The Development of Pandemic Fatigue During the COVID-19 Pandemic and How It Fuels Political Discontent Across 8 Western Democracies

The HOPE project (www.hope-project.dk)

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Introduction

Pandemic fatigue is defined by the World Health Organisation (WHO) as a: "demotivation to follow recommended protective behaviors, emerging gradually over time and affected by a number of emotions, experiences and perceptions" (WHO, 2020). Most academic work on pandemic fatigue has been devoted to examining and/or questioning its relation to complying behavior (Lilleholt et al., 2020). However, we still know very little of the relation between pandemic fatigue and different perceptions, emotions and political attitudes.

One particular aspect that we need to shed light on, is whether this demotivation also translates into a lack of supporting COVID-19 policies, the government and the democracy more generally. In other words, whether pandemic fatigue fuels political discontent towards established political elites and nationwide pandemic policies? Michie et al. (2020) suggest, that pandemic fatigue may lead to anger at those perceived as responsible. The most immediate target of anger in this regard are the political elites and the COVID-19 restrictions that causes the distress and demotivation. It is difficult to direct anger towards a faceless virus.

In this report, we therefore analyze (1) how pandemic fatigue has developed over the course of the pandemic, (2) whether pandemic fatigue is predicted by time, stringency and severity of the pandemic, and (3) whether pandemic fatigue fuels political discontent.

Methods and Materials

Data

We fielded quota-sampled surveys in eight countries (N = 48.714) from September 13, 2020 until July 20, 2021: Denmark, France, Germany, Hungary, Italy, Sweden, the United Kingdom, the United States. These countries were chosen to represent a diversity of national responses to the COVID-19 pandemic as well as a diversity in the severity of the local epidemic. Data are collected one or two times per month in rounds of 500 respondents per country. In each round, some participants are re-contacted, which provides a panel component to the data (N = 10,792). In each of the eight countries, the survey company Epinion sampled adult respondents using online panels. The survey was conducted in accordance with the guidelines of the Danish National Committee of Health Research Ethics for survey research that do not involve human biological material and all participants provided informed consent. Survey respondents were

quota sampled to match the population margins on age, gender, and geographic location for each of the eight countries.

Measurement

We measure pandemic fatigue using the following question: *"To what extent do you agree or disagree with the following statement? I do not think I can keep up with the restrictions against the coronavirus for much longer".* Respondents answered on a 5-point scale from "completely disagree" to "completely agree". The question is rescaled to range from 0 to 1, with higher values indicating a higher level of pandemic fatigue.

Correlates of pandemic fatigue

To assess macro-level correlates of pandemic fatigue, we measured the stringency of government COVID-19-policies using the Oxford Covid-19 Government Response Tracker (Hale et. al, 2020). The index is a composite measure of the number of non-pharmaceutical interventions taken in a specific country (e.g., school and workplace closings, curfews and restrictions on international travel). The index is scaled from 0 to 1, with higher values indicating a higher level of stringency of the government response. To measure the severity of the local epidemic, we use the registered count of daily deaths and case counts per capita. These numbers are also taken from the Oxford Government Response Tracker dataset. These measures are rescaled from 0 to 1, with higher values indicating a higher level of daily deaths and case counts per capita.

To assess whether pandemic fatigue fuels political discontent we include the following six individual-level measures: (1) opposition to pandemic policies, (2) concern about democratic rights, (3) distrust in the government, (4) conspiratorial thinking, (5) support for anti-lockdown protests, and (6) support for a strong leader (a classical measure of authoritarian attitudes). Table 1 provides an overview of question wordings and scales for these measures.

