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COVID-19 Lockdowns and Domestic Violence

Evidence from Two Studies in Argentina

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Abstract

This publication presents two independent and complementary studies on the impact of the mandatory COVID-19 lockdowns on domestic violence in Argentina. The first study examines the evolution of calls to Línea 137, the domestic violence hotline in the City of Buenos Aires, and finds a significant increase (32 percent) in calls following the introduction of mobility restrictions. The study also finds a large substitution in reporting channels: calls to the hotline received from the police fell sharply (-62 percent) while direct calls from the victims increased by 127 percent. The second study shows evidence from a victimization survey conducted right after the lockdown came into effect. Comparing women whose partners were exempt from complying with the stay-at-home order with women whose partners were not, the study finds a positive link between lockdown restrictions and intimate partner violence. The combination of these two approaches and analyses delivers consistent and compelling evidence on the impact of the lockdown on domestic violence incidents. The studies highlight the need to complement the mobility restrictions imposed to combat the COVID-19 pandemic with specific services to respond to the domestic violence that the lockdown generates.

JEL: J12; J16; H12

Keywords: citizen security and social prevention, domestic violence, lockdown, COVID-19, violence reporting, Argentina

Foreword

The COVID-19 pandemic has caused the deaths of hundreds of thousands of people and led to enormous changes in the daily lives of millions around the world. Fear of contagion and the declaration of mandatory lockdowns in most countries have drastically reduced individuals' mobility and triggered a global economic crisis.

Since the beginning of the pandemic, national authorities, and international and civil society organizations have warned about its possible impact on the incidence of domestic violence. Warnings were based on the recognition that the pandemic created circumstances associated with domestic violence: an increase in people's discomfort and stress (Card and Dahl, 2011); possible changes in the gender income gap (Aizer, 2011; Anderberg et al., 2016; Pronyk et al., 2006); an increase in the amount of time people spend at home; and a wide spectrum of negative psychological effects (Brooks et al., 2020).

Unfortunately, these fears seem to have materialized. Several media outlets have reported increases in domestic violence during lockdowns in different parts of the world.[1] However, given the complexity of domestic violence and the circumstances of the pandemic, systematic and rigorous evidence of the impact is very limited, particularly for Latin America and the Caribbean (LAC).

This publication addresses this knowledge gap by presenting two independent and complementary studies on the impact of lockdown measures on domestic violence in Argentina. The studies are part of a broader research project of the Inter-American Development Bank (IDB) that seeks to generate evidence about domestic violence in the context of the COVID-19 pandemic to inform better citizen security and justice policy decisions.

To our knowledge, these are the first studies to identify the effect of mandatory COVID-19 lockdowns on domestic violence reports in LAC. The Argentinean context provides an exceptional setting to this end given that the mandatory lockdown was adopted at a relatively early stage in the spread of the virus in the country, before the pandemic had generated any other major public health impact (which could be confounded with the effect of the lockdown).

The first study (Perez-Vincent and Carreras, 2020) examines the evolution of calls to the domestic violence hotline (Línea 137) in the City of Buenos Aires. The analysis finds

[1] For examples see https://www.cnn.com/2020/04/07/us/nyc-domestic-violence-website-surging/index.html and https://www.nytimes.com/2020/04/06/world/coronavirus-domestic-violence.html.

a significant increase (32 percent) in calls following the introduction of mobility restrictions in Argentina. This increase is driven by a spike in reports of psychological violence, which jumped by 76 percent relative to the pre-lockdown period. The study also finds a large substitution between reporting mechanisms: calls to the hotline received from police stations fell sharply (62 percent) while direct calls from the victims increased by 127 percent.

Calls to hotlines provide accurate information about demand for government services, but only reveal part of the dynamics of domestic violence. The changes observed in the number of reports could be associated with changes in violence, but also with changes in reporting rates. Therefore, it is important to complement this analysis with that of other sources of information.

The second study in this paper (Gibbons, Murphy, and Rossi, 2020) addresses the concern about changes in reporting rates and complements the first results by showing evidence from a victimization survey conducted right after the lockdown came into effect. This study compares women whose partners were exempt from complying with the quarantine with women whose partners were obliged to stay at home. The study finds a positive link between lockdown restrictions and intimate partner violence (IPV). The analysis suggests that increased violence could be explained by the impact quarantine has on the time couples spend together, as well as on the income male partners generate.

These two studies provide consistent and compelling evidence about the impact of mobility restrictions on the incidence of domestic violence that has important public policy implications. First and foremost, they highlight the need to complement mobility restrictions with specific services to respond to domestic violence. Second, they provide insights into the characteristics and focus that these services should have. Domestic violence response services need tools and knowledge to support different victim profiles to address the increased incidence of emotional violence. Additionally, the evidence points to the need to focus preventive and response measures on families suffering the greatest income losses due to the pandemic.

Chapter 1

Evidence from a Domestic Violence Hotline in Argentina

Santiago M. Perez-Vincent and Enrique Carreras*

1.1. Introduction

The introduction of strict lockdown measures in response to the COVID-19 pandemic created conditions likely to increase domestic violence (Aizer, 2011; Anderberg et al., 2016; Brooks et al., 2020; Card and Dahl, 2011; Pronyk et al., 2006). Despite the great social and media impact of this problem, systematic and rigorous evidence of this link is still very limited, especially for Latin America and the Caribbean (LAC).

This study uses public and official information from the registry of calls to a hotline for victims and witnesses of domestic violence (Línea 137) in the City of Buenos Aires, Argentina, to estimate the impact of lockdown restrictions on the number of domestic violence reports.

The Government of Argentina responded to the declaration of the COVID-19 pandemic by decreeing a quarantine that came into effect on Friday, March 20, 2020. This measure, taken at a relatively early stage, required people throughout the country, with the exception of those with strategic occupations, to remain in their homes and only go out to make essential purchases or go to medical appointments.[2]

To assess the effects of this measure on reports of domestic violence, we built a database with the daily number of calls to this hotline from the beginning of 2017 until April 30, 2020. First, we compare the daily number of calls in the first part of the year with the number after the start of quarantine. Then, to account for seasonal movements and secular trends, we estimate a difference-in-differences model using daily information for the years 2017, 2018, 2019, and 2020 for the period January 1 to April 30.

