



Support for regulation versus compliance: Face masks during COVID-19

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ABSTRACT

Objectives: Wearing masks could still be one of the few non-pharmaceutical interventions for controlling the pandemic. There are people who wear them and people who don't, but this framing is overly simplistic. We aim to chart the contradictions in attitudes and behavior regarding mask wearing and describe the messaging challenge that these generate.

Study design: Our data come from a survey administered to a nationally representative sample of 2000 respondents from the YouGov panel of US households in August–September 2020.

Methods: Respondents were asked whether they wear a facemask when they go outside their home since the COVID-19 epidemic began and whether they support or oppose your municipal government passing mask wearing regulation. We also collected respondents' demographic and economic characteristics, knowledge regarding the facts of COVID-19 and political ideology.

Results: A substantial majority of Americans (60%) both favor a masking requirement and are themselves wearing masks, while 13% oppose a mask mandate and do not wear masks. In contrast, 17% of Americans oppose a mask mandate but are currently wearing one, while 10% do not wear a mask but favor a mask mandate. These two groups are distinctively different from one another and the other groups in their socioeconomic characteristics, risk perception and political beliefs.

Conclusions: Our study offers a better understanding of the mismatch between mask wearing behavior and attitude toward the mask mandate, which will help the public health authorities to devise policies regarding mask wearing as an effective intervention to manage the pandemic.

1. Introduction

Support for a policy is not the same as compliance with it, yet the distinction is sometimes overlooked especially when public opinion surveys are introduced into policy deliberations. With surveys, the issue is often framed in terms of support for a policy versus opposition. However, what matters in some cases is not just support for a policy but also compliance with it – for example, a ban on smoking, a recycling mandate, or, in the case of COVID-19, a mask mandate. While measuring attitudes with opinion surveys is simpler than measuring behavior, and it may be convenient to treat attitude as a correlate of behavior, this obscures the fact that there is a real difference between attitude and behavior. Moreover, with a smoking ban or a behavior mandate, both

attitude and behavior have a legitimate place in policy evaluation. The policy regulates other people's behavior, which I may support or oppose, and it also regulates my behavior, with which I may or may not comply.

Since compliance is distinct from support, both need to be measured. This generates not two but four possible outcomes. At one end, some people both support the policy and comply with it; we refer to these as *supporters*, (Group A). At the other, some people both oppose the policy and do not comply with it; we call these *opponents* (Group D). There are, however, two more groups. Some people may oppose the policy while themselves complying with it. For example, one might hold a principled position that people should be free to decide whether to wear a motorcycle helmet while oneself choosing to wear a helmet. Other reasons could be peer-pressure, or work requirements. An example

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might be a smoker who avoids smoking in public places due to peer pressure but, given an opportunity to vote on a city ordinance to ban smoking in public places, would vote no. We refer to these as *compliant opponents* (Group B).

Conversely, some people may support the policy while themselves not actually complying with it. We refer to these as *non-compliant supporters* (Group C). An example is smokers who support raising cigarette taxes because they lack willpower. Recycling is another example: it is not uncommon at city council meetings to hear the opinion “I don’t recycle now, but everyone should recycle and the city should pass a regulation making everyone do it.”

Recognition of these four groups rather than just two has practical implications for policy design and implementation. For example, rather than trying to win over diehard opponents (Group D), it may be more effective to focus on non-compliant supporters (Group C) and identify how to induce them into compliance. We illustrate these ideas with the example of mask wearing to prevent COVID-19. Masks were one of the few non-pharmaceutical interventions against COVID-19 before vaccines were developed [1,2] and, even with vaccines and oral antiviral treatments, they are still viewed as essential for controlling the Omicron variant [3], making questions regarding the extent to which people will wear masks, and what promotes that, highly policy-relevant. While legal mandates to wear masks have been well accepted in some countries, in others they have aroused strong – even violent – opposition, perhaps most notably in the United States. In the US, not wearing a face mask has evolved into a political statement, a partisan symbol in a culture war [4, 5].

2. Methods

Our data come from a survey administered to a nationally representative sample of two thousand respondents from the YouGov internet panel of US households between August 28 and September 4, 2020. Respondents were asked two questions about face masks. First, “do they wear a facemask when they go outside their home since the COVID-19 epidemic began?” Second, “Suppose your local city or county government was considering a regulation that would require everyone to wear a face mask whenever they left their own home. Someone not wearing a face mask in public buildings and parks as well as retail stores would be fined. Would you support or oppose your municipal government passing this regulation?” We also asked whether respondents agreed, disagreed, or were unsure about certain factual statements regarding COVID-19. We collected demographics including age and gender, and we asked for respondents’ voting intentions for the 2020 Presidential election.

3. Results

The responses to the mask questions indicate that, at the time of the survey, 77% of respondents overall wore masks, while 23% did not. However, respondents fell into four – not two – distinct groups. Some (Group A) support government mandates to wear face masks and themselves wear masks. Others (Group D) oppose face mask regulation and do not themselves wear masks. There are also two other groups. Compliant opponents (Group B) are people who themselves wear face masks even though they oppose mandatory masking. Non-compliant supporters (Group C) support regulation but do not themselves wear masks. Those two groups are distinctively different in their socioeconomic characteristics and political beliefs both from one another and from mask supporters or opponents.

