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**Working Paper**

## COVID-19 lockdown and domestic violence: Evidence from internet-search behavior in 11 countries

Documento de Trabajo, No. 273

**Provided in Cooperation with:**

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*Suggested Citation:* Berniell, Inés; Facchini, Gabriel (2020) : COVID-19 lockdown and domestic violence: Evidence from internet-search behavior in 11 countries, Documento de Trabajo, No. 273, Universidad Nacional de La Plata, Centro de Estudios Distributivos, Laborales y Sociales (CEDLAS), La Plata

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# COVID-19 Lockdown and Domestic Violence: Evidence from Internet- Search Behavior in 11 Countries

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Documento de Trabajo Nro. 273

Diciembre, 2020

ISSN 1853-0168

[www.cedlas.econo.unlp.edu.ar](http://www.cedlas.econo.unlp.edu.ar)

Cita sugerida: Berniell, I. y G. Facchini (2020). COVID-19 Lockdown and Domestic Violence: Evidence from Internet-Search Behavior in 11 Countries. Documentos de Trabajo del CEDLAS N° 273, Diciembre, 2020, CEDLAS-Universidad Nacional de La Plata.

# COVID-19 Lockdown and Domestic Violence: Evidence from Internet-Search Behavior in 11 Countries\*

Inés Berniell<sup>†</sup> Gabriel Facchini<sup>‡</sup>

December, 2020

## Abstract

We study the impact of the COVID-19 pandemic on domestic violence in 11 countries with different ex-ante incidence of domestic violence (DV) and lockdown intensity. We use a novel measure of DV incidents that allows us to make cross-country comparisons: a Google search intensity index of DV-related topics. Our difference-in-difference estimates show an increase in DV search intensity after lockdown (31%), with larger effects as more people stayed at home (measured with Google Mobility Data). The peak of the increase in DV appears, on average, 7 weeks after the introduction of the lockdown. While we observe that the positive impacts on DV is a widespread phenomenon, the effect in developed countries is more than twice as strong as in Latin American countries. We show that the difference in impact correlates with the intensity of compliance with stay-at-home measures in the two groups.

JEL Classification: J12, J16, J18, I18

Keywords: COVID-19, lockdown, domestic violence, google search

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\*We are grateful to Sonia Bhalotra and Renata Cuk for helpful discussion. We thank Alejo Isacch and Julián Pedrazzi for excellent research assistance. Facchini gratefully acknowledges financial support from the General Secretariat for Research-Government of Catalonia (SGR2017-1301) and the Spanish Ministry of Education (PID2019-104619RB-C43). Views expressed here do not necessarily correspond to those of our affiliations.

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# 1 Introduction

Violence against women is a serious health concern all around the world. About 1 in 3 (30%) of women worldwide have experienced some form of physical and/or sexual violence by their intimate partner in their lifetime (WHO, 2013). The situation may have worsened during the COVID-19 pandemic, due to the increase in unemployment and because the stay-at-home orders forced victims to stuck at home with abusers and decrease their possibility of escaping from a violent situation (Aizer, 2010; Anderberg et al., 2016; Bhalotra et al., 2020b).

However, there are important data challenges for the analysis of the patterns of domestic violence (DV hereafter) around the world. First, there is a lack of comparable data to make cross-country comparisons (Jayachandran, 2015). Second, because of its private nature, most of the cases of domestic violence remain hidden and are not usually reported, neither in police reports nor in surveys (Aizer, 2010).<sup>1</sup> Finally, when data exists, there is a significant delay between the occurrence of the offences and the availability of the data for researchers, making impossible any analysis of the effect of the COVID-19 pandemic on DV.

In this paper we analyze the impact of the COVID-19 pandemic on domestic violence in several countries, using a novel indicator of its incidence based on Google searches of DV related topics. This indicator overcomes the issues listed before, as it comes from an almost real time high-frequency data (daily) available for many countries. Furthermore, Google searchers “express interests not easily elicited by other means” (Stephens-Davidowitz, 2014), which can help to avoid the under-reporting issues explained before. Our sample includes the United States and —according to their GDP— the five largest Latin American countries (Argentina, Brazil, Chile, Colombia and Mexico) and the 5 largest European countries (France, Germany, Italy, Spain and United Kingdom). All these countries were significantly affected by the COVID-19 in terms of deaths and economic impacts, and faced different degrees of lockdowns.<sup>2</sup>

Figure 1 shows the evolution of our measure of DV-incidence in 2020 (bold line) and previous four years (grey lines). We observe a large increase in DV search intensity after the lockdown that coincides with an increase in the time people stay-at-home —measured with Google Mobility Data (blue data). Our event-study calculations based on this data show that the positive effect of the lockdowns on our measure of domestic violence remains statistically significant for 10 weeks after lockdown, with a peak on week 7. This result is further reflected in our difference-in-difference regressions which show an increase in search intensity of 31% relative to the week prior to lockdown. When we analyze how residential mobility impacts our index of DV we find a 21% increase in search intensity