Table 1. Measures of political discontent

	Questions	Values
Opposition to pandemic policies	The government's response to the coronavirus has been too extreme.	1. Completely disagree 2. Somewhat disagree 3. Neither agree nor disagree 4. Somewhat agree 5. Completely agree
Concern about democratic rights	I am concerned about my democratic rights in the current circumstances.	1. Completely disagree 2. Somewhat disagree 3. Neither agree nor disagree 4. Somewhat agree 5. Completely agree
Distrust in the government	Give your assessment on a scale from 0 to 10, where 0 indicates that you have no confidence in the government at all, and 10 indicates that you have full confidence in the government.*	0. No confidence at al 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. Full confidence
Conspiratorial thinking	I believe the government is hiding important information from the public about the coronavirus and its cures.	1. Completely disagree 2. Somewhat disagree 3. Neither agree nor disagree 4. Somewhat agree 5. Completely agree
Support for anti-lockdown protests	I support the public protests against the government's policies during the COVID-19 pandemic.	1. Not at all 2. To a lesser degree 3. To a certain degree 4. To a high degree
Support for a strong leader	Our country needs a strong leader right now.	1. Completely disagree 2. Somewhat disagree 3. Neither agree nor disagree 4. Somewhat agree 5. Completely agree

*Note: All measures are rescaled to range from 0-1, with higher values indicating a higher level of (1) opposition to pandemic policies, (2) concern about democratic rights, (3) distrust in the government, (4) conspiratorial thinking, (5) support for anti-lockdown protests, and (6) support for a strong leader. *Note that the measure of distrust in the government is reversed, so that a higher value indicates a higher level of distrust in the government.*

Finally, we measured the following demographic variables: sex, age and education. Sex is an indicator variable (0 for females; 1 for males). Age is a continuous variable asking respondents how old they are. Age is rescaled from 0-1, with 0 being the minimum age in the sample (18 years) and 1 being the maximum age (100 years). Education is an indicator variable based on the internationally comparable ISCED-scale (0 for non-tertiary education; 1 for tertiary education).

Statistical analysis

To answer our research question, we conduct three different sets of statistical analyses. *First*, we plot the two macro-level predictors, stringency and COVID-19 death counts along with pandemic fatigue over the survey period. Furthermore, we present an aggregated model that investigates how these macro-level predictors, along with time, predict pandemic fatigue. In this model we use country-level fixed effects.

Second, we investigate the correlations between pandemic fatigue and the six measures of political discontent. These models include demographic variables along with dummies for each data round to control for time-specific fixed effects.

