

Perceptions of Mask-Wearing Compliance on Public Transit During COVID-19

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Abstract

The COVID-19 pandemic presents unique challenges for governments in the development and enforcement of public safety policies intended to slow the spread of the disease, manage health resources and ultimately, save lives. The success of these aims depends greatly on maximizing compliance of mitigating practices, such as mask-wearing, staying home, and physical distancing. Yet, it has been demonstrated around the world that compliance with pandemic practices is a highly divisive issue, necessitating examination. In this study ($N = 198$), we examined the influence of compliance with mask-wearing policy on perceptions of characterological and relational dimensions. We demonstrated that people had greater negative perceptions of those who did not comply with mask-wearing policy than of those who did comply. We examine the social implications of these results in our discussion.

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Around the world, response to the global coronavirus pandemic has varied within nations, communities and families. The introduction of policies and guidelines aimed at reducing the spread of the virus have prompted much debate and unrest (Van Assche, 2020; Chan 2020). At the outset, government and World Health Organization (WHO) messaging about the use of face masks was inconsistent and dynamic, creating uncertainty around the efficacy of masks in either preventing transmission of the virus or protection from infection (Feng et al., 2020). Since then, public policy has grown more consistent and mask-wearing has become one of the primary recommended mitigating practices to “flatten the curve” and “stop the spread” of coronavirus (World Health Organization, 2020).

Evolving out of the pandemic response is a growing body of research aimed at understanding the reasons behind compliance or non-compliance of pandemic-related policies designed to protect all members of society. This research has implied for the design and framing of public policy, such that compliance with pandemic directives is maximized (Stapleton, 2020; Chan, 2020; Bacon, 2020; Van Assche, 2020).

Recent research have examined personality factors as a moderator of compliance, demonstrates that approach and avoidance tendencies may explain perceptions of risk and compliance (Bacon & Corr, 2020), that people high in entitlement (Zitek & Schlund, 2020) and ideological extremism (Brouard, Vasilopoulos & Becher, 2020) are more likely to break rules, while people high in agreeableness (Zajenkowski, Jonason, Leniarska & Kozakiewicz, 2020) and conscientiousness (Brouard et al., 2020) are more likely to follow them. Alternatively, several studies have found that situational factors are critical to compliance (Stapleton, 2020; Motta, 2020), and may be more relevant than personality (Zajenkowski et al., 2020). One study has found that boredom proneness, exacerbated by COVID-19 restrictions, may increase rule-breaking (Boylan, Seli, Scholer & Danckert, 2020) while others have found that belief in

misinformation and “fake news” about COVID-19 reduces adherence to social norms (Motta, Stecula & Farhart, 2020).

As the pandemic wears on, judging and assigning blame to those who “aren’t doing their part” has become increasingly common. Prosser and colleagues (2020) have argued that although moralization of mitigating practices, such as mask-wearing, can positively influence behaviour in an emergent situation such as the pandemic, it may also aggravate interpersonal conflict, increase polarization and threaten social cohesion. Francis and McNabb (2020) have found assigning moral values to mitigating practices predicted compliance with government recommendations while noting that prior research by Minson and Monen suggests moralization can produce reactive, counterintuitive responses (as cited in Francis & McNabb, 2020). In other words, people who are non-compliant with mitigating practices may feel morally judged and subsequently, become more entrenched in their non-compliance.

Within this evolving context, we examined the influence of mask-wearing compliance on perceptions of characterological dimensions *in others*. Notably, in our literature search, we found just two studies addressing this other-oriented perspective on compliance and COVID-19, both of which reported more negative attitudes towards non-compliers vs. compliers (Betsch, 2020; Van Assche, 2020). In accordance with these studies, we hypothesized mask-wearing compliance would produce more positive perceptions than mask-wearing non-compliance. Given the current social context in which mitigating practices are viewed as “doing the right thing”, those who do not comply with such practices, especially in a mandated zone, may be seen as violating social norms and thus, subject to moral judgments about their behaviour, cognition, personality, and relational capacity. Understanding how people perceive those who fail to comply with safety protocols may inform how communication around public safety policies and practices are framed, which may help to minimize social conflict and polarization, as well as improve overall compliance at this critical juncture of the pandemic.