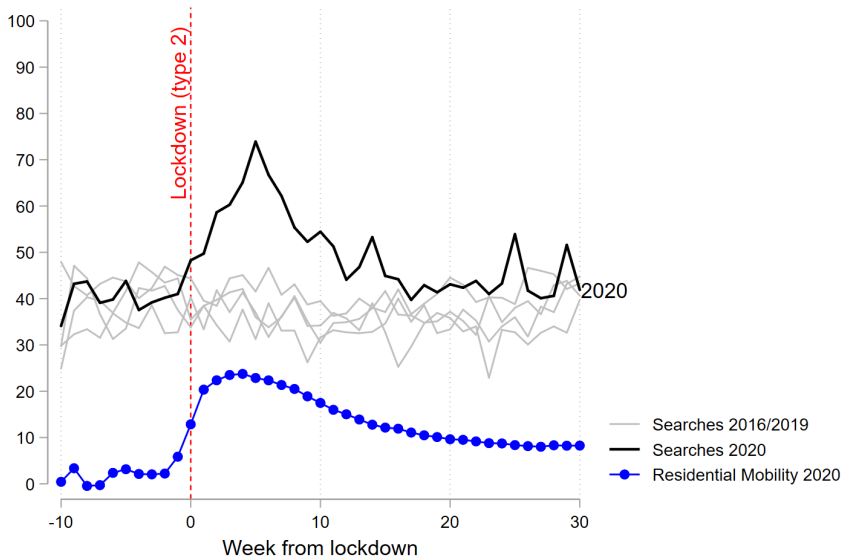
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<sup>1</sup>Recent evidence suggest that the problem of under-reporting is exacerbated during the pandemic as the lockdown limits the victims ability to call or go to the police (Miller et al., 2020; Silverio-Murillo et al., 2020).

<sup>2</sup>Furthermore, these countries are also different in their ex-ante incidence of DV, which can be in part explained by differences in gender norms (González and Rodríguez-Planas, 2020).

for every one standard deviation increase in residential mobility.

Figure 1: Trends in online searches and residential mobility  
Pool of 11 countries. 2020 vs previous years



Notes: The figure above plots the average number of weekly search intensity of domestic violence related topics across 11 countries by week since lockdown in 2020 (bold black line) and previous four years (grey lines), and the residential mobility index in 2020 (blue line). The blue curve reports Google residential mobility data. The vertical red dashed line corresponds to the week of the introduction of lockdown type 2 —as defined in Hale et al. (2020)— for each country.

Although we observe an increase in DV in every country, the effect of the lockdown in developed countries is more than twice as strong as in Latin American countries. This difference seems to be related to a differential in compliance to the stay-at-home measures. While as a response to the lockdowns residential mobility goes up by half a standard deviation in our developed countries, it only increases by one-fifth of a standard deviation in Latin America, on average. Although there are differences in the intensity of the actual lockdowns the effect of a one standard deviation change in mobility on the DV indicator is similar between the two groups of countries, and, if anything, slightly larger in Latin America.

In the final section of the paper we provide evidence that our search-intensity index is a good measure to monitor the evolution of DV incidence. Using data for Spain, we observe that search intensity related to DV topic and calls to the DV helpline present a similar behavior both before and after lockdown.

This paper is related to a large emerging literature analyzing the effects of the COVID-19 pandemic on domestic violence. The majority of these papers focus in one particular country or city and use administrative data from calls-for-service or crime/police reports.<sup>3</sup>

<sup>3</sup>There are few papers using survey data. Some examples are Arenas Arroyo et al. (2020), that analyze

The literature shows an increase in the rate of domestic violence calls for service during the lockdowns for a diverse set of countries.<sup>4</sup> However, some of the studies that find an increase in the number of calls to DV-services also show a decrease in DV crime reports rates during the pandemic (Miller et al., 2020; Bullinger et al., 2020; Silverio-Murillo et al., 2020).<sup>5</sup> We contribute to this literature with a novel measure of DV incidence that complements the existing one by allowing to monitor cross-country DV-incidence in real-time and with less issues of under-reporting.<sup>6</sup>

## 2 Data

We analyze data for eleven countries: United States and —according to their GDP— the five largest Latin American countries (Argentina, Brazil, Chile, Colombia and Mexico) and the five largest European countries (France, Germany, Italy, Spain and United Kingdom). All these countries were significantly affected by the COVID-19 in terms of deaths and economic impacts, and faced different degrees of lockdown. Important also for the kind of data we exploit, these are countries with high internet penetration (Internet-World-Stats, 2019).

Our main outcome variable is a Google trends index of search intensity for terms related to domestic violence. The data comes from Google Trends, that is a publicly available data with a weekly frequency, representing the search behavior of Internet users. The Google trends’ domestic violence search intensity index is calculated, for each country, as the fraction all Google searches devoted to the topic “Domestic Violence” or terms related to the domestic violence hotline in each country (e.g. "domestic violence hotline", "linea mujer", etc.). Figure 2 shows for each of the eleven countries the evolution of the average search intensity of domestic violence related topics by month since lockdown in 2020 (bold black line) and previous four years (grey lines).

The dates of the countries’ introduction of stay-at-home orders comes from Hale et al. (2020). For each country this date indicates the moment of the first introduction of a lockdown type 2. This type of lockdown requires not leaving house with exceptions for daily exercise, grocery shopping, and ‘essential’ trips. Table 4 of the Appendix lists the date of the lockdown for each country.

