trust in Individuals Outside the Orthodox Jewish Community

There were similar levels of trust in individuals outside the Orthodox Jewish community among both genders. The reported level of trust in women (80%) was however slightly higher than that reported among men (74%) (Figure 11). Twenty-three individuals responded "do not know/prefer not to say", eleven of whom were women and twelve men.



Figure 11. Levels of Trust in Individuals outside the Orthodox Jewish Community, by Gender (N= 221)

4.4 Satisfaction with Health and Public Services

The level of satisfaction with health and public services is shown in Table 7. Satisfaction with health and public services were presented by combining the "very satisfied" and "somewhat satisfied" responses. The "dissatisfied" and "very dissatisfied" responses were interpreted as dissatisfaction with health and public services. Fifteen individuals had missing answers, eight men and seven women.

	Men Women		Overall	
	(=128)	(N=111)	(N=239)	
Health Service Satisfaction		·		
Very satisfied	28 (23.3%)	30 (28.8%)	58 (25.9%)	
Somewhat satisfied	37 (30.8%)	41 (39.4%)	78 (34.8%)	
Dissatisfied	25 (20.8%)	22 (21.2%)	47 (21.0%)	
Very dissatisfied	24 (20.0%)	8 (7.69%)	32 (14.3%)	
Do not know	6 (5.00%) 3 (2.88%)		9 (4.02%)	
Public Service Satisfaction				
Very satisfied	35 (29.2%)	37 (35.6%)	72 (32.1%)	
Somewhat satisfied	52 (43.3%)	49 (47.1%)	101 (45.1%)	
Dissatisfied	6 (5.00%)	5 (4.81%)	11 (4.91%)	
Very dissatisfied	9 (7.50%)	3 (2.88%)	12 (5.36%)	
Do not know	18 (15.0%)	10 (9.62%)	28 (12.5%)	

Table 7. Satisfaction with Health and Public Services by Gender

*Missing data removed from the table

4.4.1 Health Service Satisfaction

The level of satisfaction with health services reported among women (68%) was higher than that reported among men (54%) (Figure 12). Nine individuals selected a "do not know" response, six of whom were men and three women.



Figure 12. Levels of Health Service Satisfaction by Gender (N= 225)

4.4.2 Public Service Satisfaction

The level of public service satisfaction reported among women was 83% while that reported among men was 72% (Figure 13). Twenty-eight individuals responded "do not know", eighteen men and ten women.



Figure 13. Levels of Public Service Satisfaction by Gender (N= 224)

4.5 Compliance with COVID-19 Public Health Measures

Individuals were asked how frequently they practiced the following seven COVID-19 public health measures since January 2020. Responses were elicited using Likert-type scales and are shown in Table 8. Percentages for "often" and "always" responses are collated on the right and used to estimate compliance while "never" and "rarely" responses are collated on the left and used to estimate non-compliance with the measures. Responses for "occasionally" are seen in grey in the middle of the figures (Figures 15 and 16).

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Wear a Mask in Public Places			
Never	4 (3.33%)	2 (1.96%)	6 (2.70%)
Rarely	15 (12.5%)	1 (0.980%)	16 (7.21%)
Occasionally	42 (35.0%)	11 (10.8%)	53 (23.9%)
Often	29 (24.2%)	31 (30.4%)	60 (27.0%)
Always	30 (25.0%)	57 (55.9%)	87 (39.2%)
Practice Physical Distancing			
Never	15 (12.4%)	5 (4.85%)	20 (8.93%)
Rarely	24 (19.8%)	10 (9.71%)	34 (15.2%)
Occasionally	39 (32.2%)	23 (22.3%)	62 (27.7%)

Table 8. Compliance with COVID-19 Public Health Measures

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Often	26 (21.5%)	40 (38.8%)	66 (29.5%)
Always	17 (14.0%)	25 (24.3%)	42 (18.8%)
Limit Contact with High-Risk Individuals			
Never	19 (15.7%)	8 (7.84%)	27 (12.1%)
Rarely	17 (14.0%)	8 (7.84%)	25 (11.2%)
Occasionally	29 (24.0%)	25 (24.5%)	54 (24.2%)
Often	30 (24.8%)	31 (30.4%)	61 (27.4%)
Always	26 (21.5%)	30 (29.4%)	56 (25.1%)
Avoid Crowded Gatherings			
Never	41 (33.9%)	24 (23.5%)	65 (29.1%)
Rarely	28 (23.1%)	13 (12.7%)	41 (18.4%)
Occasionally	29 (24.0%)	25 (24.5%)	54 (24.2%)
Often	11 (9.09%)	32 (31.4%)	43 (19.3%)
Always	12 (9.92%)	8 (7.84%)	20 (8.97%)
Avoid Common Greetings			
Never	34 (28.1%)	16 (16.0%)	50 (22.6%)
Rarely	24 (19.8%)	11 (11.0%)	35 (15.8%)
Occasionally	29 (24.0%)	22 (22.0%)	51 (23.1%)

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Often	22 (18.2%)	29 (29.0%)	51 (23.1%)
Always	12 (9.92%)	22 (22.0%)	34 (15.4%)
Self-Quarantine			
Never	66 (55.5%)	47 (45.6%)	113 (50.9%)
Rarely	11 (9.24%)	10 (9.71%)	21 (9.46%)
Occasionally	11 (9.24%)	12 (11.7%)	23 (10.4%)
Often	0 (0%)	4 (3.88%)	4 (1.80%)
Always	31 (26.1%)	30 (29.1%)	61 (27.5%)
Self-Isolation			
Never	32 (26.4%)	32 (31.7%)	64 (28.8%)
Rarely	10 (8.26%)	15 (14.9%)	25 (11.3%)
Occasionally	14 (11.6%)	8 (7.92%)	22 (9.91%)
Often	5 (4.13%)	6 (5.94%)	11 (4.95%)
Always	60 (49.6%)	40 (39.6%)	100 (45.0%)

*Missing data excluded from the table

4.5.1 Overall Compliance with COVID-19 Public Health Measures

Wearing a mask in public places (66%) was reported overall as the public health measure with the most compliance (Figure 15). The second and third most frequent compliant measures were limiting contact with high-risk individuals (52%) and self-isolation because of possible COVID-19 infection (50%). The least practiced public health measures were physical distancing (48%), self-quarantine because of possible COVID-19 infection (29%) and avoiding crowded gatherings (28%).



Figure 15. Overall Compliance with COVID-19 Public Health Measures

4.5.2 Gender Differences in Compliance with COVID-19 Public Health Measures

Women reported greater compliance with physical distancing (63% vs. 36%), wearing a mask in public places (86% vs 49%), avoiding common greetings (51% vs 28%), and crowded

gatherings (39% vs 19%) (Figure 16a). Women also reported greater compliance with limiting contact with high-risk individuals (60% vs 46%) and self-quarantine (33% vs 26%) (Figure 16b). Men reported greater compliance with self-isolation because of possible COVID-19 infection (54% vs 46%) than women (Figure 16b). Women overall reported greater compliance with six of the seven public health measures.





Figure 16a. Compliance with COVID-19 Public Health Measures by Gender



Figure 16b. Compliance with COVID-19 Public Health Measures by Gender

4.6 IPTW and Regression Models

Poisson regression models were used to estimate the association between gender and the overall compliance and trust scores. Logistic regression models were used to estimate the association between gender and the individual compliance and trust measures. Gender was the independent variable in all models. The individual compliance measures, individual trust measures, overall compliance score, and overall trust score were the dependent variables.

Covariates included age, crowding index, post-secondary education, family physician, flu shot within the last year, and smoking (Table 9). These covariates were used to calculate the

propensity scores and inverse probability weights which were then inputted in the outcome models. Predictive modelling was used to determine compliance and level of trust for each gender. The differences in compliance and trust between women and men were calculated and 95% confidence intervals derived from bootstrapping. The missing responses for post-secondary education, family physician, and flu shot within the last year were replaced with the most frequent category for each gender. Missing responses for the crowding index were replaced by the mean for each gender. Appendix 3 shows the table with missing data not replaced.