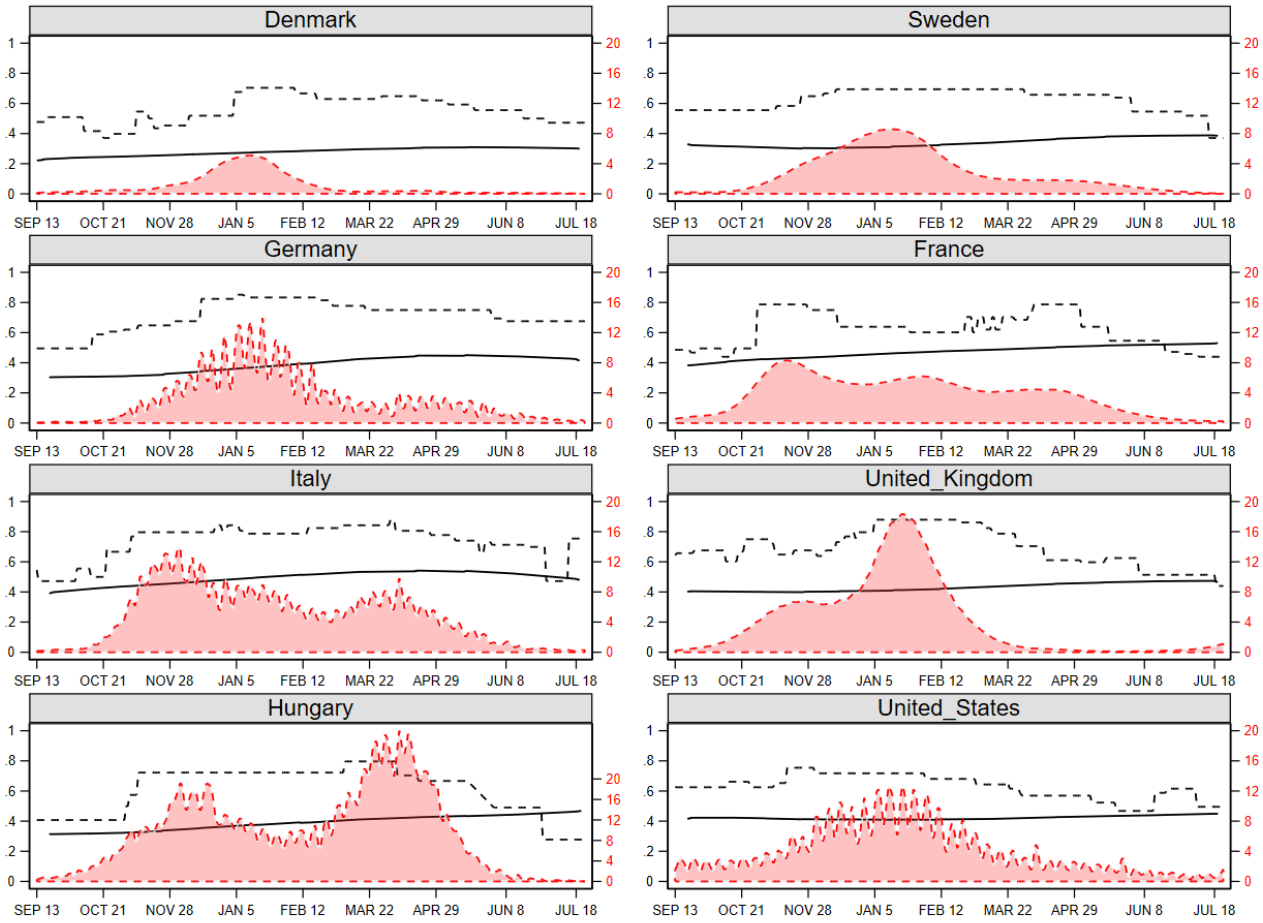
Third, to gauge causality, we utilize our panel component and present a model that uses a two-way fixed effects estimator. To account for the fact that individuals are nested within countries, we cluster the standard errors at the country level.

All variables in the analysis below are scaled from 0-1. Given that both the outcome and predictors are scaled to range between 0-1, the size of the estimated coefficients reported below reflects the percentage points change in the outcome variables when we compare individuals at the minimum and maximum values for each of the correlates, respectively.

Results

In Figure 1 below, we illustrate the country-level developments in (1) pandemic fatigue, (2) stringency, and (3) severity of the pandemic from September 2020 until July 2021.

Figure 1. Fatigue, support for stringency and daily deaths per. million.



Note: Solid lines are the developments in fatigue. Dashed lines are the developments in stringency of government response to COVID-19. Red areas display the developments in the daily COVID-19 death counts per million using a kernel smoother.

From figure 1, we first see that pandemic fatigue (the solid line) increases across all eight European countries over time. However, there are substantial differences to these developments across countries. In Hungary for example, we observe a large increase in pandemic fatigue of around 17 percentage points from September 2020 to July 2021 whereas United States only experiences an increase that amounts to 3.5 percentage points over the same survey period.

Second, regarding stringency (the dashed line), the overall tendency is also an increase over time. In most countries we see an increase after the rising death numbers in late 2020, and these stringency levels stay high for most countries throughout the first four months of 2021. In most of the countries, the level of stringency has decreased during the summer of 2021.

Third, figure 1 suggests that pandemic fatigue goes up when the severity of the pandemic (the red area) goes down. This is illustrated clearly in Sweden where it can be seen that pandemic fatigue goes down when daily death numbers rise by early December 2020, but when death numbers start to decline in February 2021, pandemic fatigue levels go back up.

In sum, patterns shown in figure 1 suggest, that pandemic fatigue increases when time goes by, stringency goes up and death numbers goes down. However, these macro-level predictors are presumed to be highly intercorrelated and in an effort to disentangle their effects on fatigue from each other, we present table 2. Table 2 presents the results from our aggregated model that investigates how time (week), policy stringency, and daily new deaths and cases per capita relate to pandemic fatigue. The estimated correlations are pooled together and fixed on country.