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[2] In the next chapter, Gibbons, Murphy, and Rossi (2020) provide a more detailed description of the measures and the exempted occupations.

We estimate that the lockdown led to an increase of 32 percent in the number of calls to the domestic violence hotline. We find that not taking seasonal variations into account results in underestimating this effect by 12 percentage points. Breaking down the calls by the type of violence reported, we observe that the increase in the use of the hotline is mainly explained by a surge in the calls related to incidents of psychological violence. The daily calls for this type of violence increased by 76 percent.

We find that the increase in the number of calls is not explained by the impact of the lockdown on neighbors' ability to detect and report domestic violence. Reports from neighbors of victims increased due to the lockdown, but this increase explains only a small part of the overall rise in the number of calls.

Finally, we exploit the fact that the hotline is used not only by victims or their neighbors but also by other institutions that report incidents of domestic violence that are brought to their attention to examine the substitution in reporting mechanisms of domestic violence during the lockdown. We find evidence of a strong substitution effect in reporting channels: calls to the hotline made by the police fell sharply (62 percent) and the number of direct calls from victims increased (127 percent). These results highlight the importance of hotlines in the context of the lockdown and the potential biases of estimating the impact of the lockdown on domestic violence by considering only the number of direct reports or police interventions.

1.2. Related Evidence

In response to the COVID-19 pandemic, national and local authorities around the world established mobility restrictions and social distancing measures to reduce the contagion rate and try to avoid a public health crisis. These restrictions and the fear of contagion changed the daily lives of millions of people around the world and led to a global economic crisis. These dynamics raised the alert of national authorities, and international and civil society organizations, which warned about their possible impacts on the incidence of domestic violence (UN Women, 2020).

While specific research on lockdowns and domestic violence is relatively scarce, there is abundant evidence on the impact of factors associated with quarantines and the impact of general economic and social crises on domestic violence. Brooks et al. (2020) reviewed several studies looking at the psychological effect of quarantines (including those from the 2003 SARS outbreak). They find that quarantines have diverse and negative psychological effects, including stress, anxiety, trauma, irritation, and depression, among

others. Stress, frustration, and emotional instability are factors related to violence (Munyo and Rossi, 2013) and, particularly, to domestic violence (Card and Dahl, 2011).

The economic effects of the lockdown could also impact the incidence of domestic violence. Changes in the unemployment rate (Anderberg et al., 2016), the gender income gap (Aizer, 2010), and access to finance or employment opportunities (Pronyk et al., 2006) might alter the domestic balance and lead to increases in domestic violence. Furthermore, unemployment and the lockdown itself increase the time people spend at home, potentially increasing the exposure to domestic violence (Dugan et al., 1999). The evidence from the COVID-19 pandemic also points in this direction: Sanga and McCrary (2020) and Leslie and Wilson (2020) study the effect of COVID-19 social distancing on domestic violence using information on police calls for service for a sample of 14 and 15 cities in the United States, respectively. Sanga and McCrary (2020) find that social distancing leads to a 12 percent increase in calls for domestic violence, while Leslie and Wilson (2020) find a 10 percent increase. Our study differs from these works in the United States in three important dimensions. First, we examine original data from the City of Buenos Aires, Argentina. Second, we can identify the impact of mandatory lockdown as opposed to voluntary social distancing, the focus of those studies.[3] Third, since the hotline in the City of Buenos Aires is also used by other institutions to report the incidents brought to them, we can distinguish the net effect of the lockdown on domestic violence reports from the increase in calls due to changes in reporting channels caused by the same mobility restrictions.

1.3. Data: Calls to the Domestic Violence Hotline in the City of Buenos Aires

We use public and official information from the registry of calls to Línea 137, a toll-free service available 24 hours per day, 365 days per year to report domestic or sexual violence. Although officially the line is advertised as having national coverage, the registry of calls available comes only from the City of Buenos Aires. We obtained the information for each call to Línea 137 from January 1, 2017 to April 30, 2020.[4] The data includes information on the gender of the person who called, how he or she relates with the victim, the type of violence being reported (physical, psychological, economical, sexual, and/or other), the victim's age and gender, the relationship between the victim and the offender, and the offender's gender and age. The

[3] McCrary and Sanga (2020) and Leslie and Wilson (2020) both estimate the start of the "social distancing" period looking at mobility data, not based on a mandatory lockdown.

[4] The data was downloaded from the official data repository of the Ministry of Justice and Human Rights: http://datos.jus.gob.ar/dataset/linea-137-victimas-de-violencia-familiar (accessed May 30, 2020).

database also includes information on what type of response was provided by the hotline, including requests for police intervention, referrals to other government services, or the provision of information.

Since 2017, almost 80 percent of the calls to the hotline were classified as reporting either physical or psychological violence and only a relatively small percentage fell into the categories of economic or sexual violence. Some of the calls received by the hotline (around 7 percent of the total) were classified as reporting incidents "not related to domestic violence." Table A1, in the appendix, shows the total number of calls received by Línea 137 categorized by the type of violence reported.[5]

While the hotline is open to receive reports of any type of domestic violence incident, most of the calls refer to incidents in which the victim is a woman. Since 2017, 73 percent of the calls to the hotline were associated with incidents with a female victim and 8 percent were associated with a male victim, while for 18 percent the gender of the victim was not provided and for a small fraction (0.1 percent) the victim was transgender. This composition remained relatively stable throughout the different years. Table A2, in the appendix, shows the total number of calls categorized by the gender of the victim.

The service line is available to anyone who wants to report or ask for assistance concerning a domestic violence incident. The victim can call the line directly, but other people (e.g., relatives, neighbors, health professionals, or police officers) can also use the service to report incidents that come to their attention. During the last years, the percentage of calls made by the victim remained relatively stable (between 23 percent and 31 percent of calls), but then increased to 47 percent after the beginning of the quarantine. Calls made by the victims' neighbors showed a similar pattern to the victims' calls: a relatively stable proportion over the years and an increase during the lockdown. The flip side of these increases is seen in the calls received from police stations and other institutions. After being the main source of calls in all previous years, calls made by the police fell to only 9 percent after the start of the quarantine (Table A3, in the appendix, shows annual calls categorized by the person or institution that made the call).

