

# **Increased Pressure Lowers Trust Among Unvaccinated: Effects of the Announcement of Re-Introducing Covid-Passports in Denmark**

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**Abstract:** On November 8, 2021, the Danish government held a press conference re-introducing COVID-19 passports both to mitigate the recent surge in COVID-19 infections and to put more pressure on still unvaccinated people to take up the vaccine. The press conference was also notable for the Prime Minister, Mette Frederiksen, condemning the unvaccinated in unprecedentedly harsh words. While new vaccinations increased in the weeks following the press conference, we show that the press conference had unintended, negative consequences. We analyze daily, nationally representative survey data (total N = 25K) employing a difference-in-differences design. We demonstrate that the press conference broadened by 25-33% the already large gaps between vaccinated and unvaccinated citizens on four out of five key psychological antecedents of health compliance. Most notably, we find that trust in the strategy of managing the COVID-19 epidemic decreased by 11 percentage points among the unvaccinated but stayed high among the vaccinated. When considering “pressure” as a pandemic management strategy it is important to be aware of these unintended costs and how they may shape the unvaccinated citizens’ compliance with other health advice and their overarching support for the political system.

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On September 10, 2021, the Danish government declassified COVID-19 such that it no longer would be considered a “critical disease”. Accordingly, all restrictions were lifted. To meet the expected increase of infections following the reopening, a core focus of the Danish government and authorities was to increase the proportion of Danes vaccinated against COVID-19 to 90 % of the eligible population. The government increased the accessibility of vaccination and the knowledge about the safety and effectiveness of the vaccines. The goal was missed by a few percentage points. However, in response to rising COVID-19 infections, the Danish Prime Minister, Mette Frederiksen, held a press conference on November 8, 2021 where she announced that the government would recommend that COVID-19 was again classified as a “critical disease” and that it recommended the reintroduction of covid passports to control rising infections.

While the vaccinated would automatically qualify for a “green” corona passport, the unvaccinated would have to obtain negative COVID-19 tests regularly to qualify.<sup>1</sup> Such an asymmetric introduction of burdens related to restrictions might be expected to have negative unintended ramifications for the targeted population’s support for the system and compliance with other important health advice beyond vaccination.

Simultaneously, the reintroduction of the corona passport was framed, in part, as a strategy of pressuring the unvaccinated towards vaccination. Mette Frederiksen morally condemned the lack of willingness to vaccinate. For example, she argued that “for all of us who are vaccinated - yes, there it is easy. (...) For all of you who are not vaccinated, it of course becomes more burdensome and that is also how I think it should be. (...) when there is this rise in infections, which there is now, then it is because there is a small group that does not play according to the rules that you have to play by when there is a pandemic. (...) And I cannot emphasize enough the unfairness in that a small group

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<sup>1</sup> More specifically, having recovered from COVID-19 within 6 months; having tested negatively for COVID-19 on a PCR or antigen test within 4 or 3 days, respectively; or being fully vaccinated against COVID-19 all qualified for a valid passport.

potentially ruins it for most of us. So, in my eyes, there are no excuses - also not of a moral character, to not go and get vaccinated”.<sup>2</sup> As we detail below, such moralizing or condemning communication may itself trigger or exacerbate adverse effects provoked by the asymmetric restrictions.

In the days and weeks following the announcement, new vaccinations increased and, as such, the practical and moral pressure on the vaccinated seemingly paid off (Sundhedsstyrelsen, 2021). Yet, the strategy of pressuring the unvaccinated might have had adverse effects. Specifically, we ask whether the reintroduction of the covid passports and associated communication decreased trust in the management of the pandemic, as well as other factors associated with increased compliance, among the unvaccinated.

To understand such potential adverse effects, it is helpful to recall that the vaccinated and the unvaccinated already differ in their level of trust and compliance. For example, prior work on vaccine hesitancy during the COVID-19 pandemic show that unvaccinated people are characterized by lower trust in the health authorities, the government and the overall political system (e.g., Kerr et al., 2021; Lindholt et al., 2021; Petersen et al., 2021b). Furthermore, unvaccinated individuals are also characterized by higher sentiments of pandemic fatigue (Lindholt et al., 2021).

Pandemic fatigue is elicited by the imposition of restrictions and it lowers support for the government’s handling of the pandemic, decreases government trust, breeds conspiracy thinking and support for public protests against the management of the pandemic (Petersen et al., 2021a). Those feeling most burdened by the COVID-19 crisis are even more likely to support the use of political violence (Bartusevičius et al., 2021). In addition to these political consequences, pandemic fatigue has also been argued and demonstrated to reduce the motivation to comply with health advice more generally during the COVID-19 pandemic (Haktanir et al., 2021; Lilleholt et al., 2020).

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<sup>2</sup> The official transcript is available here: <https://www.stm.dk/presse/pressemoedearkiv/pressemoede-den-8-november-2021/>.

To sum up, given the negative downstream consequences of pandemic fatigue, if the selective pressure on the unvaccinated increases their fatigue, it may have unintended negative consequences, even if it makes them more likely to get the vaccine. Specifically, it may lower political trust and support, as well as undermining key psychological factors underlying compliance with health advice. These factors include the motivation to contribute to solving the collective action problem of reducing infections (Johnson et al., 2020) and the motivation to protect the self and others against infections (Jørgensen et al., 2021; Kowlaski & Black, 2021). In addition to trust, the psychological antecedents of such motivations may include appraisals of the individual and social threat from infections as well as appraisals of the ability to cope with the health advice (Norman et al., 2015) (see the materials and methods section for further discussion).