Table 2. Macro-level predictors of pandemic fatigue

	Fatigue
Week	0.110*** (0.016)
Stringency	0.126** (0.034)
New cases per. capita	0.002 (0.019)
New deaths per. capita	-0.142** (0.028)
Constant	0.219*** (0.026)
Observations	690
R^2	0.297

Note: $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$. Standard errors in parentheses. Estimates are fixed on country. All variables are scaled from 0-1. The daily COVID-19 cases and deaths per. capita along with the stringency-index are retrieved from Oxfords COVID-19 Government Response Tracker (Hale et. al, 2020).

As already shown in figure 1, there seems to be an overall increase in levels of fatigue over time, and this tendency is confirmed by the results in table 2. Specifically, pandemic fatigue increases with 11 percentage points when going from the first week of the data collection (September 13, 2020) to the last week of the data collection (July 20, 2021). In this way, we do find support for the argument made by the WHO that fatigue is a phenomenon that emerges gradually over time.

Turning to policy stringency, the results in table 2 also confirm the pattern observed in figure 1: People feel more demotivated to follow the restrictions when the restrictions in a given country are more stringent. We see that fatigue increases with 12.6 percentage points when comparing a situation with no COVID-19 restrictions to a situation where the society is under complete lockdown. In the appendix, we report sensitivity analyses where we split the stringency index into its nine subcomponents. These analyses show that the overall positive correlation is driven by stay-at-home requirements and movement restrictions (see table A1 in the appendix).

Third and finally, we find mixed evidence regarding the influence of the severity of the pandemic on fatigue. Here, citizens do not seem to either experience more or less pandemic fatigue when COVID-19 infections go up. On the other hand and along with insights from figure 1, they do experience less pandemic fatigue when COVID-19 deaths increases. In this way, the empirical evidence suggests, that people to a lesser extend tend to feel demotivated to follow the given restrictions when the pandemic is increasingly severe.

On this basis, we turn towards understanding whether pandemic fatigue predicts political discontent. Table 3 presents the results from regressing our six political discontent outcome measures on pandemic fatigue, pooling the data from all countries while controlling for demographics, dataround- and time-dummies. The coefficients reflect the change in each of the six attitudes when we compare individuals with the lowest and highest levels of pandemic fatigue.

Table 3. Individual-level correlates of pandemic fatigue

	Too extreme	Support for strong leader	Support protest	Democratic concerns	Conspiracy	Government distrust
Fatigue	0.394*** (0.025)	-0.037* (0.015)	0.267*** (0.023)	0.362*** (0.031)	0.293*** (0.029)	0.145** (0.035)
Male	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Female	-0.041** (0.012)	0.065*** (0.011)	-0.036*** (0.005)	-0.007 (0.012)	0.023 (0.014)	0.003 (0.015)
Age	-0.088* (0.035)	0.124 (0.062)	-0.065 (0.045)	0.015 (0.029)	-0.029 (0.055)	0.007 (0.027)
Lower education	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Higher education	-0.024 (0.010)	-0.038* (0.013)	-0.008 (0.009)	-0.013 (0.009)	-0.061*** (0.009)	-0.019* (0.008)
Constant	0.383*** (0.017)	0.683*** (0.021)	0.482*** (0.016)	0.478*** (0.014)	0.529*** (0.020)	1.547*** (0.014)
Observations	47630	47576	48714	47124	46222	48714
R^2	0.185	0.043	0.140	0.181	0.176	0.073

Note: $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$. Clustered robust standard errors on country level in parentheses. There is control for data round (time) and country-dummies, which are left out of the table. All variables are scaled from 0-1.