Method

Participants were recruited for the study through the college's online subject pool, SONA system, which was drawn from Langara Psychology students interested in earning bonus marks for their courses. We surveyed a total of 200 Langara students ($N_{\text{female}} = 146$, $N_{\text{male}} = 51$, $N_{\text{other}} = 1$) of all ages ($N_{18-24} = 165$, $N_{25-34} = 24$, $N_{35-44} = 7$, and $N_{45-54} = 4$) using Survey Monkey and excluded 2 participants for non-response. Participants were randomly split into two groups: mask scenario and no-mask scenario ($N_{\text{mask}} = 89$, $N_{\text{no-mask}} = 109$). 90% of participants currently reside in Canada, while the remaining 10% live in different areas around the world.

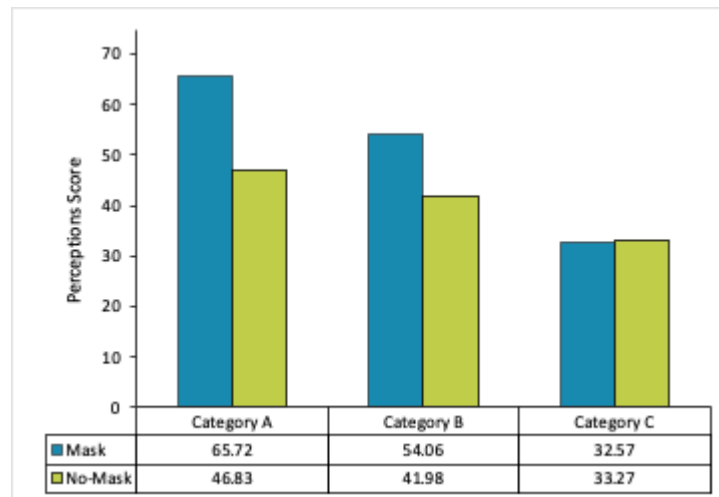
Prior to the start of the survey, participants were randomly assigned by Survey Monkey into one of two conditions, both conditions were asked to read one of two scenarios. Scenario A (mask scenario) describes a person boarding a Skytrain and at the last minute, realizing they forgot to put their mask on, and proceeded to put it on before boarding. Scenario B (no-mask scenario) describes a person boarding a Skytrain, realizing they forgot to bring a mask, and proceeded to board without the mask (*see Appendix A for full scenarios*). Using the Likert scale (strongly agree, agree, undecided, disagree, strongly disagree), participants were then asked to respond to fifty statements regarding perceptions of the protagonist in the scenario (e.g., "this person made a selfish decision," "this person is arrogant," and "I trust this person's decision-making skills") and questions on social policy regarding COVID-19 protocols (e.g., "COVID-19 protective measures should be stricter," and "BC is doing a good job trying to contain the pandemic"). The independent variable in the study was compliance, specifically, the act of complying with COVID-19 policies of mask wearing and social distancing. The dependent variable in the study was perception, specifically looking at positive, negative, and neutral perceptions and how they are impacted by the given scenario.

Results

The raw data was organized into three categories based on the nature of our questions (see Appendix A for full list). Category A was the participant's perception of cognitive, behavioral, and personality attributes. Category B identified the relationship between the individual depicted in the story and the participant. Category C was the participant's attitude on safety and public policies (Figure 1). These three construct categories were made after conducting the experiment, and not during design. We discuss the implications of this choice in our *Discussion* section.

Figure 1

Category Comparison of Perception Scores for Mask and No-Mask Conditions



Note. Category A comprised of questions about behaviour, cognition and personality, Category B comprised of questions about relational dimensions, and Category C comprised of questions about safety and public policy.