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Age			
Mean [SD]	36.2 [13.9]	35.7 [13.9]	36.0 [13.8]
Median [Q25, Q75]	33.0 [24.0, 44.3]	33.0 [23.0, 46.5]	33.0 [24.0, 45.5]
Min, Max	18.0, 72.0	18.0, 71.0	18.0, 72.0
Crowding Index*			
Mean [SD]	1.62 [0.647]	1.60 [0.687]	1.61 [0.665]
Median [Q25, Q75]	1.65 [1.00, 2.00]	1.60 [1.00, 2.00]	1.62 [1.00, 2.00]
Min, Max	0.250, 3.50	0.200, 3.33	0.200, 3.50
Post-Secondary Education*			
No	101 (78.9%)	40 (36.0%)	141 (59.0%)

Table 9. Distribution and Frequencies of Transformed Variables used in Regression Models

	Men	Women	Overall
	(N=128)	(N=111)	(N=239)
Yes	27 (21.1%)	71 (64.0%)	98 (41.0%)
Family Physician*			
No	42 (32.8%)	18 (16.2%)	60 (25.1%)
Yes	86 (67.2%)	93 (83.8%)	179 (74.9%)
Flu Shot within Last Year*			
No	121 (94.5%)	102 (91.9%)	223 (93.3%)
Yes	7 (5.47%)	9 (8.11%)	16 (6.69%)
Smoking*			
No	112 (87.5%)	109 (98.2%)	221 (92.5%)
Yes	16 (12.5%)	2 (1.80%)	18 (7.53%)
Overall Compliance Score			
Mean [SD]	3.94 [2.13]	4.60 [2.09]	4.25 [2.13]
Median [Q25, Q75]	4.00 [2.75, 6.00]	5.00 [3.00, 6.00]	5.00 [3.00, 6.00]
Min, Max	0, 7.00	0, 7.00	0, 7.00
Overall Trust Score			
Mean [SD]	2.91 [1.52]	3.46 [1.61]	3.17 [1.58]
Median [Q25, Q75]	3.00 [2.00, 4.00]	4.00 [2.00, 5.00]	3.00 [2.00, 5.00]
Min, Max	0, 5.00	0, 5.00	0, 5.00

*Missing data for categorical variables replaced with the most frequent category *Missing data for continuous variable replaced with mean

4.6.1 Overall Compliance and Trust Score

The bagged marginal differences (aggregated bootstrap results) and 95% confidence intervals for the overall compliance and trust score, in women minus men, are seen in Table 10 and Figure 17. Women had a 0.75 (95% CI 0.10-1.47) higher overall compliance score than men. Women also had a 0.80 (95% CI 0.35-1.21) higher overall trust score than men. These results were statistically significant at a 5% type 1 error level. Results with missing data removed instead of replaced are shown in Appendix 4.

 Table 10. Bagged Marginal Differences and 95% Confidence Intervals for Overall Compliance and

 Trust Scores

Scores	Bagged Marginal Difference (W-M)	Lower 95% CI	Upper 95%CI
Overall Compliance	0.75	0.10	1.47
Overall Trust	0.80	0.35	1.21



Bagged Marginal Difference in Overall Compliance and Trust Score, with 95% Confidence Intervals

Figure 17. Bagged Marginal Differences and 95% Confidence Intervals for Overall Compliance and Trust Scores

4.6.2 Individual Trust Measures

The bagged marginal differences and 95% confidence intervals for the individual trust measures are shown in Table 11 and Figure 18. Women had higher levels of trust in the Federal government (11%, 95% CI -3%-25%), Quebec government (16%, 95% CI 1%-32%), and public health institutions (3%, 95% CI -11%-18%) than men. There was no gender difference in the level of trust in their own community (0%, 95% CI -2%-2%). Women had a lower level of trust in individuals outside the Orthodox Jewish community than men (Table 11 and Figure 18). The only individual trust measure that showed a statistically significant difference at a 5%

type 1 error was trust in the Quebec Government. All other trust measures showed inconclusive results.

Trust Measures	Bagged Marginal Difference (W-M)	Lower 95% CI	Upper 95%CI
Federal Government	0.11	-0.03	0.25
Quebec Government	0.16	0.01	0.32
Own Community	0.00	-0.02	0.02
Public Health Institutions	0.03	-0.11	0.18
Individuals outside the Orthodox	-0.01	-0.12	0.11
Jewish Community			

Table 11. Bagged Marginal Differences and 95% Confidence Intervals for Individual Trust Measures



Figure 18. Bagged Marginal Differences and 95% Confidence Individual Trust Measures

4.6.3 Individual Compliance Measures

Bagged marginal differences and 95% confidence intervals for the individual compliance measures are seen in Table 12 and Figure 19. Women had higher compliance with self-isolation (3%, 95% CI -14%-18%), practicing physical distancing (6%, 95% CI -8%-19%), wearing a mask in public places (7%, 95% CI 0%-16%), limiting contact with high-risk individuals (8%, -9%-23%), avoiding crowded gathering (5%, 95% CI -12%-22%) and common greetings (21%, 95% CI 5%-36%), than men. Women were less compliant with self-quarantine than men. The individual compliance measure that showed the most significant difference between women and men was avoiding common greetings. This finding was also consistent with statistical tests. The other compliance measures showed inconclusive results.

Table	12.	Bagged	Marginal	Differences	and	95%	Confidence	Intervals	for	Individual	Compliance
Measur	es										

Trust Measures	Bagged Marginal Difference (W-M)	Lower 95% CI	Upper 95%CI
Self-Quarantine	-0.02	-0.18	0.13
Self-Isolation	0.03	-0.14	0.18
Limit Contact with High-Risk	0.08	-0.09	0.23
Individuals			
Avoid Common Greetings	0.21	0.05	0.36
Avoid Crowded Gatherings	0.05	-0.12	0.22
Practice Physical Distancing	0.06	-0.08	0.19
Wear a Mask in Public Places	0.07	0.00	0.16



Figure 19. Bagged Marginal Differences and 95% Confidence Intervals for Individual Compliance Measures
5.0 Discussion

Our study explored the role of gender in the differential reporting of COVID-19 experiences, including levels of trust in differing authorities, health and public service satisfaction, and compliance behaviours, within adults in the Orthodox Jewish community of Montreal. This was done through the use of descriptive statistics, IPTW and regression models. Our findings suggest that gender plays a meaningful role in understanding COVID-19 experiences within the community and therefore incorporating gender-sensitive messaging in future public health campaigns for infectious diseases within minority groups would be beneficial.

Among the seven compliance measures, women reported higher overall compliance with six measures. These measures were physical distancing (63% vs. 36%), wearing a mask in public places (86% vs 49%), avoiding common greetings (51% vs 28%), and crowded gatherings (39% vs 19%), limiting contact with high-risk individuals (60% vs 46%) and self-quarantine (33% vs 26%). Men reported greater compliance with self-isolation (54% vs 46%) than women. The data supports previous research findings that women were overall more compliant with public health measures than men [33, 35, 39-42].

A study conducted among the general population in Canada assessing the perceived ability to comply with five public health measures also showed gender differences with increased compliance in women [40]. The Canadian study however reported higher frequencies of compliance in both genders and a less significant difference in response between genders. In the Canadian study, women reported greater confidence in compliance with reducing contacts (94.6% vs 92.8%), self-isolation (94.9% vs 91.1%), avoiding crowds (94.7% vs 91.9%), self-quarantine (92.7% vs 89.3%), and avoiding public transportation (92.9% vs 88.8%) than men

[40]. These findings suggest that although gender differences persist within the Orthodox Jewish community, the intersection of gender and the minority group experience could have resulted in lower reported compliance and more significant gender differences in compliance.

After IPTW and regression models, women in our study were found to have a 0.75 (95% CI 0.10-1.47) higher overall compliance score than men. The measure that showed the most and statistically significant difference between women and men was avoiding common greetings (21%, 95% CI 5%-36%). The significant difference between avoiding common greetings among women and men could be explained by the different gender roles in the community and the frequency of gathering outside the household. Men mostly gathered multiple times a day outside the household while women frequently gathered less than once a day. Men are also tasked with more religious duties and are required to gather in a quorum of ten men and pray multiple times a day in the synagogue while women are predominantly tasked with child-rearing and taking care of the household [6]. Since women are predominantly at home and possibly have fewer social interactions, it is more likely that women would avoid common greetings as opposed to men, resulting in this gender difference.

The higher overall compliance score in women could also be explained by a higher level of education, their occupation, and having a family physician. A higher level of education was a factor that resulted in increased compliance among the general Canadian population [40]. In our study, post-secondary education was higher among women possibly resulting in increased compliance. Women in our study also reported having a family physician and working in the healthcare field more than men. Healthcare workers are required to follow COVID-19 measures at work and may therefore continue practicing these measures outside of work thereby increasing compliance. Having a family physician could also assist in building trust

with health authorities and increase the likelihood of following public health measures among women.

In our study, wearing a mask in public places (66%) was reported as the most frequent compliance measure, among both genders, followed by limiting contact with high-risk individuals (52%), then self-isolation because of possible COVID-19 infection (50%). Physical distancing (48%) and avoiding common greetings (38%) were the fourth and fifth most practiced measures respectively, while self-quarantine (29%) and avoiding crowded gatherings (28%) were the least. Our results seemed to oppose findings from a recent Canadian study conducted among the general population in 2020 [42] where mask-wearing was reported as the least practiced measure followed by avoiding crowds and then social distancing [42]. The conflicting results may be explained by the time period in which the studies were both done. In 2020, in the initial stages of the pandemic, there was a greater focus on stay-at-home initiatives, avoiding gatherings, and closures of non-essential businesses which explains the results of the initial study (Appendix 5.1). In 2021, quarantine, isolation, and physical distancing guidelines were reduced while mask-wearing guidelines were prioritized (Appendix 5.2). Differences in public health guidelines during these two time periods could account for the difference in compliance with mask-wearing seen in these two studies.