Focusing on the government's handling of COVID-19, table 3 shows, that respondents are more skeptical towards the government's COVID-19 policies when they experience pandemic fatigue. There is a strong positive correlation between pandemic fatigue and the opinion that the government's response to COVID-19 has been too extreme. When comparing respondents with the highest level of fatigue to respondents with the lowest level of fatigue, we observe a 39.4 percentage point increase in the opinion that the government's response has been too extreme. We find the same relation when focusing on support for anti-lockdown protests. Here, pandemic fatigue also predicts greater opposition - namely, a substantially higher level of support for protests. Specifically, the level of support for protests is 26.7 percentage points higher for respondents who feel the most fatigued compared to respondents with the lowest level of fatigue.

When it comes to concern about democratic rights, we also find that pandemic fatigue is a significant positive predictor of concern about democratic rights. We see a substantially large positive correlation between pandemic fatigue and democratic concerns. Respondents who experience the highest level of fatigue have a 36.2 percentage points higher level of democratic concerns compared to respondents with the lowest levels of pandemic fatigue. Likewise, we also find that pandemic fatigue is a significant predictor of lower trust in the government. Specifically, the level of distrust in the government is 14.5 percentage points higher for

respondents who feel the most fatigued compared to respondents with the lowest level of fatigue.

Furthermore, respondents do show greater tendencies to believe that the government is hiding information about the coronavirus and its cures (conspiracy beliefs) when experiencing pandemic fatigue. The level of belief in conspiracies about the government hiding information are 29.3 percentage points higher for respondents who feel the most fatigued compared to respondents with the lowest level of fatigue. In this way, there seems to be empirical evidence suggesting that a way to cope with the demotivation and distress caused by the pandemic can be to believe in alternative explanations to why the respondent is put in this restrictive situation. Finally, we also find that pandemic fatigue is a significant negative predictor of support for a strong leader. When comparing respondents with the highest level of fatigue to respondents with the lowest level of fatigue, we observe a 3.7 percentage point decrease in support for a strong leader.

Overall, the above findings suggest that pandemic fatigue is correlated with skepticism towards governments' handling of COVID-19, distrust in the government, democratic concerns, support for anti-lockdown protests, conspiracy-beliefs and support for a strong leader across the eight countries.

In Figure A1 in the appendix, we show that the country-level correlations between pandemic fatigue and the six political discontent outcome measures are highly consistent with the overall findings. Specifically, we find that in all eight countries fatigue is a significant positive predictor of both democratic concern, support for protests, conspiracy beliefs and thinking that the government's response was too extreme. Furthermore, fatigue is a significant positive predictor of distrust in the government in all countries, except from Sweden and the United States. Finally, we observe a negative association between fatigue and preferences for a strong leader in all countries, except from Italy where fatigue is a positive predictor of preferences for a strong leader.

An important limitation to the individual-level findings presented above is, however, that it may suffer from selection bias. One source of bias emerges from the possibility that there might be omitted variables in our estimations (i.e., alternative explanations). Studies have shown that there is a myriad of factors, among them both sociodemographic factors, emotions and perceptions, that predicts (or at least possibly predicts) pandemic fatigue (Lilleholt et. al, 2020). These can in turn, also have an influence on the six political attitudes and with traditional

observational data, it is difficult to measure and control for all these potentially confounding factors. Another equally important source of bias comes from reversed causality: individuals who for example, feel greater opposition towards the government's handling of COVID-19 might also be more likely to experience higher levels of pandemic fatigue as a consequence of this opposition. To limit these sources of bias and thereby increase the internal validity of the analysis we therefore use the panel component of our data. Table 4 reports the influence of pandemic fatigue on the six political discontent outcome measures using a two-way fixed effects estimator.

Table 4. Within individual correlates of pandemic fatigue

	Too extreme	Support for strong leader	Support protests	Democratic concerns	Conspiracy	Government distrust
Fatigue	0.116*** (0.015)	-0.014 (0.013)	0.091*** (0.014)	0.093*** (0.014)	0.031* (0.013)	0.038*** (0.009)
Constant	0.308*** (0.016)	0.794*** (0.013)	0.414*** (0.013)	0.401*** (0.016)	0.383*** (0.016)	1.428*** (0.008)
Observations	10569	10552	10792	10499	10170	10792
R^2	0.031	0.014	0.021	0.020	0.009	0.017

Note: $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$. Unstandardized regression coefficients from two-way fixed effects analyses. Standard errors are two-way clustered by individual and data round dummies. All variables are scaled from 0-1.