Table 1.1 presents the average number of calls per day received by the Línea 137. These numbers provide an overview of the hotline usage trends over the last years and a first insight of the impact of the declaration of the quarantine. The number of calls had steadily decreased over the last years, from 27 calls per day in 2017 to 16.6 in 2020 before

[5] We use all calls (including those coded as "not domestic violence") in our analysis. Excluding calls that are coded as not related to domestic violence from the statistical analysis does not affect our results.

the lockdown period. Most of this decrease was driven by calls related to physical violence incidents, which fell from 15.5 calls a day in 2017 to 9.3 in 2020 pre-lockdown. Table 1.1 also shows the average number of calls after the declaration of the lockdown: in this period, the number of calls rebounded to 20.1 calls per day. The increase was mainly explained by a jump in calls related to psychological violence, which—after hovering around 5.4 calls a day over the past few years—increased by almost three calls a day.

Table 1.1. Calls per Day to Línea 137 by Type of Violence Reported

	2017	2018	2019	2020 Pre-lockdown	2020 Post-lockdown
All calls	27.1	22.2	19.9	16.6	20.1
Physical	15.5	12.7	10.4	8.3	8.7
Psychological	5.4	5.1	5.4	5.4	8.2
Not domestic violence	1.9	0.8	2.1	1.3	1.7
Other types	4.1	3.4	1.8	1.6	1.5

Notes: Authors' calculations based on data from calls to Línea 137. Data downloaded from: http://datos.jus.gob.ar/dataset/linea-137-victimas-de-violencia-familiar (accessed May 30, 2020).

This first examination of the data suggests an increase in the use of the domestic violence hotline during the lockdown period. However, it is necessary to conduct a more rigorous analysis to distinguish this increase from seasonal variations and to more accurately estimate the impact of quarantine on the use of the domestic violence hotline. We discuss the methodology in the next section.

1.4. Empirical Strategy

We estimate the impact of the COVID-19 lockdown on domestic violence calls using two different approaches: a before vs. after model and a difference-in-differences model. The latter model accounts for seasonal variations and secular trends in the calls to the hotline by basically comparing the change in daily domestic violence call counts before and after the lockdown against the change observed during the same period in previous years.

The Government of Argentina decreed a national quarantine on Friday, March 20, 2020. The quarantine prescribed that all persons—except for those with a few specific occupations—had to remain in their homes and only go out for essential reasons, such as medical treatments or food and medicine purchases. The lockdown came into effect at a relatively early stage of the spread of the virus in the country and drastically changed the

daily life of people. The quarantine was strongly enforced from the first day and was imposed quite unexpectedly. The official day of the (de jure) start of the quarantine marked the actual adoption of widespread social distancing measures in the City of Buenos Aires.[6]

The first analysis we perform is a before vs. after comparison of the number of calls to the domestic violence hotline. We perform this analysis by estimating the following model:

$$DVCalls_d = \alpha + \beta * Lockdown + \partial_{dow} + \varepsilon_d \ (1)$$

We use as dependent variable ($DVCalls_d$) both the daily number of domestic violence calls on each day and the inverse hyperbolic sine of this number.[7] The variable "Lockdown" is a dummy indicator that equals one if the day is post March 20, 2020. The coefficient of interest is β, which represents the change in the calls to Línea 137 after the start of the quarantine.[8] Coefficients ∂_{dow} are day-of-the-week fixed effects that capture systematic differences in the number of calls between the different days of the week. The inclusion of these fixed effects is done to improve the fit of the model and increase the precision of the estimation. For this analysis, we restrict the sample to January 1 to April 30, 2020.

This exercise simply compares the average number of calls in the first part of the year against what was observed after the start of quarantine. The exercise allows us to estimate the impact of the quarantine on the use of the domestic violence hotline under the assumption that, if those restrictions had not been implemented, the number of calls would have remained as in the first part of the year.

This comparison of the number of calls in 2020 before and after the lockdown therefore does not account for potential seasonal movements in the number of calls that could bias the estimation of the impact of the quarantine. To account for these seasonal movements, we estimate the following difference-in-differences model, using daily information for the years 2017, 2018, 2019, and 2020 for the period January 1 to April 30:

$$DVCalls_d = \alpha + \beta * Lockdown + \partial_{dow} + \emptyset_{woy} + \gamma_{year} + \varepsilon_d \ (2)$$

[6] The empirical strategy follows Leslie and Wilson (2020); however, the determination of the beginning of the quarantine period differs from their work. See footnote 3.

[7] We use the inverse hyperbolic sine transformation because it approximates the natural logarithm while allowing us to keep zero-valued observations. See next footnote.

[8] To interpret β as a percentage change we then follow Halvorsen and Palmquist (1980) and use the small-sample bias correction suggested by Kennedy (1981), as explained in Bellemare & Wichman 2019:

$$\%Change = Exp(\beta - 0.5(Var(\beta)) - 1$$

In addition to the variables described for the previous model, we now include year fixed effects (γ_{year}) and week-of-the-year fixed effects ($\emptyset_{woy}$). The first set of fixed effects captures the secular trends in the number of calls to the hotline, while the week-of-the-year fixed effects account for seasonal movements in this variable. This exercise allows us to estimate the impact of the lockdown on the use of the domestic violence line under the assumption that, if it had not been implemented, the number of calls would have shown a seasonal evolution as in the previous three years. As in the previous model, the identification of the causal effect hinges on the supposition that no other changes in policies or exogenous factors affecting the use of Línea 137 occurred after the quarantine was imposed. The difference between the two models is critical in scenarios in which there are important seasonal variations in the dependent variable.[9] In the next section, we show the ordinary least squares (OLS) estimates of these models using information for the total number of calls and distinguishing between physical violence and psychological violence calls.