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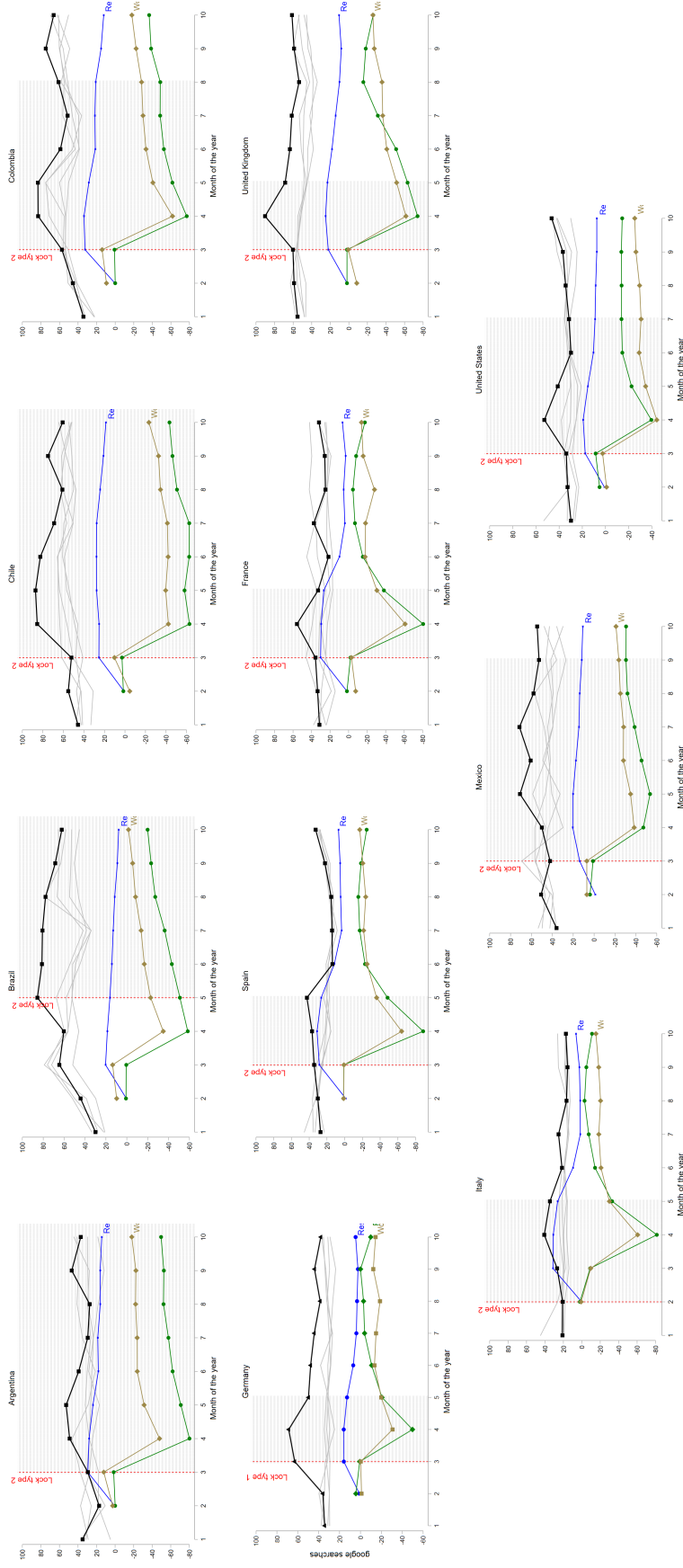
data from a Facebook survey in Spain, and Perez-Vincent et al. (2020) that conducted a victimization survey in Argentina right after the lockdown.

<sup>4</sup>Leslie and Wilson (2020) and Sanga and McCrary (2020) for US cities, Agüero (2020) for Peru, Perez-Vincent et al. (2020) for Argentina, Beigelman and Castelló (2020) for Spain, Ravindran et al. (2020) for India, Miller et al. (2020) for Los Angeles, Bullinger et al. (2020) for Chicago, Silverio-Murillo et al. (2020) for Mexico City and Ivandic et al. (2020) for Greater London.

<sup>5</sup>In on-going work, Bhalotra et al. (2020a) exploit variation in municipality lockdown dates in Chile and find increases in both calls to police helpline and women’s shelter use, alongside a decrease in crime reports to the police.

<sup>6</sup>In a concurrent paper, Anderberg et al. (2020) propose an algorithm for measuring variation in DV incidence based on internet search activity and use it to estimate the effects of the lockdown in two cities: London and Los Angeles.

Figure 2: By country: Trends in 2020 vs previous years



Notes: The figures above plot the average number of weekly search intensity of domestic violence related topics for 11 countries by month of year in 2020 (bold black line) and previous four years (grey lines). The blue curve reports Google residential mobility data, the green line reports workplace mobility data and the brown line reports retail mobility. The vertical red dashed line corresponds to the month of the introduction of lockdown type 2—as defined in Hale et al. (2020)—for each country.

Finally, we use Google mobility data, that provides information about how the length of stay at different places change compared to a baseline. The baseline is the median value, for the corresponding day of the week, during the five-week period 3 Jan – 6 Feb 2020. The data also have a weekly frequency. In this paper we mainly focus on the mobility trend data for places of residence, which gives us a measure of the intensity of the actual lockdown in each country. Figure 2 displays, also for the 11 countries, the Google mobility data for residential places (blue lines), workplace mobility (green line) and retail mobility (brown line).