Results displayed in table 4 overall support the earlier correlational findings from table 3. Pandemic fatigue spurs greater skepticism towards governments' handling of COVID-19, higher levels of distrust in the government, leads to higher levels of democratic concerns, greater tendencies to believe in COVID-19 conspiracies, and higher levels of support for anti-lockdown protests. However, there is no effect of pandemic fatigue on support for a strong leader. Despite of a high degree of consistence with the individual-level estimators used earlier, it is worth noticing, that the influence of pandemic fatigue on all of the outcomes are substantially lower when using the two-way fixed effects estimator. However, we still observe substantial effects of pandemic fatigue on all political discontent outcomes, except for preferences for a strong leader, suggesting that feelings of pandemic fatigue fuels political discontent across the countries.

From figure A2 in the appendix, we see that the estimated effects of fatigue on evaluations of governments' handling of the COVID-19 pandemic, along with support for protests, democratic concerns, and conspiracy thinking are relatively homogeneous. On the other hand, the effects of pandemic fatigue on distrust in the government and support for a strong leader are more

heterogeneous across countries. Specifically, we observe a positive effect of pandemic fatigue on distrust in the government in most of the countries, except from in Sweden, the UK and the US.

Altogether, these individual-level longitudinal results overall mirror our correlational evidence presented earlier to a relatively high extent. Thus, pandemic fatigue is a key predictor of different aspects related to lack of support for the government's handling of the COVID-19 pandemic along with democratic concerns, support for anti-lockdown protests, and conspiracy beliefs. Moreover, pandemic fatigue can also be identified as an important determinant of distrust in the government in some countries. Altogether, these results emphasize that feelings of pandemic fatigue fuels political discontent across the eight countries.

Conclusion

In this report, we have instigated (1) how pandemic fatigue developed over the course of the pandemic, (2) whether pandemic fatigue is predicted by time, stringency and severity of the pandemic, 3) cross-national associations between pandemic fatigue and discontent; and 4) the causal effect of pandemic fatigue on political discontent using two-way individual-level fixed effects models using the panel data.

We find that that pandemic fatigue significantly increases with time and the severity of lockdowns, but also decreases with COVID-19-related deaths. Both the cross-sectional and panel data provides evidence that fatigue elicits a broad range of discontent including protest support, conspiratorial thinking, distrust in the government, democratic concerns, and opposition to pandemic policies.