It should be noted that while the implementation of behavioral incentives (e.g., restrictions of the freedom of movement for the unvaccinated or increased demands of testing for the unvaccinated) may itself trigger these adverse effects, the effects might be exacerbated by moralizing or condemning communication. Moralization involves targeting and condemnation of the group of unvaccinated (Bor et al., 2021) and has been widespread during the COVID-19 pandemic (Bor et al., 2021; Leal, 2021; Luttrell & Petty, 2021). Stressing the moral aspects of compliance may increase adherence among those already motivated (Luttrell & Petty, 2021; Pfattheicher et al., 2020). At the same time, it may also increase feelings of exclusion and marginalization among the groups that feel scapegoated by such rhetoric (i.e., the unvaccinated). Research outside of the pandemic demonstrates that feelings of marginalization and loss are strong predictors of distrust in the political system (Major et al., 2018; Obradović et al., 2020; Petersen et al., 2020).

While the totality of these theoretical arguments implies that the unvaccinated will react negatively to pressure, it is also logically possible that such pressure will not decrease trust beyond the initial lower level. Discerning between these possibilities is important. As already highlighted,

trust is a key component of long-term willingness to comply with advice from the health authorities. Lower trust among the unvaccinated, may thus imply that they become less motivated to comply with other advice regarding hygiene and distancing. Furthermore, lower trust may imply that they are even more reluctant to receive booster vaccinations in the future and, hence, may create long-term tensions in the ongoing crisis where booster vaccinations may be continuously required in the coming years.

## **Material and methods**

### *Data*

To examine the psychological effects of the announcement of the reintroduction of covid passports (and associated communication), we rely on survey data collected by Kantar Gallup. We have surveyed approximately 500 (new) respondents each day since May 2020. Here, we focus on the period October 11 to November 21, 2021 ( $N = 24,934$ ). This means that we use four weeks of data prior to the press conference on November 8 and two weeks of post-treatment data.<sup>3</sup> This setup allows us to exploit a difference-in-differences design (see research design section below for detail) to study the impact of the press conference among unvaccinated versus vaccinated on relevant outcomes.

Participants in the survey are Danish citizens aged 18 or older. They are recruited using stratified random sampling—on age, sex, and geography—based on the entire database of Danish social security numbers. The sample is thus representative of the Danish population. The response rate is about 25 percent. We did not employ any monetary incentives for participation. Participants are invited to take the survey via eBoks (the official electronic mail system used by the authorities and other institutions to communicate with citizens). Note that about 8 percent of the Danish population, mainly older people, are exempt from eBoks. Nonetheless, we observe that the sampled

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<sup>3</sup> We limit the observation period to November 21 because the Minister of Health (Magnus Heunicke) announced new restrictions on a press conference November 24.

observations are close to the population margins with respect to sex, age, and vote choice at the last first order national election, while the sample is biased towards people with higher education (see Table S.1). We conduct the main analyses using the unweighted data. However, we provide robustness analyses that use entropy balancing weights (Hainmueller et al., 2012) to post-stratify the final sample data to fit the demographic margins with respect to sex, age, education, geographic region, and vote choice. All results replicate (see Table S.9).

### *Outcomes*

As a routine part of this data collection, we capture a broad range of the psychological antecedents to compliance with advice from the health authorities during the COVID-19 pandemic. These antecedents come from two broad theoretical frameworks: Collective action theory and protection motivation theory.

Contributing to the stopping of infection spread can be seen as a collective action problem (Johnson et al., 2020) and, according to collective action theory, cooperative behavior is facilitated by trust in the authorities and others as well as beliefs in the procedural and distributional fairness of recommendations (Jenny et al., 2006). From our measures related to collective action motivations, we are also able to retrieve a key variable highlighted in the theoretical discussion: Trust in the pandemic management strategy.

Furthermore, according to protection motivation theory, the motivation to contribute to stopping infection spread is generated by a combination of *feelings of threat* and a *feeling of being able to cope* with the threat (Maddux & Rogers, 1983; Rogers, 1975; Jørgensen et al. 2021). Our data therefore also capture perceived threats (to society and to individuals) and coping appraisals (perceptions of the ability to follow recommendations, the effectiveness of the recommendations and the costs of following recommendations).