We used an unrelated t-test to evaluate the difference of means between our two groups in each category: mask ($N = 89$) and no-mask ($N = 109$) conditions. There was a significant

difference between the scores for the mask and no-mask conditions in Category A and Category B. The differences were highly significant in both categories ($p < .001$). In Category A, participants presented with the mask scenario ($M = 65.72$, $SD = 11.27$) scored higher on the perceptions scale than participants presented with the no-mask scenario ($M = 46.84$, $SD = 9.58$); $t(196) = 12.75$. In Category B, the participants in the no-mask condition ($M = 41.98$, $SD = 8.29$) scored lower on the perceptions scale compared to participants in the mask condition ($M = 54.06$, $SD = 8.79$); $t(196) = 9.92$. In contrast, the effect in Category C was not statistically significant for participant scores in both the mask ($M = 32.57$, $SD = 4.13$) and no-mask conditions ($M = 33.27$, $SD = 3.81$); $t(196) = 1.23$, $p = 0.2214$.

The minimum and maximum perceptions scores for each group were calculated by multiplying the number of questions for each category with the scores on the Likert scale, i.e., lowest = 1 (*strongly disagree*) and highest = 5 (*strongly agree*). Category A had a minimum score of 19 and maximum of 95. Category B had a minimum score of 16 and maximum of 80. Category C had a minimum score of 9 and a maximum of 45. The higher the perceptions scale score, the more positive the perceptions in each category.

Discussion

The aim of this study is to examine the influence of compliance on perception of people in mandatory mask-wearing environments. The results suggested a significant correlation between negative perceptions and mask-wearing non-compliance in mandated public spaces. Fifty questions were divided into three category constructs, measuring perceptions toward characterological dimensions, relational dimensions, and safety and public policy. An additional category contained questions excluded from the data for ambiguity and technical errors. Examination of the data set for the mask and no-mask conditions on characterological

dimensions revealed high agreeability and positive perceptions towards the protagonist in the mask condition and high disagreeability and negative perception towards the protagonist in the no-mask condition. These results were validated by the relational dimensions, which show similar results. The safety and public policy dimension showed results that were not significant ($M_{\text{mask}} = 32.57$ and $M_{\text{no-mask}} = 33.27$, $t(196) = 1.228$, $p = 0.221$) between the two conditions thereby reaffirming the differences observed between the participants of characterological dimensions and relational dimensions are indeed reflective of the independent variable.

The significance in the data between the two scenarios towards agreeability and compliance, and disagreeability and non-compliance support our hypothesis. We expected participants to be more accepting of the mask-wearing scenario as opposed to the no-mask scenario. How participants responded to questions about the characterological and relational dimensions support this assertion. For instance, 61% of the participants in the masked scenario agreed with the statement, “this person made the best decision in the situation they were given,” whereas the no-mask scenario revealed only 22% of participants agreed with the same question. This pattern was recurring throughout the results of the study. The results also suggested, the participants associated positive personality traits to the mask scenario protagonist, as 40% of participants agreed that they are empathetic while only 11% of participants agreed to the same statement in the no-mask scenario. One study has found a positive connection between high levels of conscientiousness and agreeableness with compliance of mask mandated policies (Nofal et al., 2020). This suggests our data aligned with Nofal et. al’s findings, perceived positive personality traits correlate with the tendency to comply.

Although research directly examining compliance and mask mandate requirements is scant, some studies have suggested that personality plays a key role in compliance (Nofal et al.,

2020). Recent studies have found that people who demonstrate narcissistic traits are more likely to non-conform (Nofal et al., 2020; Zajenkowski et al., 2020). In the current study, 23% of participants presented with a non-compliant protagonist ‘strongly agree’ and ‘agree’ with the statement, “This person is narcissistic,” while only 5% in the compliant scenario judged the protagonist to be narcissistic. Betsch and colleagues (2020) have demonstrated that compliance with mask policies is viewed as prosocial behaviour that elicits positive perceptions. Our results agreed with these findings, as most of the participants in the current study showed positive feedback on the mask-wearing (compliant) scenario. In contrast, the no-mask scenario (non-compliant) received more negative responses. At present, our findings support current research demonstrating that, overwhelmingly, compliance is positively perceived, and non-compliance is negatively perceived, regarding coronavirus safety protocols. An implication is non-compliers are more likely to spread COVID-19 compared to those who comply and wear face masks (Dzisi & Dei, 2020).