In a study done among the Orthodox Jewish community in May 2020, praying in a minyan according to the public health guidelines (96.5%) and avoiding contact such as shaking hands (91.4%) were the two most frequently practiced public health measures [4]. The two least practiced measures were social distancing (60%) and quarantine (70.5%), which is similar to the findings from our study [4]. These results may reflect the strong religious values and communally centred culture within the community which favour large gatherings for worship

and celebrations. Social distancing would therefore be difficult to implement due to the importance of these large gatherings. The Orthodox Jewish community historically has also used its religious practices and communal gatherings to navigate difficult times [6]. As a result, practicing physical distancing and self-quarantining may have been perceived as counterproductive to their holistic well-being therefore resulting in less compliance with this measure.

The highest level of trust reported in our sample was in the community, followed by individuals outside the Orthodox Jewish community. The level of trust in the community was similar among both genders while the level of trust in individuals outside the community was slightly higher among women. Trust in public health institutions was identified as the third most trusted authority among women and fourth among men. Overall women showed higher levels of trust in both governments when compared with men. This finding was converse to a study across five countries which found that men had higher levels of trust in the government for future decision-making than females [53]. Our finding which showed a higher level of trust in the Orthodox Jewish community over government bodies and local public health institutions was however consistent with previous studies [5, 55].

Among governmental institutions, women had higher levels of trust in the Quebec government (66%) than the Federal government (58%) while men had higher levels of trust in the Federal government (57%) than the Quebec government (42%). These results suggest that messages from the Quebec government could be used to target more women while messaging from the Federal government could be used to target more men. The men in the community travelled outside of Canada more frequently than women, and travel guidelines across international borders were governed by the Federal government. This could possibly explain why men

reported greater trust in the Federal government than in the Quebec government, as their travel was contingent on Federal laws.

Trust in public health institutions was also higher among women (68%) than men (43%). Due to women's gender role as the primary caretakers for children, they could have had increased contact with family physicians, for wellness visits and vaccinations, than men. As a result of these increased visits, they may have developed a level of trust in their family physicians which translated to trust in public health institutions. Women also reported higher satisfaction with health and public services than men. Both genders however reported having a 15-20% higher satisfaction with public services than health services. This finding suggests that further work needs to be done to explore and address the discrepancy between satisfaction with health and public services among both genders.

On further regression analysis, women had a 0.80 (95% CI 0.35-1.21) higher overall trust score than men. The only trust measure that showed a statistically significant difference between women and men was trust in the Quebec Government (16%, 95% CI 1%-32%). Women have more contact with the educational and health systems, than men in the community, which may be multifactorial but also due to their child-rearing responsibilities. Education and health services are predominantly overseen by the provincial government. The increased contact of women with these services could have contributed to their increased satisfaction with these services and therefore higher level of trust in the Quebec government.

Our study suggests that to achieve greater compliance, public health interventions may need to address the intersectional aspects of minority group experience, in this case, the combination of religion and gender, and how this affects behaviours related to communicable diseases.

77

Some recommendations for this problem include inclusivity of the community in the planning and implementation of these public health campaigns. Engaging and collaborating with members and leaders from the community, such as Rabbis, could be useful in delivering more culturally and gender-sensitive messages. Using local sources of information such as newspapers, radio stations, and flyers could furthermore help with the delivery of information. Timing of delivery of public health information before Shabbat and before major holidays could also help in effective planning and could reduce delays in information delivery.

There were several limitations identified during the study. Only adults who intended to receive the COVID-19 vaccine were included in the study, which means that our sample may have predominantly included individuals with high health-seeking behaviours. As a result, the level of compliance and trust reported in our study may be overestimated. Our study was also done at a specific time during the pandemic and does not account for how these measures may have changed over time. Given the large number of missing responses for occupation, this variable was excluded as a covariate in our study. The exclusion of occupation from our analysis could have affected the estimate of the effect of gender on the different compliance and trust measures. Additionally, our sample size was smaller than forecasted and power may have been limited to generate statistically significant results for the compliance and trust measures in the regression models. Our study did have some strengths to counter these limitations. The use of Inverse Probability of Treatment Weighting in our analysis removed the effect of confounders while resampling techniques such as bootsrapping was used to construct confidence intervals and offer insights into the variability and uncertainty of our results.

Although our study highlighted gender discrepancies among the multiple measures, qualitative studies are recommended for follow-up to gain a better understanding of how men and women

from the community interpret these results. These studies could provide insight into the differing levels of trust between the provincial and Federal governments and how to adapt governmental messages for each gender. Reasons behind the lower levels of satisfaction with health and public services could additionally be further explored.

6.0 Knowledge Translation

Findings from this project will be used to aid the qualitative interviews in the broader interdisciplinary mixed methods cohort study. The results will be communicated and discussed with community partners and the Advisory Group to develop gender and culturally-sensitive guides for policies and practices, enhancing public health campaigns for minority groups. Study findings will be shared through presentations and workshops with the Jewish Community Council of Montreal, Canadian Immunity Task Force (CITF), Public Health Agency of Canada, and the Institut national de santé publique du Québec. Additionally, findings will be submitted to academic journals for publication.

7.0 Conclusion

Women from the Orthodox Jewish community expressed greater overall compliance with public health measures, higher levels of satisfaction with health and public services, and higher levels of trust in the different authorities than men. Our study suggests that differences in gender roles within the community may have an impact on these findings. Follow-up qualitative studies done in partnership with the community to further explore these gender differences would be informative in developing and delivering future public health messages.

References

World Health Organization. Sex Ratio for COVID-19 Cases and Deaths [Internet].
 Geneva: World Health Organization; 2023 [updated 21 August 2023; cited 2023 29 August].
 Available from:

https://app.powerbi.com/view?r=eyJrIjoiYWRiZWVkNWUtNmM0Ni00MDAwLTljYWMt N2EwNTM3YjQzYmRmIiwidCI6ImY2MTBjMGI3LWJkMjQtNGIzOS04MTBiLTNkYzI4 MGFmYjU5MCIsImMiOjh9.

Canadian Institutes of Health Research. Definitions of Sex and Gender [Internet].
 Canada Government of Canada; 2015 [cited 2023 July 10]. Available from: <u>https://cihr-irsc.gc.ca/e/47830.html</u>.

Zyskind I, Rosenberg AZ, Zimmerman J, Naiditch H, Glatt AE, Pinter A, et al.
 SARS-CoV-2 Seroprevalence and Symptom Onset in Culturally Linked Orthodox Jewish
 Communities Across Multiple Regions in the United States. JAMA Netw Open.
 2021;4(3):e212816.

Weiden F, Levinsky M, Schiff M, Becker N, Pat-Horenczyk R, Benbenishty R.
 COVID-Related Concerns, the Need for Help, and Perceived Microaggression among Young
 Ultra-Orthodox Jewish Respondents in Israel. Int J Environ Res Public Health. 2021;18(12).

5. Carmody ER, Zander D, Klein EJ, Mulligan MJ, Caplan AL. Knowledge and Attitudes Toward Covid-19 and Vaccines Among a New York Haredi-Orthodox Jewish Community. J Community Health. 2021;46(6):1161-9.

 Adini B, Cohen Y, Spitz A. The Relationship between Religious Beliefs and Attitudes towards Public Health Infection Prevention Measures among an Ultra-Orthodox Jewish Population during the COVID-19 Pandemic. Int J Environ Res Public Health. 2022;19(5).

81

7. Gaskell KM, Johnson M, Gould V, Hunt A, Stone NR, Waites W, et al. SARS-CoV-2 seroprevalence in a strictly-Orthodox Jewish community in the UK: A retrospective cohort study. Lancet Reg Health Eur. 2021;6:100127.

Vanhamel J, Meudec M, Van Landeghem E, Ronse M, Gryseels C, Reyniers T, et al.
 Understanding how communities respond to COVID-19: experiences from the Orthodox
 Jewish communities of Antwerp city. Int J Equity Health. 2021;20(1):78.

9. Kalagy T, Abu-Kaf S, Braun-Lewensohn O. Effective Ways to Encourage Health-Care Practices among Cultural Minorities in Israel during the COVID-19 Pandemic. Int J Environ Res Public Health. 2021;18(18).

10. Bushnik T, Earl S, Clark J, Cabot J. COVID-19 infection in the Canadian household population. Health Rep. 2022;33(4):24-33.

 Schroeder H, Numa R, Shapiro E. Promoting a Culturally Adapted Policy to Deal with the COVID-19 Crisis in the Haredi Population in Israel. J Racial Ethn Health Disparities. 2022;9(6):2508-17.

12. Romem A, Pinchas-Mizrachi R, Zalcman BG. Utilizing the ACCESS Model to Understand Communication With the Ultraorthodox Community in Beit Shemesh During the First Wave of COVID-19. J Transcult Nurs. 2021;32(6):647-54.

Hananel R, Fishman R, Malovicki-Yaffe N. Urban diversity and epidemic resilience:The case of the COVID-19. Cities. 2022;122:103526.

14. Staetsky LD. Elevated Jewish Mortality from Coronavirus in England and Wales: An Epidemiological and Demographic Detective Story. Contemp Jew. 2021;41(1):207-28.