1.5. Results

The event study model shows that, for the weeks prior to the start of the mandatory lockdown, the trend of the number of calls to the domestic violence line was not significantly different to that of previous years. In the pre-lockdown period, estimates are not systematically different from zero, suggesting flat pre-trends. After the declaration of the quarantine, in contrast, the estimated coefficients are all positive, larger in value, and, for the last three weeks of data, statistically significant (at standard confidence levels). Figure A1 in the appendix shows the estimates of the event study coefficients. The evidence points to an increasing effect of the lockdown over time, in line with the results of Sanga and McCrary (2020) and Leslie and Wilson (2020).

The estimates of the two main models described in the previous section also indicate that the lockdown led to a significant increase in the calls to Línea 137 in the City of Buenos Aires. To check the validity of the identification assumptions and complement the event

[9] We also estimate a weekly event study model to examine the plausibility of the parallel trends assumption in 2020. We estimate the following equation:

$$DVCalls_d = \alpha + \sum_{p=0}^{10}(\beta_p * Week_p) + \sum_{p=13}^{18}(\beta_p * Week_p) + \partial_{dow} + \emptyset_{woy} + \gamma_{year} + \varepsilon_d \quad (3)$$

$Week_p$ refers to each week from January to April. The β_p coefficients trace out periodical changes in the daily number of domestic violence calls through January, February, March, and April 2020 relative to 2017, 2018, and 2019. Week 11 and the first days of week 12 (i.e., the 11 days before the quarantine) are the omitted category. The same set of fixed effects from equation (2) are included.

study analysis, we run two placebo exercises. First, we estimate the models as if the quarantine had been introduced the same day but one year before (March 20, 2019), using data for the period 2017–2019. We find no significant increases in the total number of calls in the difference-in-differences model. Then, we estimate both models as if the lockdown had taken place from March 2 to March 19, 2020, and find no significant changes in either model. Results are reported in Tables A4 and A5 in the appendix.

Table 1.2. Effect of the Lockdown on Calls to Línea 137: Type of Violence

	Before vs. after (model 1)		Diff-in-diff (model 2)	
	IHS (calls)	**Calls**	**IHS (calls)**	**Calls**
	All calls			
Lockdown	0.181***	3.491***	0.280***	5.974***
	(0.0662)	(1.132)	(0.0720)	(1.347)
% Change	20%		32%	
R-squared	0.129	0.155	0.516	0.555
	Psychological violence			
Lockdown	0.446***	2.823***	0.573***	3.575***
	(0.0984)	(0.592)	(0.118)	(0.653)
% Change	55%		76%	
R-squared	0.237	0.254	0.278	0.309
	Physical violence			
Lockdown	0.0283	0.352	0.0715	0.944
	(0.0842)	(0.620)	(0.0919)	(0.819)
% Change	3%		7%	
R-squared	0.097	0.128	0.460	0.473
Observations	121	121	481	481
Day of week FE	*Yes*	*Yes*	*Yes*	*Yes*
Week of year FE	*No*	*No*	*Yes*	*Yes*
Year FE	*No*	*No*	*Yes*	*Yes*

Notes: Percentage change estimated following Halvorsen and Palmquist (1980) and using the small-sample bias correction suggested by Kennedy (1981), as explained in Bellemare and Wichman 2019. Standard deviations are shown in parentheses. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level. Línea 137 data for the City of Buenos Aires. Model 1 is estimated using data from Jan 1 to Apr 30, 2020. Model 2 is estimated using data from Jan 1 to Apr 30 for the years 2017, 2018, 2019, and 2020.

Table 1.2 reports the OLS estimates of models (1) and (2) using as dependent variables both the number of calls and its inverse hyperbolic sine for overall calls, calls related to psychological violence, and calls related to physical violence. From the first model, which does not account for seasonal movements in the use of the hotline, we estimate an 20 percent increase in the overall number of calls after the start of the quarantine. This increase

amounts to almost 3.5 more calls each day. Adjusting for seasonal movements in the number of calls (model 2), we estimate an increase of 32 percent (almost 6 calls per day). The difference between the results from the two models shows that not considering the seasonal variation in the number of calls leads to an underestimation of the effect of the quarantine of 12 percentage points (or 2 calls per day).

We then separately estimate the models using the information on calls related to physical and psychological domestic violence incidents. We find that most of the increase in the calls to the domestic violence hotline associated with the lockdown is concentrated in calls reporting psychological violence. The before vs. after comparison (model 1) indicates that this type of calls increased 55 percent (or 3 calls per day). Adjusting for seasonal movements in the number of calls (model 2), we estimate an increase of 76 percent (3.6 calls per day). Regarding calls reporting physical violence, estimates are also positive, pointing to an increase in the number of calls, but smaller in size and not statistically significant (at standard confidence levels). The impact of the lockdown on the frequency of this type of calls is estimated to be 3 percent in the before vs. after model (model 1), and 7 percent in the difference-in-differences model (model 2).

1.6. Robustness Checks and Mechanisms

To check the robustness of the results presented in the last section, we estimate the models restricting the sample only to calls related to incidents with a female victim. Then, to evaluate the substitution between different types of reporting mechanisms, we assess changes in the number of calls done by the victim, a victim's neighbor, and by the police separately.

Restricting the analysis to calls with a female victim gives extremely similar results to using the total number of calls. This similarity holds also when assessing the effects on calls related to psychological and physical violence separately (Table A6 in the appendix).

The fact that Línea 137 is also used by the police to report incidents of intrafamily violence allows us to assess changes in the use of different reporting mechanisms due to the lockdown. Table 1.3 shows that restricting the analysis to calls done by the victim results in a much larger effect of the lockdown on domestic violence: using the difference-in-differences model, we estimate an 127 percent increase in this type of call (vs. a 32 percent increase in the total number of calls reported in Table 1.2). This estimate would have been obtained as the overall result if the service line had only been used by victims, showing the potential bias of using the number of calls from victim support lines as an indicator of domestic violence. The increase in calls from victims may reflect not only an increase in

domestic violence, but also a substitution from other reporting mechanisms that, due to the nature of quarantine, are limited or unavailable (such as reports at police stations).