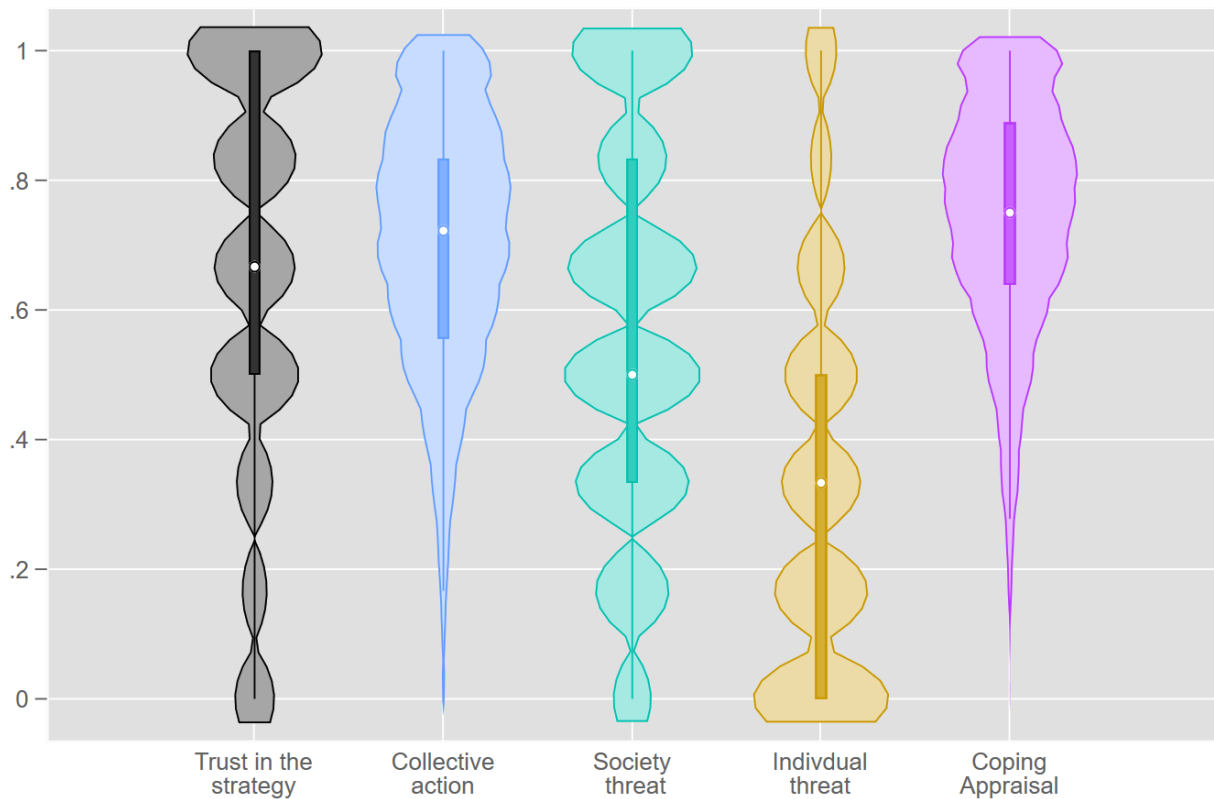
To measure trust, we utilize a measure that is closely related to participants' trust in the health authorities. Specifically, participants' were asked to give their agreement with the following statement: "I trust the political strategy behind the health authorities' advice". This measure forms part of a broader scale of collective action motivation, adapted from Jenny et al. (2006). Collective action motivation is measured using respondents' agreement with six statements, including the trust statement above ( $\alpha = 0.86$ ). The remaining five statements were: (1) The health authorities' advice are important in order to achieve a safe society, (2) The health authorities' advice create a fair distribution of burdens, (3) I feel a sense of ownership of the health authorities' advice, (4) I have been given clear information on the reasons for the health authorities' advice, (5) The advice of the health authorities are sufficient to prevent the spread of infection.

To measure threat appraisal, we distinguish between the perceived threat that the coronavirus poses to the society and the perceived threat that the individual experiences that the virus poses to oneself. Participants' were asked "To what degree do you feel that...". Then they responded to two statements: One about threat to the society ("...the Coronavirus is a threat to the Danish society.") and one about individual threat ("...you are threatened by the Coronavirus").

For coping appraisal, we construct a scale based on participants' agreement with six statements. Two statements relate to self-efficacy: (1) It is easy for me to follow the advice of the health authorities and (2) I feel confident that I can follow the advice of the health authorities if I want to. Two statements relate to response efficacy: (3) If I follow the advice of the health authorities, I will be as safe as possible during the corona epidemic and (4) If I follow the advice of the health authorities, I will help protect others from the coronavirus. Finally, another two statements relate to response costs: (5) If I follow the advice of the health authorities, my relationship with people outside the family will be impaired and (6) If I follow the advice of the health authorities, my life will be degraded. Together the six outcomes form a reliable coping appraisal scale ( $\alpha = 0.72$ ).

For all items, participants responded on 7-point scales ranging from 1 (completely disagree) to 7 (completely agree). Do not know answers are excluded. We rescale all outcomes to range from 0-1 with 1 indicating, for example, high trust in the strategy of managing the COVID-19 epidemic. Figure 1 displays the distributions of our five outcome variables. General levels of trust, collective action motivation and coping appraisal are high (trust  $M(SD) = .65(.31)$ , collective action motivation  $M(SD) = .69(.22)$ , coping appraisal  $M(SD) = .74(.19)$ ), while society threat appraisal is at a moderate level (society threat  $M(SD) = .56(.30)$ ) and individual threat appraisal is low (individual threat  $M(SD) = .33(.30)$ ).

Figure 1. Distribution of outcome variables



Note: Shaded areas are kernel densities, dots denote the medians, thick lines are the interquartile ranges, and thin lines are the minimum and maximum values.



## *Treatment*

Our treatment is the combination of vaccination status and the press conference communication. Specifically, we distinguish between vaccinated and unvaccinated with the unvaccinated being the target of the moralizing communication at the press conference November 8. We asked the question: “Are you vaccinated against COVID-19?”. Participants’ had seven response options. Table S.2 shows the response options and the distribution of responses. Participants are categorized as vaccinated (and coded as 0 on the vaccination status indicator) if they are in response categories 1-3 or 5. They are categorized as unvaccinated (and coded as 1 on the vaccination status indicator) if they are in response categories 4, 6, or 7. Note that results are robust to excluding response category 7 (“I do not wish to answer”) from the estimations (see Table S.6).

It is fruitful to consider the November 8 press conference as a compound of three components. First, it reintroduced the corona passport: while the vaccinated would automatically acquire a valid passport, the unvaccinated would have to be periodically tested. Second, the Prime Minister morally condemned unvaccinated citizens. Third, COVID-19 was re-introduced as a “critical disease” signaling an increase in the threat the pandemic posits on society. Each component of this compound treatment can be expected to have independent effects that are difficult to separate between. However, we would expect that the different outcomes are sensitive to different components of the treatment. More broadly, we, *first*, expect that the outcomes related to (a) trust in the handling of the coronavirus crisis, (b) collective action motivation and (c) coping appraisal are most sensitive to components (1) and (2) that was targeted towards the unvaccinated. *Second*, we expect that the unvaccinated are less sensitive to information about COVID-19 as a “critical disease” (component 3). Therefore, we would expect this information to affect the vaccinated and, more specifically, their assessment of threats.