15. Government of Canada. Anti-racism lexicon [Internet]. Canada: Government of Canada; 2023 [updated 11 September 2023; cited 2023 November 16]. Available from: https://www.canada.ca/en/department-national-defence/services/systemic-racism-

discrimination/anti-racism-toolkit/anti-racism-lexicon.html.

82

16. Green MS, Nitzan D, Schwartz N, Niv Y, Peer V. Sex differences in the case-fatality rates for COVID-19-A comparison of the age-related differences and consistency over seven countries. PLoS One. 2021;16(4):e0250523.

17. Jin JM, Bai P, He W, Wu F, Liu XF, Han DM, et al. Gender Differences in PatientsWith COVID-19: Focus on Severity and Mortality. Front Public Health. 2020;8:152.

 Penna C, Mercurio V, Tocchetti CG, Pagliaro P. Sex-related differences in COVID-19 lethality. Br J Pharmacol. 2020;177(19):4375-85.

19. Gebhard C, Regitz-Zagrosek V, Neuhauser HK, Morgan R, Klein SL. Impact of sex and gender on COVID-19 outcomes in Europe. Biol Sex Differ. 2020;11(1):29.

20. Ranjan J, Ravindra A, Mishra B. Gender and genetic factors impacting COVID-19 severity. J Family Med Prim Care. 2021;10(11):3956-63.

21. Ambrosino I, Barbagelata E, Ortona E, Ruggieri A, Massiah G, Giannico OV, et al. Gender differences in patients with COVID-19: a narrative review. Monaldi Arch Chest Dis. 2020;90(2).

22. Pradhan A, Olsson PE. Sex differences in severity and mortality from COVID-19: are males more vulnerable? Biol Sex Differ. 2020;11(1):53.

Klein SL, Dhakal S, Ursin RL, Deshpande S, Sandberg K, Mauvais-Jarvis F.Biological sex impacts COVID-19 outcomes. PLoS Pathog. 2020;16(6):e1008570.

24. Jin S, Jiang C, Xia T, Gu Z, Yu H, Li J, et al. Age-dependent and sex-dependent differences in mortality from influenza-associated cardiovascular diseases among older adults in Shanghai, China: a population-based study. BMJ Open. 2022;12(9):e061068.

25. Karolyi M, Pawelka E, Kelani H, Funk GC, Lindner B, Porpaczy C, et al. Gender differences and influenza-associated mortality in hospitalized influenza A patients during the 2018/19 season. Infection. 2021;49(1):103-10.

Giurgea LT, Cervantes-Medina A, Walters KA, Scherler K, Han A, Czajkowski LM,
 et al. Sex Differences in Influenza: The Challenge Study Experience. J Infect Dis.
 2022;225(4):715-22.

27. Vahidy FS, Pan AP, Ahnstedt H, Munshi Y, Choi HA, Tiruneh Y, et al. Sex differences in susceptibility, severity, and outcomes of coronavirus disease 2019: Cross-sectional analysis from a diverse US metropolitan area. PLoS One. 2021;16(1):e0245556.

28. Ya'qoub L, Elgendy IY, Pepine CJ. Sex and gender differences in COVID-19: More to be learned! Am Heart J Plus. 2021;3:100011.

29. Channappanavar R, Fett C, Mack M, Ten Eyck PP, Meyerholz DK, Perlman S. Sex-Based Differences in Susceptibility to Severe Acute Respiratory Syndrome Coronavirus Infection. J Immunol. 2017;198(10):4046-53.

30. The Sex GaC-P. The COVID-19 Sex-Disaggregated Data Tracker [Internet]. The Sex, Gender and COVID-19 Project; 2022 [updated 15 September 2022; cited 2023 10 July]. Available from: <u>https://globalhealth5050.org/the-sex-gender-and-covid-19-project/the-data-tracker/</u>.

31. Government of Canada. COVID-19 Epidemiology Update: Summary [Internet]. Canada: Government of Canada; 2023 [updated 18 July 2023; cited 2023 23 July]. Available from: <u>https://health-infobase.canada.ca/src/data/covidLive/Epidemiological-summary-of-</u> <u>COVID-19-cases-in-Canada-Canada.ca.pdf</u>.

32. Haitao T, Vermunt JV, Abeykoon J, Ghamrawi R, Gunaratne M, Jayachandran M, et al. COVID-19 and Sex Differences: Mechanisms and Biomarkers. Mayo Clin Proc. 2020;95(10):2189-203.

33. Griffith DM, Sharma G, Holliday CS, Enyia OK, Valliere M, Semlow AR, et al. Men and COVID-19: A Biopsychosocial Approach to Understanding Sex Differences in Mortality and Recommendations for Practice and Policy Interventions. Prev Chronic Dis. 2020;17:E63. 34. Galasso V, Pons V, Profeta P, Becher M, Brouard S, Foucault M. Gender differences in COVID-19 attitudes and behavior: Panel evidence from eight countries. Proc Natl Acad Sci U S A. 2020;117(44):27285-91.

35. Tan J, Yoshida Y, Ma KS, Mauvais-Jarvis F, Lee CC. Gender differences in health protective behaviours and its implications for COVID-19 pandemic in Taiwan: a population-based study. BMC Public Health. 2022;22(1):1900.

36. Baker P, White A, Morgan R. Men's health: COVID-19 pandemic highlights need for overdue policy action. Lancet. 2020;395(10241):1886-8.

37. Sharma G, Volgman AS, Michos ED. Sex Differences in Mortality From COVID-19Pandemic: Are Men Vulnerable and Women Protected? JACC Case Rep. 2020;2(9):1407-10.

38. Lewis A, Duch R. Gender differences in perceived risk of COVID-19. Soc Sci Q.2021;102(5):2124-33.

39. Gouin JP, MacNeil S, Switzer A, Carrese-Chacra E, Durif F, Knäuper B. Sociodemographic, social, cognitive, and emotional correlates of adherence to physical distancing during the COVID-19 pandemic: a cross-sectional study. Can J Public Health.

2021;112(1):17-28.

40. Brankston G, Merkley E, Fisman DN, Tuite AR, Poljak Z, Loewen PJ, et al. Sociodemographic disparities in knowledge, practices, and ability to comply with COVID-19 public health measures in Canada. Can J Public Health. 2021;112(3):363-75.

41. Cabot J, Bushnik T. Compliance with precautions to reduce the spread of COVID-19 in Canada. Health Rep. 2022;33(9):3-10.

 Jehn A, Stackhouse M, Zajacova A. COVID-19 Health Precautions: Identifying Demographic and Socio-Economic Disparities and Changes over Time. Can Public Policy. 2021;47(2):252-64. 43. Zalcberg Block S, Zalcberg S. Religious Minorities' Perceptions of Official COVID19 Health Guidelines: The Case of Ultra-Orthodox Society in Israel. J Relig Health.
2023;62(1):408-27.

Zalcberg S, Block SZ. COVID-19 Amongst the Ultra-Orthodox Population in Israel:
An Inside Look into the Causes of the High Morbidity Rates. Contemp Jew. 2021;41(1):99121.

45. Muravsky NL, Betesh GM, McCoy RG. Religious Doctrine and Attitudes Toward Vaccination in Jewish Law. J Relig Health. 2023;62(1):373-88.

46. Birenbaum-Carmeli D, Chassida J. Covid-19 in Israel: socio-demographic
characteristics of first wave morbidity in Jewish and Arab communities. Int J Equity Health.
2020;19(1):153.

47. Trencher ML. The Orthodox Jewish Community and the Coronavirus: Halacha Grapples with the Pandemic. Contemp Jew. 2021;41(1):123-39.

48. Muhsen K, Na'aminh W, Lapidot Y, Goren S, Amir Y, Perlman S, et al. A nationwide analysis of population group differences in the COVID-19 epidemic in Israel, February 2020-February 2021. Lancet Reg Health Eur. 2021;7:100130.

49. Saban M, Myers V, Shachar T, Miron O, Wilf-Miron RR. Effect of Socioeconomic and Ethnic Characteristics on COVID-19 Infection: the Case of the Ultra-Orthodox and the Arab Communities in Israel. J Racial Ethn Health Disparities. 2022;9(2):581-8.

50. Kasstan B, Letley L, Mounier-Jack S, Klynman N, Gaskell KM, Eggo RM, et al. Tailoring immunisation programmes in a time of SARS-CoV-2: What can be learnt by comparing the findings of childhood and COVID-19 vaccine evaluation studies in an underserved population? Public Health Pract (Oxf). 2022;4:100287. 51. Chan HF, Brumpton M, Macintyre A, Arapoc J, Savage DA, Skali A, et al. How confidence in health care systems affects mobility and compliance during the COVID-19 pandemic. PLoS One. 2020;15(10):e0240644.

52. Goren T, Vashdi DR, Beeri I. "Apples and Oranges": Examining Different Social
Groups' Compliance With Government Health Instructions During the COVID-19 Pandemic.
Int J Health Policy Manag. 2022;11(7):1172-86.