Putting all these data together, Figure 2 suggests a correlation between the introduction of the lockdowns, a subsequent drop in mobility, and an increase in the search intensity of DV-related topics some weeks after. This correlation is present everywhere and does not seem to be explained by seasonality, as such increase in DV searches was not observed the years before during the same calendar months (compare bold black lines and grey lines). In the next section we run an event-study and a difference-in-difference model with this data in order to estimate the magnitude of the impact of the lockdown on our index of DV incidence.

### 3 Lockdown Impacts on Domestic Violence: Event Study Approach

We estimate the impact of COVID-19 related lockdowns on search intensity of domestic violence related topics using both a week-by-week event study specification and a two-period before-after specification. The event study specification is

$$\text{Log}(\text{SearchIntensity}_{ctwy}) = \sum_{\tau=-10}^{30} \beta_{\tau} \mathbb{1}(\text{Week } \tau)_t \times \text{Year2020}_y + \lambda_{cy} + \phi_{cw} + \epsilon_{ctwy}, \quad (1)$$

where the outcome is the google trends' search intensity index in country  $c$  in week  $t$ , week-of-year  $w$ , and year  $y$ . The indicator function  $\mathbb{1}(\text{Week } \tau)_t$  takes a value of one if week  $t$  falls  $\tau$  weeks before or after the week prior to lockdown -our reference week.<sup>7</sup> The sample is restricted to weeks -10 through 30 from lockdown week.  $\text{Year2020}_y$  is an indicator for weeks in 2020. The  $\beta$  coefficients track weekly changes in the search intensity during 2020 relative to the previous five years. We include country-by-year ( $\lambda_{cy}$ ), and country-by-week ( $\phi_{cw}$ ) fixed effects to allow for country-specific trends in search intensity across years and season. This means that our estimates are obtained using within-country variation of weekly searches in 2020 relative to the previous five years. Because we use data for 11 countries, we report wild bootstrapped confidence intervals and p-values to account for clustering at the country-level.<sup>8</sup>

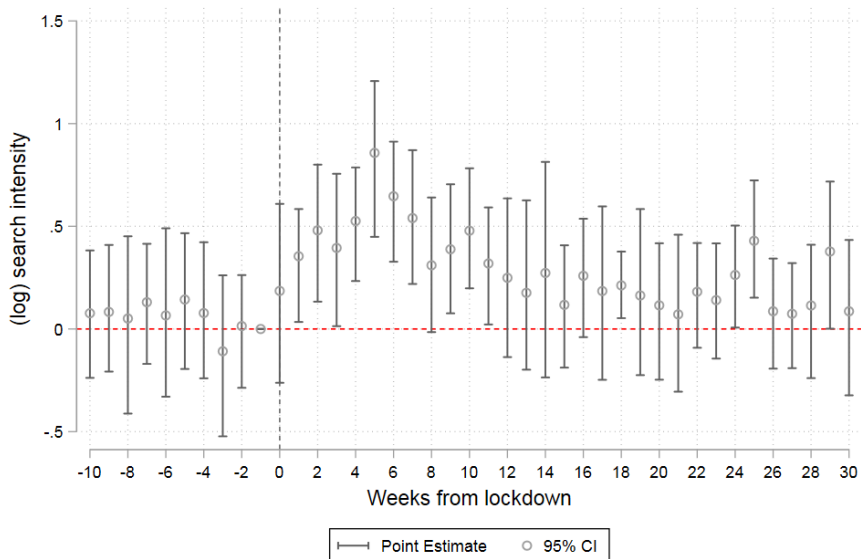
<sup>7</sup>All dates for countries' stay-at-home orders are presented in Table 4 of the Appendix.

<sup>8</sup>All event-study results were conducted using the user-written `eventdd` command (Clarke and Schythe, 2020).



Figure 3 presents the event study coefficients using as outcome the log of search intensity. There is a clear break in searches starting the week of the lockdown. There is a raise in search intensity that peaks at about seven weeks into the lockdown. The effect remains statistically different from zero for 10 weeks after lockdown (keep in mind the average lockdown length is 121 days or 17 weeks). The point estimates during the first 10 weeks of lockdown indicate an increase in search intensity ranging from 30% to 85% relative to the week prior to lockdown. Results using levels instead of logs are virtually the same (see Figure 7 in Appendix).

Figure 3: Event study - All countries



Notes: The figure above shows event study coefficients from equation 1 where the outcome is the (log of) search intensity at the country-by-week level. Country-by-year and country-by-month fixed effects are included. The vertical lines for each coefficient show 95% confidence intervals, cluster corrected at the country level using the wild bootstrap. The omitted week is the week before the lockdown took place in each country. We use the type 2 lockdown as defined in Hale et al. (2020). The sample contains search data from November 2015 through October 2020.

The event study results provide evidence that trends in 2020 were similar to those of the previous five years in the pre-lockdown weeks. There was a marked divergence of trends coinciding with the time each lockdown was imposed and mobility patterns changed towards more time at home.