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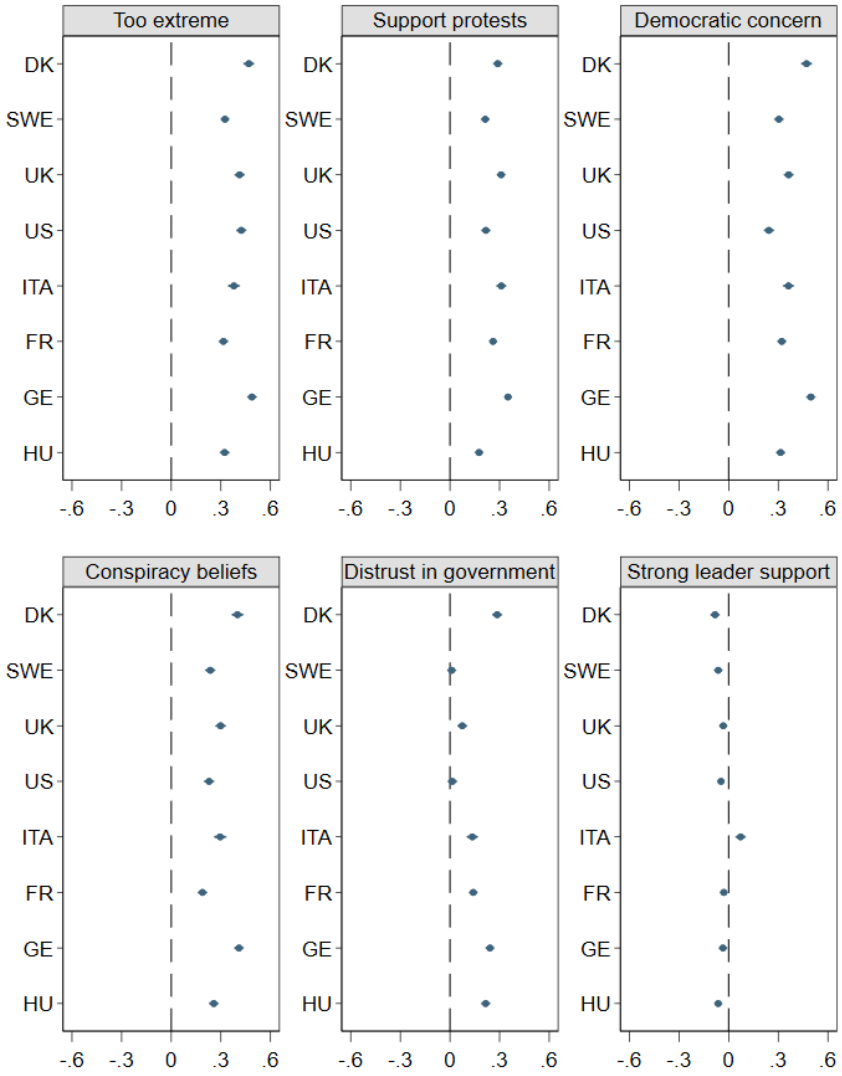
Appendix

Table A1. Analysis of stringency subcomponents

	Schools	Workplaces	Public events	Gatherings	Public transport	Stay at home	Movement	International travel	Campaings
Subcomponent	0.012 (0.009)	0.003 (0.016)	0.020 (0.013)	0.005 (0.010)	0.030 (0.015)	0.031* (0.009)	0.020* (0.008)	-0.010 (0.009)	0.000 (.)
Week	0.113*** (0.018)	0.115*** (0.019)	0.116*** (0.018)	0.114*** (0.018)	0.113*** (0.017)	0.109*** (0.015)	0.113*** (0.018)	0.116*** (0.020)	0.115*** (0.019)
New cases per. capita	0.022 (0.027)	0.025 (0.030)	0.021 (0.023)	0.023 (0.028)	0.018 (0.022)	0.011 (0.024)	0.018 (0.021)	0.029 (0.026)	0.028 (0.027)
New deaths per. capita	-0.095* (0.040)	-0.077 (0.041)	-0.095* (0.036)	-0.080 (0.036)	-0.092* (0.037)	-0.119** (0.031)	-0.086 (0.037)	-0.073 (0.041)	-0.075 (0.039)
Constant	0.344*** (0.012)	0.345*** (0.013)	0.334*** (0.015)	0.345*** (0.015)	0.332*** (0.010)	0.343*** (0.010)	0.339*** (0.013)	0.356*** (0.009)	0.348*** (0.012)
Observations	691	691	691	691	691	691	691	691	691
R^2	0.275	0.270	0.280	0.270	0.286	0.293	0.278	0.271	0.270