The supporter group (A) comprises 60% of the public. By itself, this group is not large enough to control transmission [6]. The opponent group (D) represents 13% of the American public, suggesting that about 87% is the maximum rate of mask-wearing compliance that could be achieved without stringent enforcement. This buttresses the importance of maintaining compliance by compliant opponents (group B; 17%) while shifting non-compliant supporters (group C; 10%) into

compliance. That requires insight into the distinctive characteristics and motivation of those two groups. Group B’s compliance might be due to peer pressure or work requirements. That they comply despite opposing mask regulation suggests their compliance could continue. Their demographics support a characterization as rule-compliers. Group C (non-compliant supporters) are distinctly younger and politically disengaged. Perhaps they are awaiting a stronger mandate or feel uncomfortable complying when those around them don’t. A strict mandate coupled with suitable messaging might bring them into compliance.

Table 1 compares the groups’ demographic and social characteristics. Supporters and opponents (Groups A and D) differ strikingly with regard to gender (42% male vs. 60%), planning to vote Democrat rather than Republican in the US Presidential election (71% vs. 6%), health insurance (8% lack insurance vs 15%), and knowing someone hospitalized with COVID-19 (28% vs. 13%). There is little difference in age (average age 48 versus 50). The two groups disagree most profoundly over whether face masks help reduce COVID-19 (93% vs. 20%). The other two groups are intermediate with regard to these characteristics, but also have some distinctive features. Non-compliant supporters (Group C) are least likely to have a college education, more likely to be black and, especially, Hispanic, younger and more likely to have young children, more likely to have been laid off since COVID-19, less likely to vote, and less sure of who they would vote for. However, 61% agree that face masks help reduce COVID-19. Compliant opponents (Group B) have the highest family income, are the most white group, the oldest group, the most protestant, and only 15% plan to vote Democrat. Also, 52% agree that face masks help reduce COVID-19.

4. Discussion

It is a common trope that attitude and behavior are not the same thing [7,8]. Thus, measuring one is not the same as measuring the other. However, with a policy initiative like a mask mandate both can have a legitimate role – the policy regulates other people’s behavior, which I may support or oppose, and it also regulates my behavior, with which I may or may not comply. Framing the issue as a dichotomy between support versus opposition – which is common – is over-simple. Compliance is distinct from support. This has implications for both COVID-19 policy in particular and policy analysis in general.

With COVID-19, some people who oppose mask regulations actually do wear masks, and some who support regulations do not themselves wear masks. The die-hard opponents are smaller than sometimes thought (13%). However, they likely place an upper limit on how much mask wearing can be achieved in the US without stringent (and divisive) enforcement of a mandate. To expand mask wearing to levels needed for effective control of COVID-19 transmission it will be necessary to keep compliant non-believers in compliance and focus on inducing non-compliant believers to themselves wear masks [9]. Accomplishing that could be impeded by political partisanship in the US which has tainted attitudes, behaviors and even factual perceptions of COVID-19, and damaged the credibility of the Center for Disease Control. At the least, astute messaging will be required, targeted separately at different demographic groups, especially young Hispanics and blacks, and combined with some strategic enforcement.

More generally, policy analysts need to be cognizant of the wedge between support and compliance, and sensitive to the constraints and opportunities that creates for successful policy implementation. Among others, Amartya Sen famously challenged the conventional economic equation of preference with choice, emphasizing the importance of context and motivation in human behavior [10]. Policy analysts should not be surprised at what appears to be inconsistency between attitudes that people express and behaviors they exhibit when the context and forces influencing them may diverge.

Table 1
Comparison of socioeconomic and political characteristics.

	Characteristic	Group A	Group B	Group C	Group D	Entire Sample
Sociodemographic characteristics	% without college education	30.9	39.8	49.7	39.5	35.1
	% postgraduate education	12.6	9.6	7.1	9.8	11.2
	% White	67.9	79.4	47.2	76.7	69.0
	% Black	11.1	5.7	15.2	4.5	9.7
	% Hispanic	12.3	7.5	24.4	9.4	12.3
	% Male	41.9	51.9	51.3	59.8	46.9
	Age (mean)	48.1	52.5	36.8	50.2	48.0
	Household size (mean)	2.8	2.6	3.5	2.6	2.8
Economic characteristics	% with children under age 18	24.7	21.8	36.6	19.2	24.6
	Family income (mean; USD)	62,914	65,512	57,283	58,991	62,268
	% received \$1200 stimulus check	72.5	80.6	42.1	68.8	70.4
	% laid off since COVID-19	11.8	9.6	17.3	9.1	11.6
Health condition	% without health insurance	7.9	7.8	13.2	15.1	9.4
	% very good or excellent health	39.6	46.3	50.7	48.1	42.9
	% poor health	4.7	4.2	6.1	6.4	5.0
Religion/Religiosity	% protestant	26.0	39.7	24.4	37.2	29.6
	% attend church weekly or more	20.1	32.2	26.4	31.6	24.3
	% never or seldom attend church	57.1	50.8	35.0	50.0	53.0
Acquaintance with COVID-19	% know someone tested positive for COVID-19	51.9	43.5	37.1	32.0	46.6
	% know someone hospitalized with COVID-19	28.3	16.1	19.6	12.5	23.3
	% know someone who died from COVID-19	21.7	10.0	20.3	6.0	17.3
Perception on face masks	% agreeing that face masks help reduce COVID-19	92.9	52.2	61.4	19.9	73.3
Political characteristics	% plan to vote Democrat	71.3	14.5	42.7	5.7	49.8
	% registered to vote	88.4	90.2	71.6	87.2	86.9
	% liberal or very liberal ideology	41.9	11.0	28.9	5.6	30.6
	% conservative or very conservative ideology	17.4	57.0	24.3	59.2	30.2

Author statements

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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