## *Research design*

The setup as described above allows us to employ a difference-in-differences (DiD) estimator utilizing our rolling cross-sections to compare the unvaccinated who were the target of the communication at the press conference to the vaccinated. In particular, the DiD estimates the effect of the press conference by subtracting the pre-post press conference change in the outcomes of the vaccinated from the pre-post change of the unvaccinated.

The difference-in-differences design provides a reliable estimate of the causal impact on the assumption of parallel trends in the absence of a press conference. In other words, absent the press conference the unvaccinated and vaccinated would have followed common (or parallel) outcome trajectories. Of course, this assumption is fundamentally untestable. However, one can assess the assumption's plausibility by comparing the pre-press conference outcome trajectories of the vaccinated and unvaccinated. If the assumption is plausible, then we should not observe any systematic differences in the pre-press conference trajectories of the vaccinated and unvaccinated. Figure 2 provides the difference between the unvaccinated and vaccinated across each of the five outcomes benchmarked against the difference in week 41 (i.e., four weeks prior to the press conference). Overall, the figure shows that there are no statistically discernible differences between the unvaccinated and the vaccinated in the pre-press conference period (until week 44) compared to the benchmark differences in week 41. In other words, the figure altogether supports that the parallel trends assumption seem plausible in this application and therefore corroborate the design-based identification<sup>4</sup>.

Focusing, instead, on the post-press conference periods (week 45 and week 46), we begin to observe differences in the outcome trajectories of the vaccinated and unvaccinated compared to the

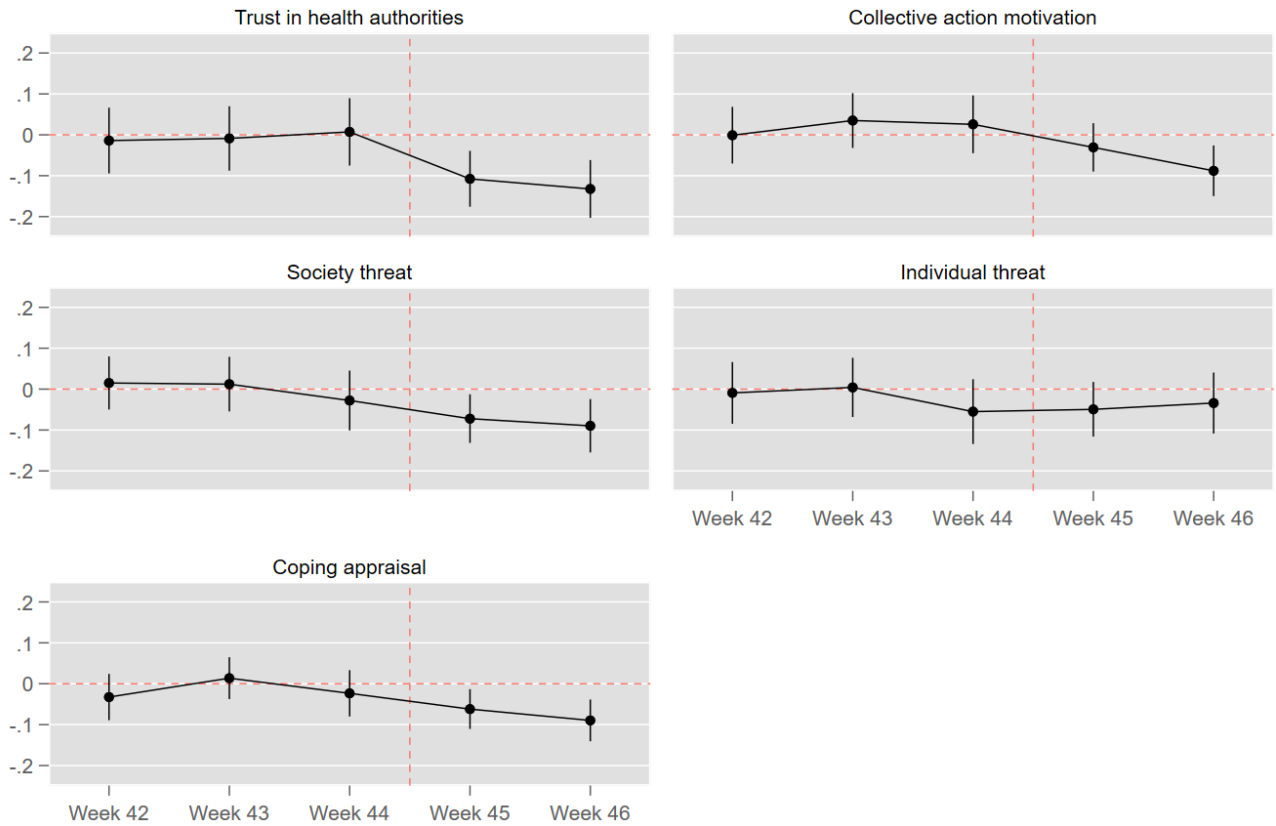
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<sup>4</sup> One note of caution is with respect to the individual threat appraisal outcome. Here, we see a tendency toward a decrease from week 43 to 44. A potential pre-post difference in individual threat appraisal should therefore be interpreted cautiously because this indicates that an adjustment might already have started prior to the press conference.

benchmark differences. More specifically, comparing the unvaccinated to the vaccinated we observe decreases in trust in the strategy, collective action, society threat appraisal, and coping appraisal. In contrast, we observe little difference in individual threat appraisal. In the results section, we model these potential differences more formally.