## 4 Difference-in-Difference Model

### 4.1 Lockdown - Extensive Margin

To quantify average effects, we estimate a difference-in-differences model comparing search intensity in 2020 (treated) and the previous five years (controls), between periods with

and without stay-at-home orders (lockdown). We estimate the following equation:

$$\text{Log}(\text{SearchIntensity}_{ctwy}) = \beta \text{Lockdown}_t + \lambda_{cy} + \phi_{cw} + \epsilon_{ctwy}, \quad (2)$$

where  $\text{Lockdown}_t$  is an indicator that equals one if the week  $t$  is in year 2020 and during the lockdown period. The coefficient of interest is  $\beta$ , which can be interpreted as the overall lockdown increase in search intensity compared to those same weeks in prior years. We include the same set of rich fixed effects as in equation 1. Because we already observed in the event study analysis that the effect is stronger during the first months after lockdown starts, we include one specification in which we only use data up to twelve weeks from the moment stay-at-home orders are introduced.

Table 1: Changes in (log of) search intensity by lockdown

	(1)	(2)	(3)	(4)
Lockdown	0.366	0.259	0.307	0.410
	(0.000)	(0.000)	(0.000)	(0.000)
	[0.232, 0.486]	[0.131, 0.376]	[0.204, 0.420]	[0.310, 0.515]
$N$	3587	3587	3587	3326
r2	0.435	0.503	0.698	0.700
Mean dep.	37.90	37.90	37.90	37.47
Country FE	Yes	Yes	Yes	Yes
Week+Year FE		Yes	Yes	Yes
Country x Year FE			Yes	Yes
Country x Week FE			Yes	Yes
First 12 weeks				Yes

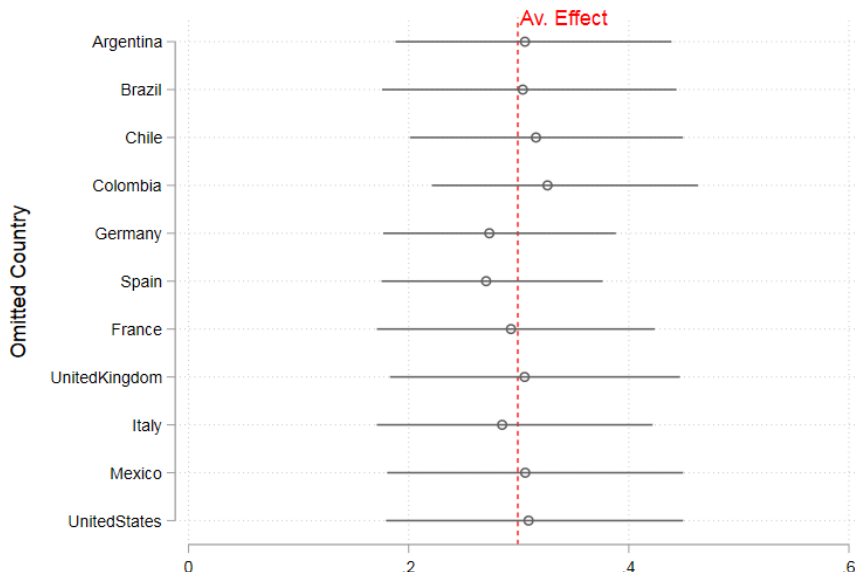
Notes: Observation at the country-by-week level for 11 countries, from November 2015 to October 2020. The outcome is the log of google search intensity related to the ‘domestic violence’ topic. Each column corresponds to a different specification, until column (5) which only includes observations up to twelve weeks from the introduction of stay-at-home orders. 95% confidence intervals from wild bootstrapped standard errors corrected for clustering at the country-level are reported in brackets, with the associated p-value in parentheses.

Table 1 presents difference-in-differences results. In column (1) we include the simple correlation between the log of search intensity and our indicator for the lockdown period. Columns (2) to (4) add sequentially more controls. Finally in column (5) we restrict the sample to use only the first six months of the calendar year. The partial correlation estimate suggests there was, on average, a 47% raise in search intensity related to domestic violence in each country every week during lockdown relative to other periods. Although the effect is substantially reduced once we add fixed effects for country, week of the year and year, it remains statistically significant at the 1% level. Our prefer estimate uses data only for the first semester of the year (column 5). In this specification, search intensity went up by an average 38% during lockdown. Results using levels instead of logs are virtually the same (see Table 5 in Appendix).

As a robustness check, we re-estimate equation 2 excluding one country at a time, to make sure no one country is driving the results. Figure 4 shows that these estimates are

very stable across regressions.

Figure 4: Effect of lockdown - Leave out one country at a time



Notes: The figure above shows coefficient estimates for *Lockdown* from the difference-in-differences model in equation 2 where the outcome is the (log of) search intensity at the country-by-week level. Country-by-year and country-by-week fixed effects are included. Each regression excludes one country. Country-by-year and country-by-week of year fixed effects are included. Wild bootstrapped standard errors are corrected for clustering at the country-level.

## 4.2 Mobility - Intensive Margin

We repeat our analysis using as treatment the google’s residential mobility measure instead of lockdown. We will test two models, one with the continuous measure and a second one using a dummy treatment equal to one for weeks when the residential mobility is above a one standard deviation. Unlike in equation 2, here the only controls are country and week fixed effects, since the mobility data is only available since mid-February 2020.