We further check this possibility by estimating the effect of the lockdown on the calls to Línea 137 made from police stations and other institutions. The difference-in-differences estimates reported in Table 1.3 indicate that these calls fell by 62 percent due to the lockdown. This sharp fall confirms the substitution between reporting mechanisms that resulted from the lockdown: the mobility restrictions reduced the reporting done at the police station and increased the number of direct calls to the domestic violence hotline. This result highlights the possible underestimation of the impact of the lockdown on domestic violence reports that could be obtained by considering only reports made by the police or at the police station.

Table 1.3. Effect of the Lockdown on Calls to Línea 137: Reporting Mechanisms

	Before vs. after (model 1)		**Diff-in-diff (model 2)**	
	IHS (calls)	**Calls**	**IHS (call)**	**Calls**
	Victim calls			
Lockdown	0.621***	4.330***	0.824***	5.372***
	(0.0962)	(0.681)	(0.110)	(0.724)
% Change	85%		127%	
R-squared	0.292	0.349	0.333	0.383
	Police and other institutions calls			
Lockdown	−0.891***	−2.770***	−0.883***	−2.610***
	(0.130)	(0.336)	(0.134)	(0.548)
% Change	-63%		-62%	
R-squared	0.377	0.362	0.630	0.542
Observations	121	121	481	481
Day of week FE	*Yes*	*Yes*	*Yes*	*Yes*
Week of year FE	*No*	*No*	*Yes*	*Yes*
Year FE	*No*	*No*	*Yes*	*Yes*

Notes: Percentage change estimated following Halvorsen and Palmquist (1980) and using the small-sample bias correction suggested by Kennedy (1981), as explained in Bellemare and Wichman (2019). Standard deviations are shown in parentheses. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level. Línea 137 data for the City of Buenos Aires. Model 1 is estimated using data from Jan 1 to Apr 30, 2020. Model 2 is estimated using data from Jan 1 to Apr 30 for the years 2017, 2018, 2019, and 2020.

Another concern about the use of service line calls to measure changes in domestic violence in this context is that confinement may have altered the likelihood that a neighbor hears or witnesses a domestic violence incident. As people spend more time in their homes, they may become aware of situations that had previously gone unnoticed. If this is the case, we

could observe a rise in the number of calls that does not correspond to an increase in the actual incidence of domestic violence but only to an increase in the perception of the incidents.

To address this concern, we first estimate the effect of the lockdown on the number of calls to Línea 137 made by a victim's neighbor (Table 1.4). We observe positive coefficients in the different models and specifications, which points to an increase in these calls: confinement leads to more reports of domestic violence made by victims' neighbors. However, this change is relatively small in absolute terms and does not explain much of the increase in the overall number of calls due to the lockdown. Table 1.4 also reports the estimates for the before vs. after and the difference-in-differences model taking as a dependent variable the total number of calls after excluding those made by a neighbor of the victim. Estimates are slightly lower, but extremely similar to the ones in our baseline specification using all calls (shown in Table 1.2).

Table 1.4. Effect of the Lockdown on Calls to Línea 137: Calls from Victim's Neighbors

	Before vs. after (model 1)		**Diff-in-diff (model 2)**	
	IHS (calls)	**Calls**	**IHS (call)**	**Calls**
	Neighbor calls			
Lockdown	0.486***	0.796***	0.399***	0.624**
	(0.116)	(0.205)	(0.140)	(0.245)
% Change	61%		48%	
R-squared	0.179	0.163	0.157	0.147
	Excluding calls by a victim's neighbor			
Lockdown	0.142**	2.695**	0.252***	5.349***
	(0.0699)	(1.097)	(0.0750)	(1.286)
% Change	15%		28%	
R-squared	0.101	0.128	0.518	0.558
Observations	121	121	481	481
Day of week FE	*Yes*	*Yes*	*Yes*	*Yes*
Week of year FE	*No*	*No*	*Yes*	*Yes*
Year FE	*No*	*No*	*Yes*	*Yes*

Notes: Percentage change estimated following Halvorsen and Palmquist (1980) and using the small-sample bias correction suggested by Kennedy (1981), as explained in Bellemare and Wichman (2019). Standard deviations are shown in parentheses. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level. Línea 137 data for the City of Buenos Aires. Model 1 is estimated using data from Jan 1 to Apr 30, 2020. Model 2 is estimated using data from Jan 1 to Apr 30 for the years 2017, 2018, 2019, and 2020.

1.7. Conclusions

The lockdown measures adopted in response to the COVID-19 pandemic created conditions likely to increase domestic violence. In this study, we present evidence on the impact of these measures on domestic violence reports for Argentina. Using information on the calls to a domestic violence hotline (Línea 137) in the City of Buenos Aires, we find that the lockdown restrictions led to a 32 percent increase in the number of domestic violence reports. We also find that not taking seasonal variations into account results in underestimating this effect by 12 percentage points. The increase in the use of the hotline is mainly explained by the surge in the calls related to incidents of psychological violence.

We find evidence of a large substitution effect between different reporting channels: calls to the hotline from the police fell sharply and direct calls from the victims increased. Not considering this substitution in the reporting channels—and looking solely at the number of direct reports or police interventions—could lead to greatly over- or underestimating the impact of the lockdown on domestic violence.

This study provides relevant and early evidence that must be complemented with the analysis of additional sources of information and of data from other countries. For example, many other LAC countries have implemented specific hotlines for victims or witnesses of family violence that could be used to conduct similar analyses to the one carried out in this study. In an ongoing research project, we are collecting this information to complement the evidence obtained from Argentina.

The use of different sources of information is also essential to assess the impact of lockdowns on domestic violence. Data from calls to hotlines are informative on this issue and provide accurate information on the demand for government services. However, they only reveal part of the dynamics of domestic violence. The changes observed in the number of reports could be capturing changes in violence but also changes in reporting rates induced by the lockdown. It is therefore extremely important to complement this analysis with that of other sources of information to draw clearer conclusions about the overall dynamics of domestic violence.