Before turning to these results, it is important to note one final concern of potential selection bias. In particular, potential changes in the composition of the unvaccinated and vaccinated groups. Given that the number of daily first injection vaccinations increased following the press conference (Sundhedsstyrelsen, 2021) this could alternatively explain the patterns that we observe in Figure 2. Two arguments—one substantive and one empirical—speak against this concern and corroborate the design-based identification. First, while the daily number of new vaccinations increased after the press conference, these increases were still low in relative terms compared to the unvaccinated group as a whole (Sundhedsstyrelsen, 2021). That is corroborated by the fact that we do not observe a change in the share of unvaccinated in our data before and after the press conference. In other words, these increases would not be enough to move the outcomes to the extent that we observe in Figure 2. Second, we observe a range of background characteristics in our dataset (sex, age, education, occupation, geographic region, vote choice at last first order national election). If a compositional shift between the two groups had driven the observed differences rather than the press conference communication, then we should expect that the estimated effects drop toward zero when controlling for these background characteristics. Instead, when we control for these background characteristics—including allowing the covariates to have differential impacts before and after the press conference—the estimated effects remain fundamentally unchanged (see Tables S.6 and S.7 in the SI).

Figure 2. The difference-in-differences design



Note: Filled circles are the DiD estimates compared to the benchmark week (week 41). 95 percent confidence intervals (robust standard errors). The vertical dashed lines demark the pre-press conference (until week 44) and post-press conference (after week 44) periods.

## Results

As our benchmark results, we estimate the mean DiD effects of the November 8 press conference on our five outcome variables. That is, we estimate if the change in attitudes from before to after the press conference is different between vaccinated and unvaccinated respondents. More specifically, within a regression framework this is modeled by regressing each outcome on the unvaccinated indicator, the press conference indicator, and the interaction between the two. The estimated DiD effect is captured by the interaction term. The coefficient on the unvaccinated indicator gives the mean difference between the unvaccinated and vaccinated in the pre-press conference period. The coefficient on the press conference indicator gives the mean difference in the outcomes from the pre-

press conference period to the post-press conference period among the vaccinated. Finally, the constant gives the mean level of trust among the vaccinated in the pre-press conference period. In Figure 3, we present the results from these analyses (Table S.3 reports the supporting regression table). The top-left panel displays the estimated effects. The remaining panels give the predicted outcome levels in the pre- and post-press conference period.

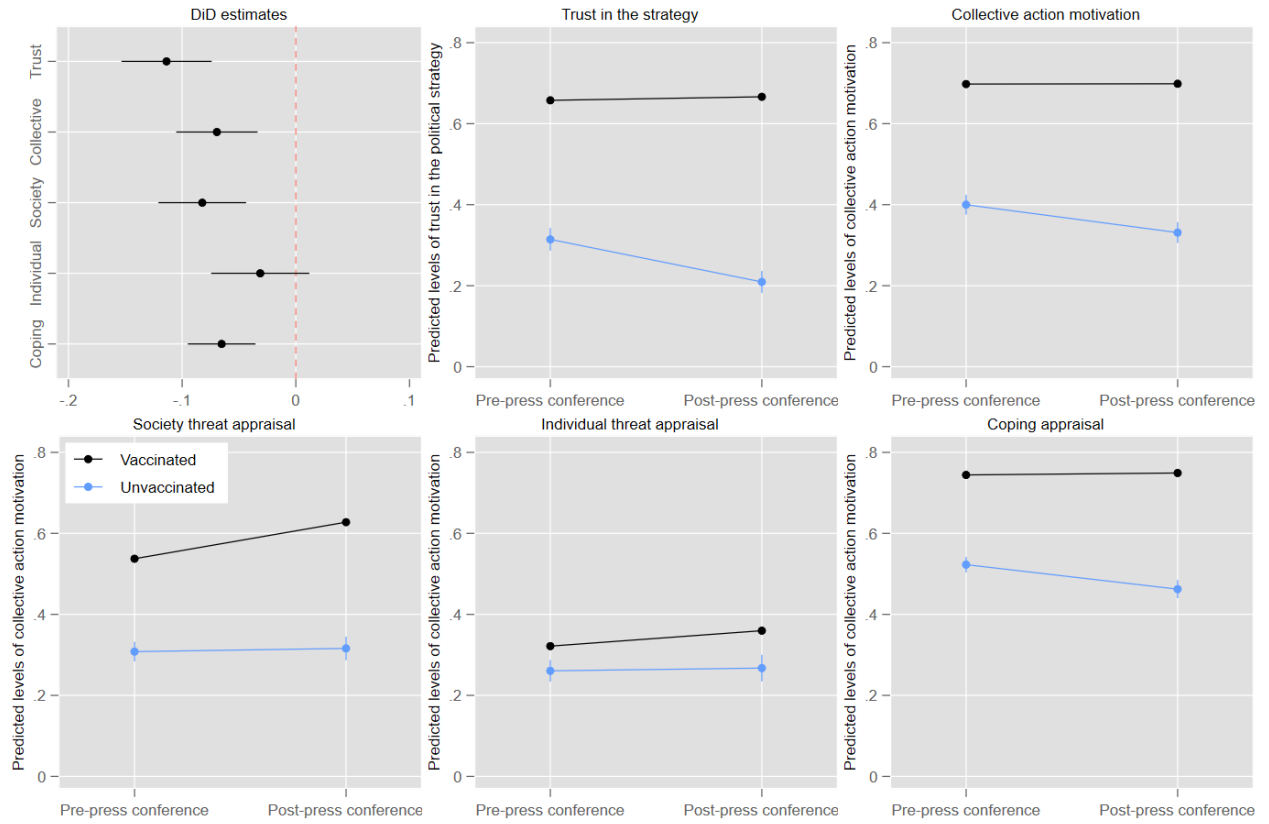
Focusing on trust in the strategy, we observe a marked impact of the press conference on the unvaccinated: their trust decreases by about 11 percentage points ( $p < 0.001$ ) in the post-press conference period compared to the pre-press conference period. As visualized in the top-middle panel, we observe that this marked effect estimate is driven by a decrease in trust among the unvaccinated, while the pre-post press conference trend in trust is completely stable among the vaccinated. The 11 points decrease in trust add to an existing 34 percentage points ( $p < 0.001$ ) difference in the pre-press conference period. Consequently, the press conference effect amplifies the existing trust cleavage by about 1/3.