53. Vardavas C, Odani S, Nikitara K, El Banhawi H, Kyriakos C, Taylor L, et al. Public perspective on the governmental response, communication and trust in the governmental decisions in mitigating COVID-19 early in the pandemic across the G7 countries. Prev Med Rep. 2021;21:101252.

54. Cooper CA. Vaccine hesitancy and respect for public health measures: Citizens' trust in politicians and public servants across national, subnational and municipal levels of government. SSM Popul Health. 2023;22:101386.

55. Slobodin O, Cohen O. A culturally-competent approach to emergency management: What lessons can we learn from the COVID-19? Psychol Trauma. 2020;12(5):470-3.

56. Sahar C. 2011 National Household Survey Analysis

The Jewish Community of Montreal [Internet]. Canada: Jewish Federations of Canada; 2014 [updated 14 September 2023; cited 2023 23 July]. Available from:

https://www.federationcja.org/en/jewish montreal/demographics/.

57. Hale T, Petherick A, Phillips T, Anania J, Andretti de Mello B, Angrits N, et al. "Variation in government responses to COVID-19" Version 15 [Internet]. Blavatnik School of Government: University of Oxford; 2023 [updated June 2023; cited 2023 2 October]. Available from: <u>https://www.bsg.ox.ac.uk/sites/default/files/2023-06/BSG-WP-2020-032-</u> v15.pdf.

Appendices

Appendix 1: Enhanced Core Data Elements Survey for Adults

		LUBAVITCH01
1.	Which	BELZ
	community do	SKVER
	you belong to?	SATMAR04
	[PLEASE	TOSH
	CIRCLE]	ULTRA-ORTHODOX (HAREDI)
		SEPHARDIC
		VIZNIIZ
		YESHIVISH
		$\begin{array}{c} \text{LII VISH} \\ \text{CHASIDISH} (\text{OTUEP}) \end{array} $
		PREFER NOT TO ANSWER 13
2	What is your	
2.	postal code?	
	postal code.	
3.	What is the	LESS THAN YESHIVA (HIGH SCHOOL) GRADUATION01
	highest level of	YESHIVA (HIGH SCHOOL) GRADUATION02
	have completed?	TRADE CERTIFICATE, VOCATIONAL SCHOOL,
		OR APPRENTICESHIP TRAINING03
	[PLEASE	NON-UNIVERSITY CERTIFICATE OR
	CIRCLE THE NUMBER]	DIPLOMA FROM A COMMUNITY COLLEGE (CEGEP)04
		UNIVERSITY UNDERGRADUATE DEGREE05
		UNIVERSITY GRADUATE DEGREE
		(MASTERS/PHD)06
		OTHER – PLEASE SPECIFY07
		PREFER NOT TO ANSWER

4.	How many people live in your household?	NUMBER
5.	How many bedrooms are in your household?	NUMBER
6.	How many bathrooms are in your household?	NUMBER
7.	Do you think you have had COVID-19? [PLEASE CIRCLE]	NO00PLEASE GO DIRECTLY TO Q11
		YES 01
8.	Why do you think you have had COVID-19? [CIRCLE ALL THAT APPLY]	SYMPTOMS FOUND ON INTERNET01 SYMPTOMS MATCH LO
		NASAL/THROAT TEST RESULT03
		HEALTH CARE PROVIDER04
		CONTACT WITH PERSON WITH COVID1905
		OTHER
		SPECIFY:07

9.	Were you hospitalized due to COVID-19?	NO00		
		YES01		
10.	If yes, when and for how long?			
11.	Have you been tested for COVID-19 by nasal/throat swab?	NO 00PLEASE GO DIRECTLY TO Q14		
		YES	01	
12.	How many times have you been tested?		NUMBER	
13.	What was the approximate date of each test and the results?	i. DATE(S)	ii. RESULT(S)	
	a. First test	EARLY/ MO YR MID/ LATE	NEGATIVE00 POSITIVE01 DON'T KNOW99	
	b. Second test [IF APPLICABLE]	EARLY/ MO YR MID/ LATE	NEGATIVE00 POSITIVE01 DON'T KNOW99	
	c. Third test [IF APPLICABLE]	EARLY/ MO YR MID/ LATE	NEGATIVE00 POSITIVE01 DON'T KNOW99	
	d. Fourth test [IF APPLICABLE]	EARLY/ MO YR MID/ LATE	NEGATIVE00 POSITIVE01 DON'T KNOW99	

14. 15.	Have you been tested specifically for COVID-19 antibodies (blood test)? [PLEASE CIRCLE] If so, when?		YES	NO GO DIRECTLY TO Q16
16.	Did you have any of the following symptoms between January 2020 and present? [PLEASE CIRCLE ALL THAT APPLY]	YES	NO	DON'T KNOW
	a. Cough that lasted 2 days or more	01	00	99
	b. Fever	01	00	99

	c. Shortness of breath	01	00	99
	d. Sore muscles	01	00	99
	e. Headache	01	00	99
	f. Sore throat	01	00	99
	g. Diarrhea	01	00	99
	h. Decreased sense of smell	01	00	99
	i. Decreased sense of taste	01	00	99
	j. Unusual fatigue	01	00	99
	k. Other symptoms	01	00	99
17.	What was the date of you [IF YES TO ANY ABOVE]	r first symptom?	DON'T KNOW	EARLY/ MO YR MID/ LATE
	Hove you travelled outsid	la vour homa		DI FASE CO DIDECTI V
18.	province since January 20)20?	TO Q20	FLEASE GO DIRECTLY
			1 LS	01

	Where have you travelled to since	ALBERTA01	
19.	January 2020?	BRITISH COLUMBIA02	
		MANITOBA03	
		NEW BRUNSWICK04	
		NEWFOUNDLAND AND LABRADOR05	
		NORTHWEST TERRITORIES06	
		NOVA SCOTIA07	
		NUNAVUT	
		ONTARIO09	
		PRINCE EDWARD ISLAND10	
		QUEBEC	
		SASKATCHEWAN	
		UNITED STATES OF AMERICA14	
		MEXICO	5
		FRANCE	
		ITALY	7
		CHINA	
		INDIA)
		IRAN)
		ISRAEL	
		UNITED KINGDOM22	
		ELSEWHERE IN EUROPE23	

		OTHER(S)	
		SPECIFY:	25
20.	Have you been working in any of the following occupations or worksites since January 2020? [CIRCLE ALL THAT APPLY]	YES	NO
	a. Hospital or health care facility worker	01	00
	b. First responder (paramedic, firefighter, police officer)	01	00
	c. Childcare worker	01	00
	d. Correctional officer	01	00
	e. Teacher/other school staff	01	00

f. Transit driver	01	00
g. Food service industry	01	00
h. Grocery store	01	00
i. Pharmacy	01	00
j. Hairdresser/barber	01	00
k. Aesthetician	01	00
1. Factory worker	01	00
m. Student	01	00
n. Religious specialist	01	00
About how many times have you been in a gathering of 10 or more people since January 2020?		NUMBER
Do you currently smoke tobacco?	NO00 TO Q24 YES	PLEASE GO DIRECTLY
	f.Transit driverg.Food service industryh.Grocery storei.Pharmacyj.Hairdresser/barberk.Aestheticianl.Factory workerm.Studentn.Religious specialistAbout how many times have you been in a gathering of 10 or more people sinceJanuary 2020?Do you currently smoke tobacco?	f.Transit driver01g.Food service industry01h.Grocery store01i.Pharmacy01j.Hairdresser/barber01k.Aesthetician01l.Factory worker01m.Student01n.Religious specialist01About how many times have you been in a gathering of 10 or more people since January 2020?NO

23.	How often do you smoke tobacco?	DAILY 2 TO 3 TIMES PER WEB SOCIALLY (EG, 5 TO	01 EK02 D 10 TIMES PER YEAR)03
24.	Do you currently use e-cigarettes (vape)?	NO TO Q26 YES	00 GO DIRECTLY 01
25.	How often do you use e-cigarettes (vape)?	DAILY 2 TO 3 TIN WEEK SOCIALLY YEAR)04	02 1ES PER 3 7 (EG, 5-10 TIMES PER
26.	Have you been diagnosed by a physician with any of the following chronic medical conditions? [CIRCLE ALL THAT APPLY]	YES	NO
	a. Hypertension (high blood pressure)	01	00
	b. Diabetes	01	00
	c. Asthma	01	00
	d. Chronic Lung Disease	01	00
	e. Chronic Heart Disease	01	00

	f. Chronic Kidney Disease	01	00
	g. Liver Disease	01	00
	h. Cancer	01	00
	i. Chronic Blood Disorder (Eg, Anemia,	01	00
	Hemophilia, etc)		
	j. Immune Suppressed	01	00
	k. Chronic Neurological Disorder	01	00
	1. Tay Sachs Disease	01	00
	m. Cystic Fibrosis	01	00
	n. Familial Mediterranean Fever	01	00
	o. Fragile X Syndrome	01	00
	p. Glycogen Storage Disease Type II	01	00
	q. Phenylalanine Hydroxylase Deficiency	01	00
	r. Retinitis Pigmentosa 28	01	00
	s. Smith-Lemli-Optiz Syndrome	01	00
	t. Spinal Muscular Atrophy	01	00
	u. Wilson Disease	01	00
	v. Other	01	00
	w. I don't know/prefer not to say	01	00
27.	What medications do you currently take, if any?		
28.	What is your current weight?	[CIRCLE WHICH UNIT	kg / lbs [OF WEIGHT APPLIES]
29.	What is your current height?	· [0	m DR]
		ft	in
30	Do you have a family physician/primary care		
50.	provider?	NO	00
		YES	01
		DONT	2.2
		DON'T KNOW	
31	Did you get a flu shot in the past year?	DON'T KNOW	
31.	Did you get a flu shot in the past year?	NO	
31.	Did you get a flu shot in the past year?	NO YES	
31.	Did you get a flu shot in the past year?	NO YES	
31.	Did you get a flu shot in the past year?	NO YES	
31.	Did you get a flu shot in the past year?	NO YES	