Chapter 2

Confinement and Intimate Partner Violence: The Short-Term Effect of COVID-19

M. Amelia Gibbons, Tommy E. Murphy, and Martín A. Rossi[†]

2.1. Introduction

Roughly one in three women around the world experience some form of violence throughout their lives (WHO, 2013). In some regions of Asia, Latin America and the Caribbean, and Sub-Saharan Africa, this ratio goes up to almost one in two, and in Central Sub-Saharan Africa as high as two in three (Devries et al., 2013: 1528). Physical and psychological trauma from these experiences leads to different kinds of injuries and mental health problems, often stimulate substance abuse, and in many cases end up in death (both homicide and suicide).

Health and social consequences, and their associated economic costs, are so large that they make violence against women a major public policy problem. Since the great majority of this violence is perpetrated by the victim's intimate partner in the form of physical, sexual, and/or emotional abuse (Devries et al., 2013), understanding the causes of IPV has become central in various academic and policy debates (Heise, 2011). Naturally, *fundamental* determinants of IPV, like deeply rooted social norms on violence, persistent gender inequality, or chronic poverty, have received considerable attention in the literature (e.g., Jewkes, 2002; Gibbs et al., 2020). But understanding its *proximate* determinants or situational triggers, such as alcohol consumption (Angelucci, 2008; Devries et al., 2014), labor market fluctuations (Aizer, 2010), or even male frustration after a football game (Card and Dahl, 2011), sometimes carry equally—or even more–important information for public policy, as policymakers usually have better tools to control them than they do large structural factors. Also, by systematically tinkering with immediate determinants, cultural priors could slowly, but eventually, be altered as suggested by some tipping models.

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The recent COVID-19 pandemic has arguably stimulated some of these situational triggers for IPV, most notably the time partners spend with each other. Increasing day-to-day exposure to potential perpetrators can, in principle, increase violence. Peterman et al. (2020: 11), for example, summarize evidence on this connection from other crisis settings where families are forced to be together for extended periods of time (e.g., in refugee camps) or from situations when potential perpetrators are temporarily away (e.g., with seasonal male migration programs). Quarantines implemented worldwide following the spread of coronavirus resulted in many people spending more time with their families and partners, raising concerns about the potential unintended consequences that this policy could have on the level of intrafamily violence. Confinements also contributed to reducing family income, another potential trigger of IPV.

There is, in fact, abundant anecdotal evidence suggesting IPV may have increased with the implementation of lockdowns. Journalistic pieces, for instance, report that calls to hotlines around the world increased between 40 and 300 percent. Yet, the academic literature on the subject is limited and ambiguous. Our paper contributes to this public policy debate by providing evidence on the causal impact of quarantines on IPV, especially in a context where the potential stress caused by the actual incidence of the disease was relatively small.

Assessing the impact of coronavirus quarantines on IPV has, of course, a series of challenges. Although most governments soon recognized restricting movement of people and social distancing was important to limit the spread of the disease, their reactions varied enormously in the types of restriction they imposed, from localized suggestions to full national lockdowns. Compulsory quarantines were imposed in some countries, and restrictions to movement also varied substantially in their timing with respect to the advance of the virus. Many developed countries in the Northern Hemisphere acted only when the spread of the disease was already imposing a serious health threat to the population, making it hard to figure out whether any change in an outcome of interest (in our case, IPV) is a consequence of the confinement per se, or partly a consequence of the stress triggered by the fear of the disease.

In this respect, Argentina offers a stark contrast. Given that the disease started in the boreal winter, it arrived relatively late to the country and, since by then there was already a global consensus that the virus represented a serious threat, the Argentine government reacted immediately with strong measures. The first recorded case appeared on March 3, 2020—more than two months after the beginning of the outbreak in China—and the first death, on March 7. On March 11, the WHO declared the COVID-19 outbreak a pandemic, more or less when first autochthonous cases began to surface in the country. Despite these

low figures, with the world on alert, the Argentinean government decided to take extreme measures to control the disease. Following the cancelation of a series of mass events and closure of schools on March 16, a full compulsory national lockdown was declared on March 20, when a total of only three deaths had been confirmed within the country.

Argentina's response to the crisis stands in stark contrast with most other places in the world. Asian countries had mostly localized lockdowns, not national ones. The United States and Canada also reacted late and with localized policies, many of them rather moderate. Most European countries did eventually engage in national compulsory lockdowns, but only when they were already considerably compromised in terms of cases and deaths. In Argentina, the lockdown was particularly strict and affected the whole country when the effect of the actual disease was minimal. It was as severe as those of hard-hit European and Asian countries, and the government was reluctant to loosen it in any way for weeks. Circulation was extremely restricted. All non-essential activities were canceled, and people were not allowed to leave their homes except to buy groceries or deal with emergencies. If they did go out, they had to go alone (e.g., it was not permitted to enter a supermarket with a partner or a child). It was forbidden for people to take children to parks or to run outside. People had to request permits to move around and were penalized if they did not have them. Between March and early June, more than 93,000 people were detained for breaching the quarantine without a permit and nearly 5,000 cars were confiscated. At the same time, it was clear that this policy was mostly preventive, as there were very few cases around. Two months into the lockdown, the *total* death toll was 401 (10 deaths per million population). More than 600 had died in Italy and nearly 200 in Spain when national lockdowns were declared, and two months into the lockdowns they had, respectively, roughly 30,000 and 27,000 deaths (about 540 and 610 deaths per million population), nearly 218,000 and 272,000 recorded cases, and arguably many more unrecorded.