Table 2 presents difference-in-differences results using the continuous and discrete mobility measures in Panels A and B, respectively. Each column corresponds to a different specification, and the final column uses only observations up to June 2020. We observe a close to 21% increase in search intensity for every one standard deviation increase in residential mobility. Given that during lockdown residential mobility increased by more than two standard deviations, this implies a raise in search intensity of more than 42%, very close to our lockdown estimates from before. A similar pattern is observed when we use an indicator variable for mobility above one standard deviation instead of a continuous one -although coefficient estimates are less stable.

As before, we re-run our estimates excluding one country at a time. Figure 5 shows that these estimates are very stable across regressions.

Table 2: Changes in (log of) search intensity by mobility

	(1)	(2)	(3)	(4)
<i>Panel (A)</i>				
Residential Mob.	0.244 (0.000) [0.172, 0.299]	0.183 (0.000) [0.137, 0.223]	0.207 (0.002) [0.137, 0.299]	0.158 (0.034) [0.0159, 0.302]
<i>Panel (B)</i>				
Mob > 1 sd	0.507 (0.000) [0.332, 0.676]	0.314 (0.000) [0.224, 0.411]	0.241 (0.000) [0.132, 0.347]	0.310 (0.020) [0.110, 0.617]
Observations	545	545	545	284
r2	0.239	0.615	0.682	0.689
Mean dep.	46.07	46.07	46.07	48.60
Country FE		Yes	Yes	Yes
Week FE			Yes	Yes
First 12 weeks				Yes

Notes: Observation at the country-by-week level for 11 countries, from February to October 2020. The outcome is the log of google search intensity related to the ‘domestic violence’ topic. Each column corresponds to a different specification, until column (4) which only includes observations in the first six months of the calendar year. 95% confidence intervals from wild bootstrapped standard errors corrected for clustering at the country-level are reported in brackets, with the associated p-value in parentheses.

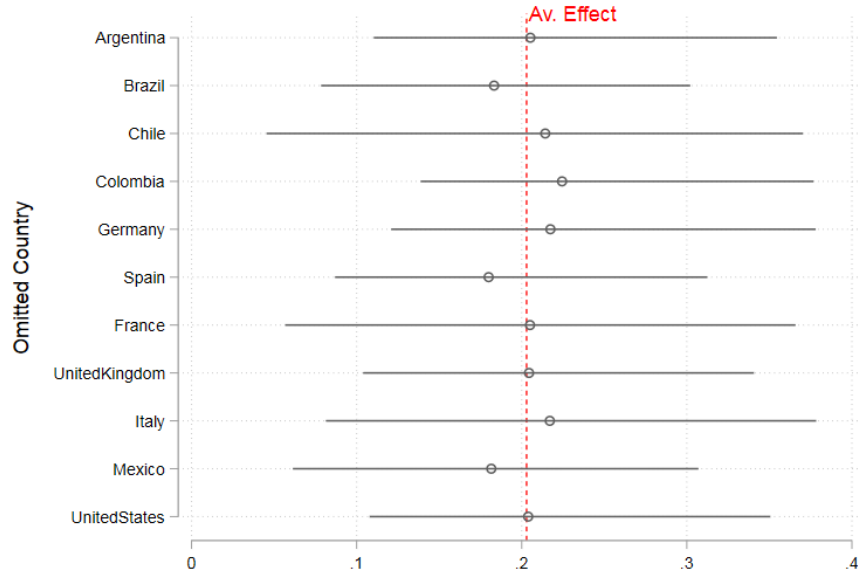
### 4.3 Heterogeneity by Lockdown Intensity

As we see in Figure 2, there is heterogeneity in the effect of lockdown on mobility across our sample of countries. We repeat the analysis separating the sample in two groups: developed (Europe and the US) and developing countries (Latin America). These two groups are substantially different in the level of income of their inhabitants and the government capacity to alleviate income losses due to lockdown measures. Table 3 presents the results. Columns one and four show the effect of lockdown on search intensity for Europe and America respectively. The effect of the lockdown in richer countries is more than twice as strong as in the Latin American countries.

This could be the result of a higher response of the violence perpetrators to the stay-at-home measures in developed countries, a differential in compliance to these measures across groups, or a combination of both.<sup>9</sup> In this second scenario, we would observe a lower response on mobility to lockdown. This is what columns two and five show. While residential mobility goes up by half a standard deviation in Europe, it only increases by one-fifth of a standard deviation in America, on average. Finally, columns three and six show that the effect of a one standard deviation change in mobility is similar between the

<sup>9</sup>Using data for 241 regions of 9 countries from Latin America and Africa, Bargain and Aminjonov (2020) find that lower compliance with lockdown policies among the poorest is mostly driven by their need to continue income-related activities during the lockdown period.

Figure 5: Effect of mobility - Leave out one country at a time



Notes: The figure above shows coefficient estimates for *Residential Mobility* from the difference-in-differences model in equation 2 where the outcome is the (log of) search intensity at the country-by-week level. Country and week-of-the-year fixed effects are included. Each regression excludes one country. Country-by-year and country-by-week of year fixed effects are included. Wild bootstrapped standard errors are corrected for clustering at the country-level.

two groups of countries, and only statistically significant for the Latin American countries.

## 5 Online-search Intensity vs Helpline Calls

Finally, we provide evidence that during lockdown both search intensity related to DV topic and calls to a DV helpline observed an expected increase with respect to previous years. We use data for Spain, for which we have monthly data on number of calls to the DV helpline (016) from 2015 up to the first semester of 2020.