32.	How often have you done the following since January 2020? [CIRCLE THE NUMBER THAT APPLIES FOR EACH OPTION]	NEVER	RARELY	OCCASSIONALY	OFTEN	ALWAYS
	a. Worn a mask in public places	00	01	02	03	04
	b. Practiced physical distancing in public places	00	01	02	03	04
	c. Avoided crowded places/gatherings	00	01	02	03	04
	d. Avoided common greetings (eg, handshakes, hugs, etc.)	00	01	02	03	04
	e. Limited contact with people at higher risk (e.g., an elderly relative)	00	01	02	03	04
	f. Self-isolated because you thought you were infected with COVID- 19	00	01	02	03	04
	g. Self-quarantined because you may have been exposed to COVID-19, but did not show symptoms	00	01	02	03	04
33.	Have you been vaccinated as COVID-19? Answer 'Yes' if you hav at least one dose of the C vaccine. <u>If you have not been va</u> <u>go to question 45.</u>	gainst e received COVID-19 <u>ccinated</u>	NO DIRECTLY YES		PLEASE (G O 01
34.	How many doses of the COV vaccine have you received so [PLEASE CIRCLE]	/ID-19 o far?	One dose	Two doses	More tha	n two doses

35.	Which vaccine did you receive? [PLEASE CHECK WITH AN "X"]					
	Was it: Pfizer and BioNTech mRNA vaccine					
	D Moderna mRNA vaccine					
	AstraZeneca Oxford vaccine					
	Johnson & Johnson					
	Other Specify the vaccine (30 characters):					
	Don't know					
36.	When did you receive your first dose of the COVID-19 vaccine?	Day	Month	Year		
37.	Do you have a lot number and date of manufacture?	Name of vaccine:	Lot number:	Date of manufacture:		

38.	When did you receive your second dose of the COVID19 vaccine?	Day	Month	Year
39.	Do you have a lot number and date of manufacture?	Name of vaccine:	Lot number:	Date of manufacture:

40.	Who administered the vaccine? [PLEA CHECK WITH AN "X"] O Fan physician O Quebec Santé O Lo clinic – please specify: O Other – please specify:	SE nily ocal				
41.	Did you have any side effects to the vacci AN "X"] Yes If yes, specify the suspected side	ne? [PLEAS	SE CHECK	WITH		
42.	If you have not received the COVID-19 vaccine – how likely are you to get it? [PLEASE CIRCLE]	Very likely	Likely	Unlikely	Very unlikely	Do not know/prefer not to say

We would now like to ask about your experiences and activities since the start of the pandemic.

Pun						
43.	How much do you trust people who are not part of the Orthodox Jewish community? [PLEASE CIRCLE]	A lot	Some	Little	Very little	Do not know/prefer not to say
44.	How much do you trust the public health institutions to manage the COVID-19 Pandemic? [PLEASE CIRCLE]	A lot	Some	Little	Very little	Do not know/prefer not to say
45.	How much do you think people outside the Orthodox Jewish community care about you and your community? [PLEASE CIRCLE]	A lot	Some	Little	Very little	Do not know/prefer not to say
46.	In the month of May 2021, how often did you gather together with people outside of your household? [PLEASE CIRCLE]	Never	1-3 times per week	Once per day	Multiple times per day	Do not know/prefer not to say
47.	In the month of May 2021, on the days in which you gathered together with people outside of your home, how many times did you see people? [PLEASE CIRCLE]	Never	1-3 times per week	Once per day	Multiple times per day	Do not know/prefer not to say