Moving to collective action motivation (the top-right panel), the model estimates that the press conference communication lowered collective action motivation of the unvaccinated by 7 percentage points ( $p < 0.001$ ). Again, the figure visualizes how this effect is driven by a drop in motivation from the pre- to the post-press conference period among the unvaccinated. Benchmarked against a 30 percentage points ( $p < 0.001$ ) difference in collective action motivation in the pre-press conference period, the press conference communication drives the collective action motivation gap up by an additional 1/4.

Turning attention to the factors related to protection motivation, we similarly observe that the outcome trajectories of the unvaccinated developed negatively compared to the vaccinated. That is, the press conference had negative impacts on protection motivation more broadly. For societal threat appraisal, we observe that the change in appraisal of society threat from the pre-post press conference

period was 8 percentage points ( $p < 0.001$ ) lower among the unvaccinated compared to the vaccinated. From the bottom-left panel, it is clear that this effect is driven by an increase in society threat appraisal among the vaccinated rather than a decrease among the unvaccinated. Compared to the benchmark difference in pre-press conference society threat appraisal of about 23 percentage points ( $p < 0.001$ ), this adds an additional 1/3 to that gap. For personal threat appraisal, the upper-left panel illustrates how the estimated effect of -0.03 ( $p = 0.155$ ) is statistically indistinguishable from 0 at the conventional 95 percent confidence level. Finally, for coping appraisal, we observe that the press-conference stimulated an estimated drop of about 7 percentage points ( $p < 0.001$ ). As is clear from the bottom-right panel this negative impact is driven by a drop in coping appraisal for the unvaccinated. This amplifies the existing pre-press conference gap by about 1/3 moving the difference in coping appraisal from about 22 percentage points ( $p < 0.001$ ) to about 29 percentage points. Note that splitting coping appraisal into its subcomponents (self-efficacy, response efficacy, and response costs), yields substantively similar results (see Table S.10).

Figure 3. Estimated difference-in-differences effects



Note: Top-left panel: DiD effect estimates with 95 % confidence intervals. Robust standard errors in parentheses. Remaining panels: black filled circles and lines illustrate the outcome trajectories of the vaccinated while blue filled circles and lines illustrate the trajectories of the unvaccinated.

The results in Figure 3 are robust across a range of robustness tests, corroborating the validity of the findings and the design-based causal identification strategy. Thus, Tables S.3 and S.4 show that estimated effects remain fundamentally unchanged when accounting for potential differential time trends in the outcomes. In the SI, we also report on robustness that: (1) exclude participants who do not wish to answer the vaccination question (see Table S.5), (2) include background characteristics to control for potential compositional changes between the two groups (see Tables S.6 and S.7), and (3) include post-stratification weights that reweight the data toward the population margins (see Table S.8). Across all tests, the results replicate. Altogether, this corroborates the design-based identification strategy.

## **Discussion and Conclusion**

The findings show that among those who are unvaccinated, trust in the handling of the coronavirus epidemic decreased with 11 percentage points following the announcement of the reintroduction of covid passports. Furthermore, the motivation of unvaccinated to engage in collective action to stop COVID-19 infections decreased with 7 percentage points. This implies that while pressure may increase vaccinations, it may also decrease compliance with other health advice and long-term motivations to receive booster vaccines. Collective action motivation is thus a key predictor of attention to advice regarding distancing and hygiene (Rasmussen et al., 2021) and trust in the health authorities is the best predictor of vaccine acceptance (Lindholt et al., 2021). Furthermore, fatigue from pressure may lower the trust in the entire political system and facilitate engagement in disruptive protest behavior (Petersen et al., 2021a). In this regard, it is also important to note that once trust is lost, it is difficult to regain it via communication (Petersen et al., 2021b).

It is important to note that these findings do not necessarily imply that restrictions targeting the unvaccinated should be avoided altogether. Rather, the findings indicate that when public health concerns require the use of targeted restrictions, effort should be made to buffer the negative effects on trust as much as possible. Part of the solution may lie in only introducing restrictions that are more burdensome for specific groups, if they are proportional to the risk of infection spread associated with that group. Part of the solution is also related to communication. To the extent restrictions are introduced that are particularly burdensome on a specific group, it may be advantageous to not use moralizing and condemning justifications but simply rely on more impartial communication regarding infection spread.

It is relevant to note that these findings were obtained in Denmark, a country characterized by high trust in the management of the pandemic and low pandemic fatigue among its population



(Petersen & Bor, 2021). Accordingly, the adverse consequences of pressuring unvaccinated may be even more negative in countries characterized by less trust and more fatigue. This suggests that if pressure is used as a vaccination strategy, it is important to factor in the costs to trust in addition to just the health benefits of increased vaccinations.