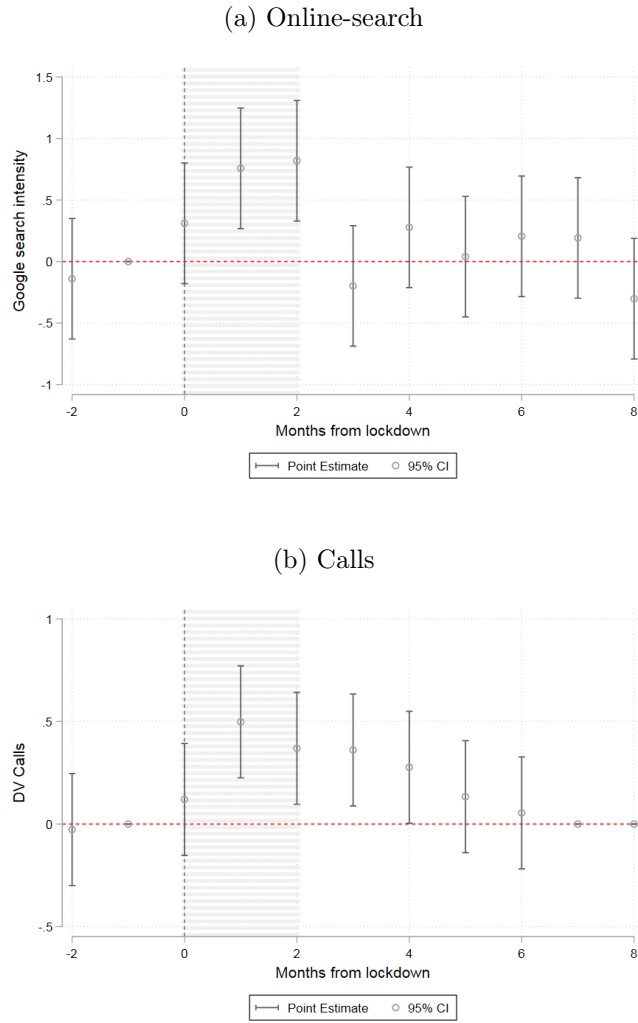
The analysis follows the spirit of equation 1, but at the monthly level and using only one country. Controls now include month and year fixed effects. Figure 6 presents the event study coefficients using as outcome the log of search intensity and the log of DV calls in panels (a) and (b), respectively.

Table 3: Changes in (log of) search intensity by continent

	Europe+US			Latin America		
	(1) Search Intensity	(2) Resid. Mobility	(3) Search Intensity	(4) Search Intensity	(5) Resid. Mobility	(6) Search Intensity
Lockdown	0.411 (0.000)	0.359 (0.094)		0.191 (0.000)	0.194 (0.563)	
Res. Mob.	[0.221, 0.637]	[-0.0656, 0.637]	0.126 (0.125)	[0.0955, 0.262]	[-0.359, 0.625]	0.085 (0.000)
<i>N</i>	1515	234	234	1231	195	194
Mean dep.	31.88	38.04	38.04	48.42	60.18	60.49
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Week+Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country x Year FE	Yes			Yes		
Country x Week FE	Yes		[-0.0509, 0.261]	Yes		[0.0110, 0.454]

Notes: Notes: Observation at the country-by-week level for 11 countries, from November 2015 to October 2020. The outcome is the log of google search intensity related to the 'domestic violence' topic. The first two columns use European countries only, while the last two use American countries only. 95% confidence intervals from wild bootstrapped standard errors corrected for clustering at the country-level are reported in brackets, with the associated p-value in parentheses.

Figure 6: Event study analysis of DV online-search and calls



The figures above show event study coefficients from equation 1 for the case of Spain. In 6a the outcome is the (log of) search intensity, while in 6b the outcome is the (log of) DV calls, both at the monthly level. Year and month fixed effects are included. The vertical lines for each coefficient show 95% confidence intervals. The lockdown in Spain started in March, hence the omitted month is February, and is denoted by the shaded area. We use the type 2 lockdown as defined in Hale et al. (2020). The sample contains data from November 2015 through October 2020.

The two figures exhibit a remarkably similar pattern, with no difference with previous years in January, and a bell-shaped effect starting March and ending around June. However, although the peak for the effect of DV calls is 50%, it reaches about 75% for google searches.<sup>10</sup> Another difference is that the effect on search intensity drops and is not statistically significant starting June, while it remains significant for DV calls. The higher peak in searches can be explained by a selection of women who, after searching,

<sup>10</sup>The results for DV calls are very close to those found by Beigelman and Castelló (2020), who look at the effect of lockdown and mobility on intimate partner violence across the Spanish territory.

actually call the number. Meanwhile, the shorter duration of the effect on search intensity may be due to the innate nature of the search, which is most likely related to look for information about how to make a complain. Once the woman obtains this information, she does not need to google it again in future cases. However, DV call would still show if she calls again.

Although this analysis uses data for only one country in our sample, the strikingly similar behavior and timing of the two series reassures us that search intensity related to DV topics are a good tracker of DV cases during the lockdown.