The overwhelmingly negative perceptions attributed to the protagonist in the non-compliant scenario may infer that attribution error may be a factor in the results. The fundamental attribution error describes the tendency for people to explain the behaviour of others through personality traits and to underestimate the power of situation (Aronson, Wilson, Akert & Fehr, 2017). Recent research on compliance and COVID-19 points to situational factors as being relevant, and perhaps to a greater extent than personality factors, in determining compliance (Motta, 2020; Stapleton, 2020; Zajenkowski).

While this study does not specifically address the impact of moralizing mask-wearing compliance, it does suggest that mask-wearing is a highly moralized behaviour and has become a social norm. As indicated earlier, moralization of mitigating practices can have both positive and

negative effects on compliance (Prosser, 2020; Francis, 2020), and should be taken into consideration when framing messages around mitigating practices, especially those that pose a moral dilemma (Prosser et al., 2020).

The generalizability of our results is limited due to the sample demographic, sample size and the medium of data collection. Participant makeup was solely psychology students attending a Canadian college and the data collection was exclusively conducted on Survey Monkey, an online survey platform, that excluded a segment of the population without access to the internet; therefore, the study may not be representative of the population. Furthermore, methodological choices were constrained by time. A factor analysis test conducted prior to the study would have been beneficial in validating the measured constructs and ensuring all factors were relevant to the categorical clusters. Face validity was used to construct the measures which disadvantaged the study in that some questions must be excluded upon further analysis due to the ambiguity of the question or their relevance to the construct clusters. Participants may have misinterpreted the meaning, in closed statements such as, “I feel indifferent towards this person,” and “this person’s actions could have consequences” and as a result, these statements were excluded from data analysis. Conducting construct validity checks would have enabled all factors to be included in the study. In total, 6 factors were excluded. Further limitations of the Likert scale are the ambiguity of the “undecided” scores, as it cannot be determined whether the participants do not have an opinion on the factor or whether the participant is torn between the two directions. Using “neutral” for the mid-point value on the scale may provide a better picture of the participant’s attitude towards the scenario.

Despite these limitations, the high disagreeability and correlation to negative perception of the no-mask scenario is repeatedly demonstrated in characterological dimension factors such

as, “this person is irresponsible” with 54% of the participants agreed to the statement and 17% strongly agreed, in comparison to the masked condition, where 51% of participants disagreed with the statement and 7% strongly disagreed. Participants also indicated negative perceptions on relational dimension factors in the no-mask condition, such as “I trust this person’s decision-making skills” with 54% of participants disagreed and 14% strongly disagreed in comparison to 47% agreed and 7% strongly agreed in the mask condition. These results demonstrated a high degree of judgment towards individuals who do not comply with mask-wearing policies.

Future studies should consider the following methodological choices. Include a factor analysis to increase construct validity, including pre-planning the organization of the construct categories to reduce factor exclusions in the data analysis and to decrease ambiguity or misinterpretation of factors. Utilize existing standardized scales that measure personality dimensions such as, the big five personality test, to provide greater reliability of scores and include validated questions that measure correlating construct clusters. Lastly, consider conducting a pre-test prior to the start of the study to measure existing perceptions of safety and public policy to strengthen measurement validity.

The COVID-19 pandemic, with its unprecedented global implications, has offered a unique opportunity to examine the relationship between compliance or non-compliance of pandemic-related policies and the impact this has on the perception of others. The aim of our study is to examine how people perceive non-compliance of mask-wearing in mandated areas and whether non-compliance gives rise to negative feelings about a person’s characterological and relational dimensions. The results of the current study demonstrate that non-compliance does produce negative perceptions of others, which further suggests that moralizing of mask-wearing behaviour may be relevant to these perceptions. This research is timely and may have

implications for how future public policy is structured and implemented to ensure optimal adherence to public safety protocols.