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## Supplementary Information

### 1. Materials and Methods

Table S.1. Population margins versus sample and weighted sample margins

	Sample	Weighted sample	Population
<b>Education</b>			
Primary school	9.67 %	25.2 %	25.1 %
Vocational	23.7 %	29.5 %	29.5 %
High school	10.9 %	10.9 %	10.9 %
Bachelor's degree	36.1 %	23.1 %	23.0 %
Master's degree	19.7 %	11.4 %	11.4 %
<b>Sex x age</b>			
Female 18-29 years	9.7 %	9.7 %	9.7 %
Female 30-39 years	7.0 %	7.2 %	7.2 %
Female 40-49 years	8.9 %	8.1 %	8.1 %
Female 50-59 years	9.1 %	8.5 %	8.5 %
Female 60-69 years	8.1 %	7.2 %	7.2 %
Female 70+ year	6.3 %	9.9 %	9.9 %
Male 18-29 years	11.7 %	10.1 %	10.1 %
Male 30-39 years	7.3 %	7.5 %	7.5 %
Male 40-49 years	9.0 %	8.1 %	8.1 %
Male 50-59 years	7.8 %	8.6 %	8.6 %
Male 60-69 years	8.0 %	7.0 %	7.0 %
Male 70+ year	6.9 %	8.1 %	8.1 %
<b>Region</b>			
Capitol	31.4 %	31.8 %	31.7 %
Midtjylland	24.3 %	22.6 %	22.6 %
Nordjylland	9.9 %	10.2 %	10.2 %
Sjælland	13.6 %	14.4 %	14.4 %
Syddanmark	20.9 %	21.0 %	21.0 %
<b>Party</b>			
Socialdemokratiet	22.27 %	21.68 %	21.68 %
Radikale Venstre	7.21 %	7.21 %	7.22 %
Det Konservative Folkeparti	5.96 %	5.54 %	5.54 %
Nye Borgerlige	1.50 %	1.97 %	1.97 %
Klaus Riskær Pedersen	0.26 %	0.70 %	0.70 %
Socialistisk Folkeparti	5.78 %	6.45 %	6.45 %
Liberal Alliance	2.00 %	1.95 %	1.95 %
Kristendemokraterne	1.01 %	1.44 %	1.44 %
Dansk Folkeparti	3.89 %	7.30 %	7.31 %
Stram Kurs	0.23 %	1.50 %	1.50 %
Venstre	15.41 %	19.56 %	19.58 %
Enhedslisten	6.16 %	5.81 %	5.81 %
Alternativet	1.96 %	2.47 %	2.47 %
Other	26.48 %	16.43 %	16.37 %

Table S.2. Frequencies of vaccinated and unvaccinated respondents

<b>Response options</b>		<b>Frequency</b>
1	I am fully vaccinated	23,335
2	I have started vaccination	468
3	I have received a vaccine invitation, but I have not had the first shot yet	184
4	I have received a vaccine invitation, but I have decided not to take it	788
5	I have not received a vaccine invitation, but I wish to be vaccinated	10
6	I have not received a vaccine invitation and I do not wish to be vaccinated	53
7	I do not want to answer	96

## 2. Supporting regression table

Table S.3. Estimated benchmark difference-in-differences effects

	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome	Trust in strategy	Collective action	Society threat	Individual threat	Coping appraisal
Unvaccinated	-0.34*** (0.015)	-0.30*** (0.013)	-0.23*** (0.013)	-0.06*** (0.014)	-0.22*** (0.010)
Press conference	0.01* (0.004)	0.00 (0.003)	0.09*** (0.004)	0.04*** (0.004)	0.01* (0.002)
Unvaccinated x Press conference	-0.11*** (0.020)	-0.07*** (0.018)	-0.08*** (0.020)	-0.03 (0.022)	-0.07*** (0.015)
Constant	0.66*** (0.003)	0.70*** (0.002)	0.53*** (0.002)	0.32*** (0.003)	0.75*** (0.002)
N	24,259	20,486	24,246	23,654	23,842

Note: Unstandardized regression coefficients with robust standard errors in parentheses. \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.

### 3. Additional analyses

#### 3.1 Time trends

In Table S.4, we include week dummies to capture any common time trends in the outcomes. In Table S.5, we further allow these time trends to have differential effects across the vaccinated and unvaccinated. In other words, we relax the parallel trends assumption by allowing the vaccinated and unvaccinated to follow differential trends (more specifically, we interact the week dummies with the unvaccinated indicator). Had the parallel trends assumption been implausible, we would expect that the estimated effects changed. Instead, we see that the estimates remain stable, which corroborate the design-based identification.

Table S.4. Difference-in-differences effects, week dummies

	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome	Trust in strategy	Collective action	Society threat	Individual threat	Coping appraisal
Unvaccinated	-0.34*** (0.01)	-0.30*** (0.01)	-0.23*** (0.01)	-0.06*** (0.01)	-0.22*** (0.01)
Press conference	-0.00 (0.01)	-0.01** (0.01)	0.11*** (0.01)	0.06*** (0.01)	-0.00 (0.00)
Unvaccinated x Press conference	-0.11*** (0.02)	-0.07*** (0.02)	-0.08*** (0.02)	-0.03 (0.02)	-0.07*** (0.02)
Constant	0.67*** (0.00)	0.70*** (0.00)	0.51*** (0.00)	0.31*** (0.00)	0.75*** (0.00)
Week dummies	Yes	Yes	Yes	Yes	Yes
N	24,259	20,486	24,246	23,654	23,842

Note: Unstandardized regression coefficients with robust standard errors in parentheses. \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.



Table S.5. Difference-in-differences effects, differential trends

	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome	Trust in strategy	Collective action	Society threat	Individual threat	Coping appraisal
Unvaccinated	-0.34*** (0.03)	-0.31*** (0.02)	-0.23*** (0.02)	-0.05 (0.03)	-0.21*** (0.02)
Press conference	-0.00 (0.01)	-0.01* (0.01)	0.11*** (0.01)	0.06*** (0.01)	-0.00 (0.00)
Unvaccinated x Press conference	-0.13*** (0.04)	-0.09** (0.03)	-0.09** (0.03)	-0.03 (0.04)	-0.09*** (0.03)
Constant	0.66*** (0.00)	0.70*** (0.00)	0.51*** (0.00)	0.31*** (0.00)	0.75*** (0.00)
Week dummies	Yes	Yes	Yes	Yes	Yes
Unvaccinated x week dummies	Yes	Yes	Yes	Yes	Yes
N	24,259	20,486	24,246	23,654	23,842

Note: Unstandardized regression coefficients with robust standard errors in parentheses. \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.