## 6 Conclusions

Domestic violence is a global public health problem with large social and economic costs. DV incidence can be further exacerbated during times of crisis, high unemployment and social-stress (like the COVID-19 pandemic). However, most countries lack the necessary information to implement rapid public polices to contain the situation. Timely administrative data from police reports and DV service calls, when available, suffer from substantial under-reporting.<sup>11</sup> On the other hand, survey data collecting information on DV incidence are rarely speedily available and are costly. This paper proposes the use of already publicly available data on google searches to track the incidence of DV. This data presents important advantages: it is free, timely, available at daily frequency, and allows for comparisons across different geographical areas.

Using a panel of eleven countries and five years of google search data on DV related topics, we find an average increase in searches of about 31% after stay-at-home orders are put in place. Furthermore, using data on DV service calls for Spain, we find a similar although slightly smaller effect of lockdown. Finally, we show evidence that the effect is stronger in countries with a stricter lockdown. We remain agnostic as to whether these results driven by economic activity, time of exposure to potential perpetrator, or other factors.

This online search index has, at least, one important limitation: it requires that victims have access to internet. This means that our findings, if anything, are a lower bound, since previous work has shown that DV is more prevalent among poor and low-educated women (Aizer, 2010), and we expect them to also be more affected by the lockdown. Still, online searches can be an extra source of information for governments and complement existing data -specially in places where other sources of information are not available.

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<sup>11</sup>Furthermore, under-reporting is likely to increase in times when victims are trapped at home with the potential perpetrators.



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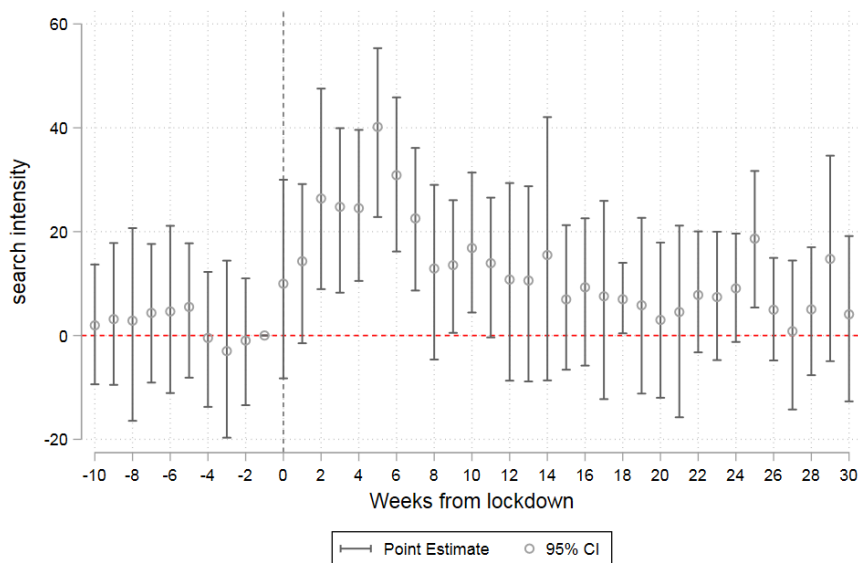
## A Appendix

Table 4: Dates of lockdown for countries in our sample

Country	Lockdown		
	Start	End	Length (in days)
Argentina	19/03/2020		242
Brazil	05/05/2020		195
Chile	25/03/2020		236
Colombia	25/03/2020	31/08/2020	159
France	17/03/2020	10/05/2020	54
Germany	21/03/2020	05/05/2020	45
Italy	23/02/2020	03/05/2020	70
Mexico	30/03/2020	10/09/2020	164
Spain	14/03/2020	26/05/2020	73
United Kingdom	22/03/2020	12/05/2020	51
United States	15/03/2020	19/07/2020	126

Notes: Country dates for mandated Stay-at-Home orders obtained from Hale et al. (2020), using lockdown type 2 definition.

Figure 7: Event study - All countries



The figure above shows event study coefficients from equation 1 where the outcome is the search intensity at the country-by-week level. Country-by-year and country-by-month fixed effects are included. The vertical lines for each coefficient show 95% confidence intervals, cluster corrected at the country level using the wild bootstrap. The omitted week is the week before the lockdown took place in each country. We use the type 2 lockdown as defined in Hale et al. (2020). The sample contains search data from November 2015 through October 2020.

Table 5: Changes in search intensity by lockdown

	(1)	(2)	(3)	(4)
Lockdown	18.291 (0.000) [13.22, 23.45]	14.367 (0.000) [9.686, 19.10]	14.745 (0.000) [10.37, 19.65]	20.951 (0.000) [16.23, 25.62]
<i>N</i>	3626	3626	3626	3365
r <sup>2</sup>	0.435	0.495	0.683	0.689
Mean dep.	37.49	37.49	37.49	37.04
Country FE	Yes	Yes	Yes	Yes
Week+Year FE		Yes	Yes	Yes
Country x Year FE			Yes	Yes
Country x Week FE			Yes	Yes
First 12 weeks				Yes

Notes: Observation at the country-by-week level for 11 countries, from November 2015 to October 2020. The outcome is the log of google search intensity related to the ‘domestic violence’ topic. Each column corresponds to a different specification, until column (5) which only includes observations in the first six months of the calendar year. 95% confidence intervals from wild bootstrapped standard errors corrected for clustering at the country-level are reported in brackets, with the associated p-value in parentheses.