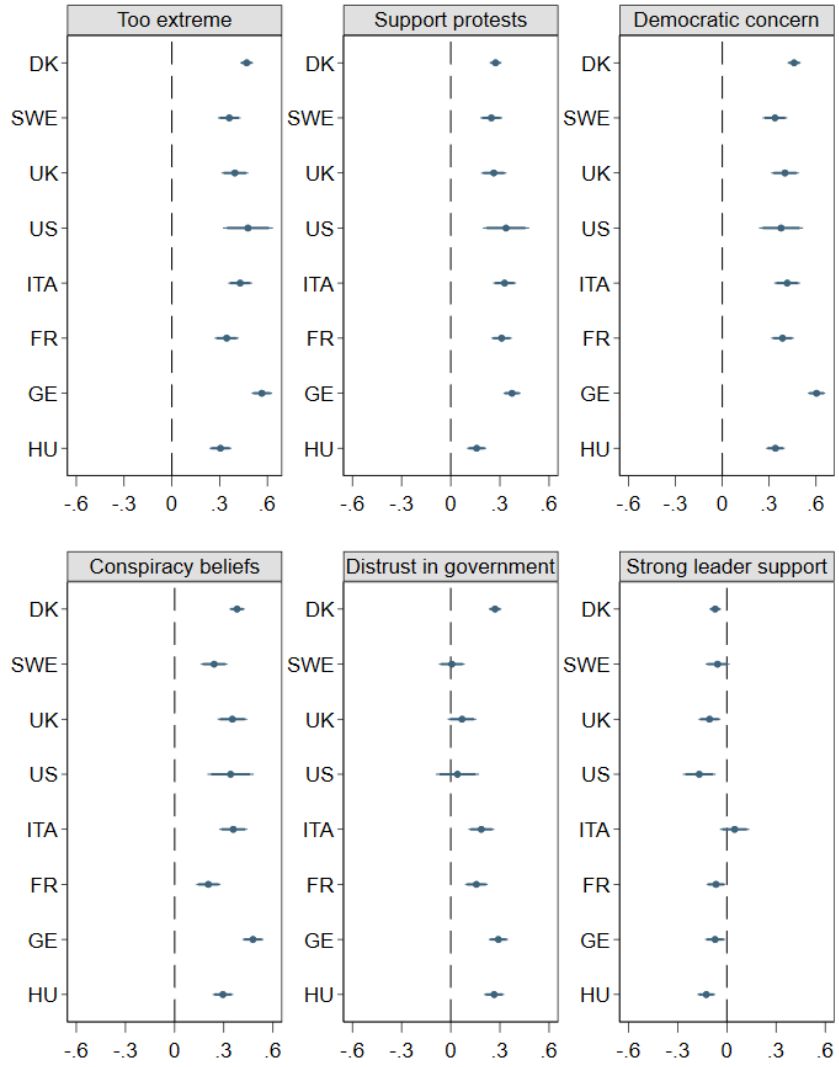
Note: $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$. The table shows estimates for each of the Stringency subcomponents, along with week, deaths and cases per. capita on pandemic fatigue. Standard errors in parentheses. Estimates are fixed on country. All variables are scaled from 0-1. The daily COVID-19 cases and deaths per. capita along with the stringency-measures are retrieved from Oxfords COVID-19 Government Response Tracker (Hale et. al, 2020). All subcomponents are dichotomous with 1 indicating lockdown in the specific area: School closing:0 =No measures/recommended closing, 1 = Required closing some/all levels. Workplace closing: 0 = No measures/recommended closing, 1 = Required closing some sectors/all but not essential. Public events: 0 = No measures/recommended cancelling, 1 = Required cancelling. Gatherings: 0 = No restrictions/restrictions down to 11 people, 1 = Restrictions on gatherings on 10 people or less. Public transport: 0 = No measures, 1 = Recommended/required closing public transport. Stay at home: 0 = No measures/recommended not leaving house, 1 = Required not leaving with exception/minimal exceptions. Movement: 0 = No measures, 1 = Recommend or restricted not to travel between regions. International travel: 0 = No restrictions/screening/quarantines, 1 = Ban arrivals from some or all regions. Campaigns: 0 = No Covid-19 public information campaign/public officials urging caution about Covid-19, 1 = Coordinated public information campaigning.

Figure A1. Individual level correlates of pandemic fatigue by country.



Note: Blue circles are the estimated correlations based country-level estimations. There is control for same demographics as in table 3 along with dummies for each dataround. Horizontal bars are the associated 95 percent confidence intervals.

Figure A2. Within individual correlates of pandemic fatigue by country.



Note: Blue circles are the estimated correlations based on country-level estimations. There is control for dummies for each dataround. Horizontal bars are the associated 95 percent confidence intervals. N varies between 294 (US) and 4.403 (DK).