This makes Argentina's case particularly interesting because the full national lockdown took place in an environment where few people had yet to be directly threatened by the disease. In this context, another noteworthy feature of the Argentine quarantine decree is that it established clear exceptions for an important subset of the population (e.g., workers in health care, food sales, and delivery). Therefore, for reasons plausibly exogenous to the prevalence of IPV, some families were placed in full quarantine, while others were not. We exploit this variability in individual exposure to quarantine requirement to explore the effect of the lockdown on physical, sexual, and emotional IPV using a confidential web-based survey aimed at women that were quarantined. This is an important

aspect of our empirical aspect, since the information we use comes from women exposed to the quarantine and the treatment is determined by the quarantine status of women's partners. Our main finding is that women whose partners are also in quarantine are more likely to report an increase in all three of these dimensions of IPV. In our analysis of potential mechanisms, we find evidence that the quarantine increased the time spent with the partner (increasing the chances of violent encounters) and decreased family and partner's income (increasing economic-related stress or tension regarding the relative contributions to the family income). We do not find evidence for other of the usual culprits, such as alcohol or drug consumption.

Our research relates to two important strands of literature. First, it connects to the recent but rapidly increasing literature on the socioeconomic impact of the coronavirus pandemic and its associated lockdowns, in particular, the differential impact on gender (e.g., Adams-Prassl et al*.,* 2020; Alon et al*.*, 2020; Wenham et al*.*, 2020). Most of this literature focuses on the impact on the labor market and household work, especially as school and childcare closures have increased unpaid household work, and these additional reassignments have a differential effect on women and could limit their work and economic opportunities. Ours expands this literature to provide strong evidence that lockdowns can lead to increased IPV, and this should probably be factored in when assessing whether to continue or not with that policy, or what additional measures to consider as part of the lockdown policies.

Second, it links with the long-standing research on the sources of violence against women, especially by intimate partners, that spans various disciplines. In economics, this line of research is related to how violence against women is affected by women's economic dependence, wage gaps, and job opportunities (e.g., Aizer, 2010; Basu and Famoye, 2010; Bhalotra et al., 2020; Bobonis et al., 2013; Bowlus and Seitz, 2006; Farmer and Tiefenthaler, 1997; Munyo and Rossi, 2015), alcohol abuse (Angelucci, 2008), health (Papageorge et al., 2019), or structural poverty (Aizer, 2011). There is, in fact, part of this literature linking pandemics to intrafamily violence. Peterman et al. (2020) review the literature and document that quarantines and social isolation are important channels to explain the observed increase in violence against women and girls during pandemics as, for example, in the quarantines enforced during the 2014–16 Ebola outbreak in West Africa (UNDP, 2015). Our study is able to show an effect even in the absence of a direct disease-related stress on all three forms of IPV, including emotional, which is often less studied than physical and sexual violence (Devries et al., 2013).

2.2. Survey

We measure IPV using a confidential web-based survey we conducted in May 2020. At that moment, people had experienced seven to eight weeks of strict lockdown. We sent an email invitation to participate in the survey to an email list of approximately 29,000 women. To participate in the survey, women had to be at least 18 years old, cohabiting with a male partner for at least one year, and under quarantine according to their job activity. To increase survey response rates, participants were included in a raffle for a smartphone. The survey was active for two weeks and we received 1,502 completed, valid surveys. We asked about IPV in the one-year period before quarantine and since the beginning of the quarantine (a period of two months). Questions explored three dimensions of IPV: along with the frequently studied physical and sexual dimensions, we also looked at emotional violence. We included four questions on physical, two on sexual, and six on emotional domestic violence. Respondents indicated frequencies on a 5-point scale ranging from "Never" to "Always." From the raw data, in which each question was scaled from 0 to 4, we constructed the three variables on IPV (before and during quarantine) by adding the scores on each dimension, as usually done in the literature. The range of scores is 0 to 16 (physical), 0 to 8 (sexual), and 0 to 24 (emotional). To have comparable scores, we divided each score by the maximum possible score in each dimension and multiply it by 100. In this way, we got a metric for each dimension ranging from 0 to 100 (i.e., an individual would have a score equal to 100 if she answered "Always" in all the questions of that dimension). We also constructed a metric for IPV as the average of the 3 individual metrics. In this way, we ended up with 4 primary outcomes (IPV, emotional violence, sexual violence, and physical violence).

In our sample, 58.7 percent of women report some level of emotional violence, 10.1 percent sexual violence, and 13.2 percent physical violence in the sense that they did not answer "never" to all of the questions of that dimension (before the quarantine). Reported violence in our survey is in line with that in the 2018 survey in the City of Buenos Aires, conditional on education levels. Aside from the primary outcomes, we also collected information on five secondary outcomes: (i) increase in alcohol and drug consumption (a dummy variable that takes the value of 1 if her partner increased the consumption of alcohol and/or drugs); (ii) change in hours spent with her partner; (iii) drop in family income (a dummy variable that takes the value of 1 if the family income decreased); (iv) drop in partner's income (a dummy variable that takes the value of 1 if partner's income decreased); (v) and change in the number of household members (a variable that takes the value of 1 if

the number of household members increased, 0 if it didn't change, and -1 if the number of household members decreased). Table 2.1 presents summary statistics of primary and secondary outcomes.

The treatment variable is Quarantine, a dummy variable that takes the value of 1 for those women who report that, according to the decree, their partners had to comply with quarantine. Notice that Quarantine captures intention to treat, since we ask whether they have to comply, not if they did comply. From the survey, we also obtained self-reported information on a set of pre-treatment characteristics: marital status, number of children, number of rooms in the home, number of people cohabitating, own age, partner's age, own maximum level of education, partner's maximum level of education, and province of residence.

Interpreting Survey Responses

The survey was anonymous and conducted online, so there is no reason to expect social stigma attached to particular responses or any changes in answers due to cues about what constitutes appropriate behavior. The response rate was 5.18 percent. A natural concern in this context is potential selection into the sample: if selection into the sample was non-random, our estimated treatment effects may be biased. For non-random selection into our sample to threaten the internal validity of our estimates, selection would need to be differential by partner's quarantine assignment status. We test for differential selection into the survey in three ways.

First, we examine whether the sample proportion of men who have to comply with quarantine in our sample is similar to the population proportion.[10] In our sample, 79 percent of women's partners had to comply with quarantine. Even though an exact figure for the population is not available, according to casual evidence, more than 75 percent of the population had to comply with the quarantine.