49. Apart from yourself, which family members live in your household? [PLEASE CIRCLE ALL THAT APPLV] How many of each of them? Who? How many? 50. Where do most of your relatives live? (ie. family members or relatives who do not live with you [CIRCLE THE OPTION THAT APPLIES MOST] Montreal Québee	48.	Before the pandemic (before March 202) how often did you socialize with friends who live in the other Orthodox communities (<i>ie. Those mentioned in Question 1</i>)? [PLEASE CIRCLE]	Never	1-3 times per week	Once per day	Multiple times per day	Do not know/prefer not to say
Instant / Wife Instant Instant	49.	Apart from yourself, which family	Who?		Н	low many?	
Image: Please CIRCLE ALL THAT APPLY] How many of each of them? Children APPLY] How many of each of them? Parent/s Sibling/s Sibling/s Others (e.g. visitor / boarder etc.) Sibling/s Sibling/s Others (e.g. visitor / boarder etc.) Sibling/s Other Canada Canada UCIRCLE THE OPTION THAT APPLIES MOST] States Frade Earge (please specify) Other Yes No Where did you volunteer? Sibling/s Other Sign on average, about how many hours per month did you volunteer? Municipal Provincial Community - please specify Municipal Provincial Federal Statisfied Dissatisfied Very dissatisfied Satisfied Satisfied Sat		members live in your household?	Husband / W	ife			
APPLY How many of each of them? Farent/s Grandparent/s Sibling/s 50. Where do most of your relatives live? (ic. family members or relatives who do not live with you) (CIRCLE THE OPTION THAT APPLIES MOST] Montreal 51. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? Ves No 52. If yes, on average, about how many hours per month did you volunteer? Didn't vote Community - please specify 53. Did you vote in the last Federal, provincial, or municipal election? Didn't vote Community - please specify 54. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] Some Not much Not at all Do not know disstified satisfied sat all bo not know satisfied sat all bo not		[PLEASE CIRCLE ALL THAT	Children				
them? them? Or anopar closs 50. Where do most of your relatives live? (ic. family members or relatives who do not live with you) [CIRCLE THE OPTION THAT APPLIES MOST] Montreal 51. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? [PLEASE CIRCLE] Where did you volunteer? 52. If yes, on average, about how many hours per month did you volunteer? Where did you volunteer? 53. Did you vote in the last Federal, provincial, or municipal election? [PLEASE CIRCLE ALL THAT APPLY] Didn't vote Community - please specify 54. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] Didn't vote Satisfied Dissatisfied satisfied Very dissatisfied Do not know dissatisfied 55. Are you happy with the health services available to you? [PLEASE CIRCLE] Very satisfied Somewhat satisfied Dissatisfied very satisfied Very dissatisfied Do not know 56. Do you trust the Quebee government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know		APPLY] How many of each of	Parent/s	/s			
Others (e.g. visitor / boarder etc.) 50. Where do most of your relatives live? (ie. family members or relatives who do not live with you) [CIRCLE THE OPTION THAT APPLIES MOST] Montreal 51. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? [PLEASE CIRCLE] Yes No 52. If yes, on average, about how many hours per month did you volunteer? Very satisfied Didn't vote 53. Did you vote in the last Federal, provincial, or municipal election? [PLEASE CIRCLE ALL THAT APPLV] Didn't vote 54. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] Very satisfied Somewhat satisfied Disatisfied Very satisfied Very dissatisfied Do not know 55. Are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] Somewhat satisfied Dissatisfied Very satisfied Do not know 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know		them?	Sibling/s	/8			
50. Where do most of your relatives live? (ie. family members or relatives who do not live with you) [CIRCLE THE OPTION THAT APPLIES MOST] Montreal Québee 51. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? [PLEASE CIRCLE] Yes Where did you volunteer? No 52. If yes, on average, about how many hours per month did you volunteer? Very satisfied Didn't vote 53. Did you vote in the last Federal, provincial, or municipal election? [PLEASE CIRCLE ALL THAT APPLY] Didn't vote 54. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] Very satisfied Somewhat satisfied Dissatisfied very satisfied Very dissatisfied Do not know 55. Are you happy with the public services available to you? [PLEASE CIRCLE] Very satisfied Somewhat satisfied Dissatisfied very satisfied Do not know 56. Do you trust the Quebee government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know			Others (e.g. v	isitor / boarde	er etc.)		
50. Interestion point relatives or relatives who do not live with you [CIRCLE THE OPTION THAT APPLIES MOST] Ouébee Canada Inited States Inited	50	Where do most of your relatives	Montreal				
relatives who do not live with you) Canada ICIRCLE THE OPTION THAT United States APPLIES MOST] Israel Europe (please specify) Other 51. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? Yes No 52. If yes, on average, about how many hours per month did you volunteer? Didn't vote Community - please specify 53. Did you vote in the last Federal, provincial, or municipal election? Didn't vote Community - please specify 54. If over 18, are you happy with the public services available to you? Very satisfied Somewhat satisfied Very dissatisfied Very dissatisfied Do not know dissatisfied Very dissatisfied Do not know dissatisfied Very dissatisfied Do not know dissatisfied Some Not much No at all Do not know dissatisfied 55. Are you happy with the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 56. Do you trust the Federal Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely So	50.	live? (ie. family members or	Ouébec				
[CIRCLE THE OPTION THAT APPLIES MOST] United States Israel Israel Israel Israel S1. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? Yes No 51. In the past 12 months, did you do volunteer work for any organizations, schools, mentoring, teaching? Ves No [PLEASE CIRCLE] Did you volunteer? Ves No 52. If yes, on average, about how many hours per month did you volunteer? Didn't vote 53. Did you vote in the last Federal, provincial, or municipal election? Didn't vote PLEASE CIRCLE ALL THAT APPLY] Community - please specify Municipal Federal Very satisfied Somewhat satisfied Dissatisfied Very dissatisfied 54. If over 18, are you happy with the public services available to you? Somewhat satisfied Dissatisfied Very dissatisfied Do not know 55. Are you happy with the health services available to you? Very satisfied Some Not much Not at all Do not know 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE]		relatives who do not live with you)	Canada				
Israel Europe (please specify) 51. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? Yes No FILEASE CIRCLE Where did you volunteer? Where did you volunteer? No 52. If yes, on average, about how many hours per month did you volunteer? Didn't vote		[CIRCLE THE OPTION THAT	United States				
Other Yes No 51. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? Where did you volunteer? No 52. If yes, on average, about how many hours per month did you volunteer? Didn't vote		APPLIES MOST]	Israel Europe (pleas	se snecify)			
51. In the past 12 months, did you do volunteer work for any organization including religious organizations, schools, mentoring, teaching? Yes No intervention of the sector of the sector of the sector of the sector of the services available to you? Didn't vote Somewhat satisfied No 52. If over 18, are you happy with the public services available to you? Didn't vote Community - please specify Municipal 53. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] Dissatisfied satisfied Very satisfied Somewhat satisfied Very dissatisfied Do not know 55. Are you happy with the health services available to you? Previncial Completely Some Not much Not at all Do not know 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know			Other	se speeny)			
volunteer work for any organization including religious organizations, schools, mentoring, teaching? [PLEASE CIRCLE] Where did you volunteer? 52. If yes, on average, about how many hours per month did you volunteer? 53. Did you vote in the last Federal, provincial, or municipal election? [PLEASE CIRCLE ALL THAT APPLV] Didn't vote 54. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] Very satisfied Somewhat satisfied Dissatisfied satisfied Very dissatisfied Do not know 55. Are you happy with the health services available to you? [PLEASE CIRCLE] Very satisfied Somewhat satisfied Dissatisfied satisfied Very dissatisfied Do not know 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know	51.	In the past 12 months, did you do		Yes			No
for any organization including religious organizations, schools, mentoring, teaching? Image and the provincial of the property o		volunteer work	Wher	e did vou volu	nteer?		
Feligious organizations, schools, mentoring, teaching? IPLEASE CIRCLE] 52. If yes, on average, about how many hours per month did you volunteer? 53. Did you vote in the last Federal, provincial, or municipal election? IPLEASE CIRCLE ALL THAT APPLY] Didn't vote 54. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] Somewhat satisfied Dissatisfied very dissatisfied Do not know dissatisfied very dissatisfied 55. Are you happy with the health services available to you? Very satisfied very satisfied Somewhat satisfied Dissatisfied Very dissatisfied Do not know dissatisfied 55. Are you happy with the health services available to you? Completely Some Not much Not at all Do not know dissatisfied 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know		for any organization including		J			
Including: [PLEASE CIRCLE] 52. If yes, on average, about how many hours per month did you volunteer? 53. Did you vote in the last Federal, provincial, or municipal election? [PLEASE CIRCLE ALL THAT APPLY] Didn't vote 54. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] 55. Are you happy with the health services available to you? [PLEASE CIRCLE] Very satisfied 55. Are you happy with the health services available to you? [PLEASE CIRCLE] Very satisfied 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know		mentoring teaching?					
52. If yes, on average, about how many hours per month did you volunteer? 53. Did you vote in the last Federal, provincial, or municipal election? [PLEASE CIRCLE ALL THAT APPLY] Didn't vote 54. If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE] 55. Are you happy with the health services available to you? [PLEASE CIRCLE] Very satisfied 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] 57. Do you trust the Federal		IPLEASE CIRCLE					
hours per month did you volunteer? Didn't vote 53. Did you vote in the last Federal, provincial, or municipal election? Didn't vote [PLEASE CIRCLE ALL THAT APPLY] Distatisfied Community – please specify 54. If over 18, are you happy with the public services available to you? Very satisfied Somewhat satisfied Dissatisfied Very dissatisfied 55. Are you happy with the health services available to you? Very satisfied Somewhat satisfied Dissatisfied Very dissatisfied Do not know 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know	52.	If yes, on average, about how many					
Did you vote in the last Federal, provincial, or municipal election? Didn't vote [PLEASE CIRCLE ALL THAT APPLY] Didn't vote Community - please specify 54. If over 18, are you happy with the public services available to you? Federal 55. Are you happy with the health services available to you? Somewhat satisfied Dissatisfied Very dissatisfied Do not know 55. Are you happy with the health services available to you? Very satisfied Somewhat satisfied Dissatisfied Very dissatisfied Do not know 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know		hours per month did you volunteer?					
53. Did you vote in the last Federal, provincial, or municipal election? Didn't vote [PLEASE CIRCLE ALL THAT APPLY] Image: Community - please specify Municipal 54. If over 18, are you happy with the public services available to you? Very satisfied Somewhat satisfied Dissatisfied Very dissatisfied Do not know 55. Are you happy with the services available to you? Very satisfied Somewhat satisfied Dissatisfied Very dissatisfied Do not know 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know							
Community – please specify Community – please specify If over 18, are you happy with the public services available to you? Very satisfied Somewhat satisfied Very dissatisfied Very dissatisfied Do not know 55. Are you happy with the health services available to you? Very satisfied Somewhat satisfied Dissatisfied Very dissatisfied Do not know 56. Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know	53.	Did you vote in the last Federal.	Didn't vote				
[PLEASE CIRCLE ALL THAT APPLY]Municipal54.If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfiedVery dissatisfiedDo not know55.Are you happy with the health services available to you? [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfiedVery dissatisfiedDo not know56.Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE]CompletelySomeNot muchNot at allDo not know57.Do you trust the FederalCompletelySomeNot muchNot at allDo not know		provincial, or municipal election?	Community -	- please specif	y		
APPLY]Provincial Federal54.If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfied very satisfiedVery dissatisfiedDo not know55.Are you happy with the health services available to you? [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfied very dissatisfiedVery dissatisfiedDo not know56.Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE]Completely to you trust the FederalSome CompletelyNot much Not at allDo not know57.Do you trust the FederalCompletely to you trust the FederalSomeNot much to not at allDo not know		PLEASE CIRCLE ALL THAT	Municipal				
54.If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfiedVery dissatisfiedDo not know55.Are you happy with the health services available to you? [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfiedVery dissatisfiedDo not know56.Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE]Completely someSomeNot muchNot at allDo not know57.Do you trust the FederalCompletelySomeNot muchNot at allDo not know		APPLY]	Provincial				
54.If over 18, are you happy with the public services available to you? E.g. education. [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfiedVery dissatisfiedDo not know55.Are you happy with the health services available to you? [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfiedVery dissatisfiedDo not know56.Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE]Completely someSomeNot muchNot at allDo not know57.Do you trust the FederalCompletelySomeNot muchNot at allDo not know			Federal		•	-	-
public services available to you? E.g. education. [PLEASE CIRCLE]satisfiedsatisfiedsatisfiedsatisfiedsatisfied55.Are you happy with the health services available to you? [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfiedVery dissatisfiedDo not know56.Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE]CompletelySomeNot muchNot at allDo not know57.Do you trust the FederalCompletelySomeNot muchNot at allDo not know	54.	If over 18, are you happy with the	Very satisfied	Somewhat satisfied	Dissatisfied	Very dissatisfied	Do not know
E.g. education. [PLEASE CIRCLE]Second content of the second		public services available to you?	satisticu	satisficu		uissatisticu	
55.Are you happy with the health services available to you? [PLEASE CIRCLE]Very satisfiedSomewhat satisfiedDissatisfiedVery dissatisfiedDo not know56.Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE]CompletelySomeNot muchNot at allDo not know57.Do you trust the FederalCompletelySomeNot muchNot at allDo not know		E.g. education. [PLEASE					
Solution Solution Solution Solution Solution Solution services available to you? [PLEASE CIRCLE] satisfied satisfied dissatisfied dissatisfied 56. Do you trust the Quebec Completely Some Not much Not at all Do not know 56. Do you trust the Quebec Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know	55	Are you happy with the health	Verv	Somewhat	Dissatisfied	Verv	Do not know
[PLEASE CIRCLE] Completely Some Not much Not at all Do not know 56. Do you trust the Quebec Completely Some Not much Not at all Do not know government to look after your needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know	55.	services available to vou?	satisfied	satisfied		dissatisfied	
56.Do you trust the Quebec government to look after your needs? [PLEASE CIRCLE]CompletelySomeNot muchNot at allDo not know57.Do you trust the FederalCompletelySomeNot muchNot at allDo not know		[PLEASE CIRCLE]					
government to look after your needs? [PLEASE CIRCLE]Image: Completely someNot muchNot at allDo not know57.Do you trust the FederalCompletelySomeNot muchNot at allDo not know	56.	Do you trust the Quebec	Completely	Some	Not much	Not at all	Do not know
needs? [PLEASE CIRCLE] Completely Some Not much Not at all Do not know 57. Do you trust the Federal Completely Some Not much Not at all Do not know		government to look after your					
57. Do you trust the Federal Completely Some Not much Not at all Do not know		needs? [PLEASE CIRCLE]	0	C	NT /	N T ()	
	57.	Do you trust the Federal	Completely	Some	Not much	Not at all	Do not know
government to look after your		government to look after your					
government to look after your	51.	government to look after your					