### 3.2 Exclusion of “do not wish to answer” responses

Table S.6. Difference-in-differences effects, excluding those who did not wish to answer the vaccination question

	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome	Trust in strategy	Collective action	Society threat	Individual threat	Coping appraisal
Unvaccinated	-0.36*** (0.01)	-0.30*** (0.01)	-0.24*** (0.01)	-0.06*** (0.01)	-0.23*** (0.01)
Press conference	0.01* (0.00)	0.00 (0.00)	0.09*** (0.00)	0.04*** (0.00)	0.00* (0.00)
Unvaccinated x Press conference	-0.10*** (0.02)	-0.07*** (0.02)	-0.08*** (0.02)	-0.04 (0.02)	-0.06*** (0.02)
Constant	0.66*** (0.00)	0.70*** (0.00)	0.54*** (0.00)	0.32*** (0.00)	0.74*** (0.00)
N	24,179	20,426	24,165	23,573	23,773

Note: Unstandardized regression coefficients with robust standard errors in parentheses. \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.

### 3.3 Probing the assumption of no compositional changes between the vaccinated and unvaccinated groups

Table S.7. Difference-in-differences effects, controlling for background characteristics

	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome	Trust in strategy	Collective action	Society threat	Individual threat	Coping appraisal
Unvaccinated	-0.27*** (0.01)	-0.24*** (0.01)	-0.21*** (0.01)	-0.03* (0.01)	-0.19*** (0.01)
Press conference	0.01* (0.00)	0.00 (0.00)	0.09** (0.00)	0.04*** (0.00)	0.01* (0.00)
Unvaccinated x Press conference	-0.10*** (0.02)	-0.06*** (0.02)	-0.07*** (0.02)	-0.02 (0.02)	-0.06*** (0.01)
Constant	0.54*** (0.01)	0.58*** (0.01)	0.50*** (0.01)	0.13*** (0.01)	0.66*** (0.01)
Background characteristics	Yes	Yes	Yes	Yes	Yes
N	24,259	20,486	24,246	23,654	23,842

Note: Unstandardized regression coefficients with robust standard errors in parentheses. \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05. Background characteristics: Sex, age, education, occupation, geographic region, and vote choice at last first order national election.

Table S.8. Difference-in-differences effects, allowing impacts of background characteristics to vary before and after the press conference

	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome	Trust in strategy	Collective action	Society threat	Individual threat	Coping appraisal
Unvaccinated	-0.28*** (0.01)	-0.24*** (0.01)	-0.21*** (0.01)	-0.03* (0.01)	-0.19*** (0.01)
Press conference	-0.06* (0.02)	-0.04* (0.02)	0.06** (0.02)	0.02 (0.03)	0.00 (0.01)
Unvaccinated x Press conference	-0.10*** (0.02)	-0.06*** (0.02)	-0.07*** (0.02)	-0.01 (0.02)	-0.06*** (0.02)
Constant	0.60*** (0.02)	0.62*** (0.01)	0.53*** (0.02)	0.17*** (0.02)	0.68*** (0.01)
Background characteristics	Yes	Yes	Yes	Yes	Yes
Background characteristics x Press conference	Yes	Yes	Yes	Yes	Yes
N	24,259	20,486	24,246	23,654	23,842

Note: Unstandardized regression coefficients with robust standard errors in parentheses. \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05. Background characteristics: Sex, age, education, occupation, geographic region, and vote choice at last first order national election.

### 3.4 Reweighting the data toward the population by applying post-stratification weights

Table S.9. Difference-in-differences effects using post-stratification weights

	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome	Trust in strategy	Collective action	Society threat	Individual threat	Coping appraisal
Unvaccinated	-0.36*** (0.02)	-0.31*** (0.02)	-0.24*** (0.02)	-0.06** (0.02)	-0.21*** (0.02)
Press conference	0.01 (0.01)	0.00 (0.00)	0.09*** (0.01)	0.04*** (0.01)	0.01* (0.00)
Unvaccinated x Press conference	-0.11*** (0.03)	-0.06* (0.03)	-0.07** (0.03)	-0.04 (0.03)	-0.08*** (0.02)
Constant	0.66*** (0.00)	0.70*** (0.00)	0.55*** (0.00)	0.32*** (0.00)	0.74*** (0.00)
N	24,228	20,457	24,215	23,625	23,811

Note: Unstandardized regression coefficients with robust standard errors in parentheses. \*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.

### 3.5 Re-estimating effects on the subcomponent of coping appraisal

Table S.10. Difference-in-differences effects, subcomponents of coping appraisal

	Model 1	Model 2	Model 3
Outcome	Self-efficacy	Response efficacy	Response cost
Unvaccinated	-0.19*** (0.01)	-0.29*** (0.01)	0.16*** (0.01)
Press conference	0.01* (0.00)	-0.00 (0.00)	-0.01** (0.00)
Unvaccinated x Press conference	-0.05** (0.02)	-0.08*** (0.02)	0.04* (0.02)
Constant	0.81*** (0.00)	0.79*** (0.00)	0.38*** (0.00)
N	24,897	24,880	24,799

Note: Unstandardized regression coefficients with robust standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ . Note an increase in response cost corresponds to a decrease in the overall coping appraisal measure.