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Appendix A

Survey Scenarios

Mask scenario (A):

“At the beginning of Covid, when everything shut down, it was surreal. It was a relief when things started opening up a little. Connecting with friends isn’t the same as before, but we make it work.

The other day, I was rushing to catch the SkyTrain to get downtown to meet a friend for lunch, but as I was standing on the platform, I realized I wasn’t wearing my mask, so I quickly put it on before boarding. It was all good. I got to where I needed to be on time.

I don’t know when this pandemic is going to end, but I hope it ends soon.”

No-mask scenario (B):

“At the beginning of Covid, when everything shut down, it was surreal. It was a relief when things started opening up a little. Connecting with friends isn’t the same as before, but we make it work.

The other day, I was rushing to catch the SkyTrain to get downtown to meet a friend for lunch, but as I was standing on the platform, I realized I didn’t have a mask. I didn’t have time to go home to get one, so I just got on. It was all good. I got to where I needed to be on time.

I don’t know when this pandemic is going to end, but I hope it ends soon.”

Appendix B

Survey Questions/Statement by Category

Category A (Questions/statements about cognitive, behavioral, and personality dimensions.)

- Q1 This person is irresponsible
- Q9 This person is considerate of others.
- Q20 This person is too busy to consider others.
- Q21 This person has self-control.
- Q40 This person is more likely to break rules.
- Q43 This person trusts the government's current measures to control COVID-19.
- Q44 This person is good at following rules.
- Q45 This person did nothing wrong.
- Q3 This person made the wrong decision.
- Q10 This person does not think of the consequences of their actions.
- Q25 This person made a selfish decision.
- Q26 This person does not understand the severity of COVID-19.
- Q27 This person is well informed.
- Q5 This person is an agreeable person.
- Q11 This person is generous
- Q12 This person is arrogant.
- Q41 This person is empathetic.
- Q42 This person is narcissistic.
- Q4 This person made the best decision in the situation they were in.

Category B (Questions/statements about relational dimension.)

- Q6 I trust this person's decision-making skills.
- Q7 I do not trust this person's opinion.
- Q8 This person's values mirror my own.
- Q13 This person and I have a lot in common.
- Q14 This person and I are nothing alike.
- Q15 I would be friends with this person.
- Q16 This person and I would not be friends.
- Q17 This person seems to be a good person.
- Q19 This person can be counted on during a crisis.
- Q22 I like this person.
- Q23 I dislike this person.
- Q29 This person is a good neighbourhood.
- Q30 This person does not care about their community.
- Q35 This person is family-oriented.
- Q36 My family would not like this person.
- Q50 This person is more likely to adhere to other COVID protective measures.

Category C (Questions/statements about safety and public policy.)

- Q46 COVID-19 protective measures should be stricter.
- Q18 Bad people break rules.
- Q24 Wearing masks on public transit during COVID-19 is a reasonable mandate.
- Q28 The city transit police need to be stricter regarding mandate rules.
- Q32 There are scenarios when not wearing a mask should be excused.
- Q33 The government should ease up on mask-mandates.
- Q39 BC is doing a good job trying to contain the pandemic.
- Q47 Skytrains could be safer.
- Q48 This person deserves to be punished.

Category D (Questions excluded from analysis due to ambiguity/construct issues))

- Q49 This persons actions could have consequences.
- Q31 I feel indifferent towards this person.
- Q37 I would let my loved one sit next to this person. (*incorrectly entered in Survey Monkey*)
- Q2 I see nothing wrong with this scenario.
- Q34 People who have a good reason for not wearing a mask should not be punished for not wearing one.
- Q38 I feel safe on this SkyTrain.

Percentages for Agreement with Category C (perceptions of safety and public policy) Questions

[illegible]