58. Do you trust your community to look after your needs? [PLEASE CIRCLE]	Completely	Some	Not much	Not at all	Do not know
---	------------	------	----------	------------	-------------

Appendix 2: Directed Acyclic Graphs (DAG)

Appendix 2.1: Overall Compliance Score DAG







Appendix 3: Distribution and Frequencies of Transformed Variables used in Regression

	Men (N=128)	Women (N=111)	Overall (N=239)
Age			
Mean [SD]	36.2 [13.9]	35.7 [13.9]	36.0 [13.8]
Median [Q25, Q75]	33.0 [24.0, 44.3]	33.0 [23.0, 46.5]	33.0 [24.0, 45.5]
Min, Max	18.0, 72.0	18.0, 71.0	18.0, 72.0
Crowding Index			
Mean [SD]	1.62 [0.674]	1.60 [0.710]	1.61 [0.690]
Median [Q25, Q75]	1.67 [1.00, 2.00]	1.67 [1.00, 2.00]	1.67 [1.00, 2.00]
Min, Max	0.250, 3.50	0.200, 3.33	0.200, 3.50
Missing	10 (7.8%)	7 (6.3%)	17 (7.1%)
Post-Secondary Education			
No	90 (76.9%)	40 (38.5%)	130 (58.8%)
Yes	27 (23.1%)	64 (61.5%)	91 (41.2%)
Missing	11 (8.6%)	7 (6.3%)	18 (7.5%)
Family Physician			
No	42 (36.5%)	18 (17.6%)	60 (27.6%)
Yes	73 (63.5%)	84 (82.4%)	157 (72.4%)
Missing	13 (10.2%)	9 (8.1%)	22 (9.2%)
Flu Shot in Last Year			
No	112 (94.1%)	95 (91.3%)	207 (92.8%)
Yes	7 (5.88%)	9 (8.65%)	16 (7.17%)
Missing	9 (7.0%)	7 (6.3%)	16 (6.7%)
Smoking			
No	103 (86.6%)	102 (98.1%)	205 (91.9%)
Yes	16 (13.4%)	2 (1.92%)	18 (8.07%)
Missing	9 (7.0%)	7 (6.3%)	16 (6.7%)
Overall Compliance Score			
Mean [SD]	3.94 [2.13]	4.60 [2.09]	4.25 [2.13]
Median [Q25, Q75]	4.00 [2.75, 6.00]	5.00 [3.00, 6.00]	5.00 [3.00, 6.00]
Min, Max	0, 7.00	0, 7.00	0, 7.00
Overall Trust Score			
Mean [SD]	2.91 [1.52]	3.46 [1.61]	3.17 [1.58]
Median [Q25, Q75]	3.00 [2.00, 4.00]	4.00 [2.00, 5.00]	3.00 [2.00, 5.00]
Min, Max	0, 5.00	0, 5.00	0, 5.00

Models with Missing Data Excluded

Table Showing the Distribution and Frequencies of Transformed Variables used in Regression Models

*Missing data excluded from proportions in table

Appendix 4: Bagged Marginal Differences and 95% Confidence Intervals for Overall

Compliance and Trust Score with Missing Data Replaced and Removed

Appendix 4.1: Bagged Marginal Differences and 95% Confidence Intervals for Overall

Compliance Score with Missing Data Replaced and Removed

Table showing Bagged Marginal Differences and 95% Confidence Intervals for Overall Compliance Score with Missing Data Replaced and Removed

Overall Compliance Scores	Bagged Marginal Difference (W-M)	Lower 95% CI	Upper 95%CI
Missing Data Replaced (239 Individuals)	0.75	0.10	1.47
Missing Data Removed (202 Individuals)	1.05	0.43	1.74



Figure showing Bagged Marginal Differences and 95% Confidence Intervals for Overall Compliance Score with Missing Data Replaced and Removed

Appendix 4.2: Bagged Marginal Differences and 95% Confidence Intervals for Overall

Trust Score with Missing Data Replaced and Removed

Table showing Bagged Marginal Differences and 95% Confidence Intervals for Overall Trust Score with Missing Data Replaced and Removed

Overall Trust Scores	Bagged Marginal Difference (W-M)	Lower 95% CI	Upper 95%CI
Missing Data Replaced	0.80	0.35	1.21
(239 Individuals)			
Missing Data Removed	0.90	0.45	1.29
(202 Individuals)			



Figure showing Bagged Marginal Differences and 95% Confidence Intervals for Overall Trust Score with Missing Data Replaced and Removed

Appendix 5: COVID-19 Timelines Appendix 5.1: 2020 COVID-19 Timeline

	1 D-19
MARCH 10, 2020	
PURIM	
	WHO declares COVID-19 a pandemic .
MARCH 12, 2020	
Premier announces mandatory 14-day isolation for individuals who travelled internationally.	
	MARCH 13, 2020
	COVID-19 declared public health emergency in Quebec. Individuals > 70 years old to stay home.
MARCH 16 . 2020	
Schools, daycares, and hon-essential businesses closed. Work from home recommended. Prime-minister announces border closure.	
	MARCH 19, 2020
	Travel advisory against non-essential travel in province.
MARCH 20, 2020 Indoor and outdoor gatherings of any size	
prohibited.	
	Guidance for mild COVID-19 cases to self- isolate at home.
MARCH 25, 2020	
First COVID-19 death in Montreal.	
	APRIL 7, 2020
	Public Health Agency of Canada (PHAC) and Premier office recommend use of masks.
EVE OF APRIL 8- APRIL 16 . 2020 PASSOVER	
	APRIL 17, 2020 Transport Canada requires mandatory masks for all air and rail passeners.
MAY 12, 2020	
Use of first COVID-19 serological test authorized by Health Canada.	
	MAY 25- JUNE 25, 2020
	Non -essential services gradually reopen.
EVE OF MAY 28- MAY 30, 2020	
SHAVUOT	
	JUNE 18, 2020 National contact tracing application
AUGUST 24, 2020	launched.
Mandatory face covering required in indoor spaces or on public transport for individuals	
- 10 years.	AUGUST 26, 2020
	Places of worship to maintain physical distancing of 1.5m between individuals.
SEPTEMBER 15, 2020	
Private gatherings of 10 individuals allowed,	
	EVE OF SEPTEMBER 18- SEPTEMBER20, 2020 ROSH HASHANAH
SEPTEMBER 20, 2020	(JEWISH NEW YEAR 5781)
Gatherings of greater than six individuals prohibited.	
	EVE OF SEPTEMBER 27- SEPTEMBER 28, 2020
Ester 1	YOM KIPPUR
OCTOBER 1, 2020	
Gatherings outside nousehold prohibited.	
	EVE OF OCTOBER 2- OCTOBER 10, 2020 SUKKOT AND SHEMINI ATZERET
OCTOBER 11, 2020	
SIMCHAT TORAH	
	DECEMBER 7 2022
	DECEMBER 7, 2020 Gatherings in places of worship limited to 25 individuals
DECEMBER 9, 2020	THE VALUE.
Health Canada approves Pfizer COVID-19 vaccine for interim order use in individuals	
aged = 16.	DECEMBER 11- DECEMBER 18, 2020
	HANUKKAH
DECEMBER 14, 2020	
First dose COVID-19 vaccine administered in Quebec.	
	DECEMBER 17, 2020
	Work from home mandated.
DECEMBER 23, 2020	
Health Canada approves Moderna COVID- 19 vaccine for interim order use in individuals aged > 18.	
	DECEMBER 25, 2020
SOURCES: 1. https://www.sibi.ca/an/canadian.covid 19 intervention to	nellos
2. https://cdo.fedweb.org/fed.66/2/Jewish%2520Calendar1	at Made with 💎 VISME
- HAVISTINGLIGAVS	



Appendix 5.2: 2021-2022 COVID-19 Timeline