Second, we look at within-survey attrition. The proportion of women that started the survey but did not complete is low (9.95 percent). Also, attrition is orthogonal to partner's quarantine assignment status: the proportion of attrition is 9.29 percent in the quarantine group, 12.39 percent in the non-quarantine group, and the difference between these two proportions is statistically not significant.

Third, we examine whether individuals' pre-quarantine variables are balanced across the quarantine and non-quarantine groups. We have information on three sets of pre-quarantine variables: outcomes, socioeconomic characteristics, and province of residence. Tables 2.2, 2.3, and 2.4 report differences by partner's quarantine assignment status, in pre-quarantine levels of IPV, socioeconomic characteristics, and province of residence. Overall, there are no statistically significant differences between the quarantine and non-quarantine groups for 37 of the 46 individuals' pre-quarantine characteristics available. Most important, for the four primary outcomes, the differences between the quarantine and non-quarantine groups are very small and statistically not significant. Since population and sample proportion of men under quarantine status are similar, within-survey attrition is low and orthogonal to quarantine status, and most pre-quarantine characteristics are balanced across the quarantine and non-quarantine groups, we conclude that results reported below are not subject to significant sources of bias due to differential selection into the survey.

Table 2.1. Summary Statistics of Primary and Secondary Outcomes

	Mean	Standard deviation	Min.	Max.
Primary outcomes				
IPV	3.69	6.98	0.00	70.14
Emotional	8.46	13.39	0.00	91.67
Sexual	1.92	8.29	0.00	87.50
Physical	0.70	3.26	0.00	43.75
Secondary outcomes				
Change in hours w/partner	5.66	4.48	-7.00	15.00
Increase in alcohol and drug consumption	0.03	0.18	0.00	1.00
Change in household members	-0.02	0.31	-1.00	1.00
Decrease in family income	0.56	0.50	0.00	1.00
Decrease in partner's income	0.44	0.50	0.00	1.00

Table 2.2. Pre-quarantine Outcomes, by Quarantine Status

	Quarantine mean	**Non quarantine mean**	**Difference**
IPV	4.300	4.254	0.046
	(7.634)	(6.823)	[0.476]
Emotional	9.285	9.285	0.000
	(13.492)	(12.998)	[0.853]
Sexual	2.288	2.371	-0.083
	(8.727)	(8.394)	[0.551]
Physical	1.328	1.105	0.222
	(4.832)	(3.465)	[0.292]

Notes: Standard deviations are shown in parentheses. Standard errors are shown in brackets. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level.

Table 2.3. Pre-quarantine Socioeconomic Characteristics, by Quarantine Status

	Quarantine mean	Non-quarantine mean	Difference
Age	44.255	41.817	2.439***
	(12.348)	(10.523)	[0.764]
Partner's age	46.962	43.916	3.046***
	(13.180)	(10.915)	[0.812]
Time in the relationship	19.257	17.251	2.006**
	(12.947)	(11.056)	[0.801]
Time cohabitating	17.669	15.227	2.442***
	(13.184)	(10.688)	[0.809]
Number of rooms	3.273	3.212	0.061
	(1.177)	(1.098)	[0.074]
Number of household members	3.599	3.788	−0.188**
	(1.455)	(1.628)	[0.095]
Number of children 0–5	0.287	0.328	−0.041
	(0.601)	(0.581)	[0.038]
Number of children 6–12	0.368	0.531	−0.163***
	(0.672)	(0.841)	[0.045]
Number of children 13–17	0.330	0.418	−0.088**
	(0.697)	(0.704)	[0.044]
Married	0.607	0.595	0.012
	(0.489)	(0.492)	[0.031]
Not married	0.393	0.402	−0.009
	(0.489)	(0.491)	[0.031]
Woman: no instruction or incomplete primary	0.024	0.035	−0.011
	(0.154)	(0.185)	[0.010]
Woman: complete primary school	0.119	0.141	−0.022
	(0.324)	(0.349)	[0.021]
Woman: complete high school	0.336	0.350	−0.015
	(0.472)	(0.478)	[0.030]
Woman: complete university or more	0.521	0.473	0.048
	(0.500)	(0.500)	[0.032]
Partner: no instruction or incomplete primary	0.046	0.061	−0.015
	(0.210)	(0.240)	[0.014]
Partner: complete primary school	0.232	0.289	−0.058**
	(0.422)	(0.454)	[0.027]
Partner: complete high school	0.343	0.334	0.009
	(0.475)	(0.473)	[0.030]
Partner: complete university or more	0.379	0.315	0.064**
	(0.485)	(0.465)	[0.031]

Notes: Standard deviations are shown in parentheses. Standard errors are shown in brackets. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level.

Table 2.4. Pre-quarantine Province of Residence, by Quarantine Status

	Quarantine mean	Non-quarantine mean	Difference
Buenos Aires province	0.512	0.508	0.004
	(0.500)	(0.501)	[0.032]
Buenos Aires city	0.160	0.141	0.018
	(0.366)	(0.349)	[0.023]
Catamarca	0.004	0.006	−0.002
	(0.065)	(0.080)	[0.004]
Chaco	0.018	0.006	0.011
	(0.132)	(0.080)	[0.008]
Chubut	0.012	0.003	0.009
	(0.108)	(0.057)	[0.006]
Cordoba	0.046	0.058	−0.012
	(0.210)	(0.234)	[0.014]
Corrientes	0.009	0.006	0.003
	(0.096)	(0.080)	[0.006]
Entre Rios	0.020	0.026	−0.006
	(0.141)	(0.159)	[0.009]
Formosa	0.006	0.003	0.003
	(0.076)	(0.057)	[0.005]
Jujuy	0.006	0.006	−0.001
	(0.076)	(0.080)	[0.005]
La Pampa	0.007	0.010	−0.003
	(0.082)	(0.098)	[0.005]
La Rioja	0.006	0.006	−0.001
	(0.076)	(0.080)	[0.005]
Mendoza	0.021	0.032	−0.011
	(0.143)	(0.177)	[0.010]
Misiones	0.017	0.026	−0.009
	(0.129)	(0.159)	[0.009]
Neuquen	0.013	0.003	0.010
	(0.115)	(0.057)	[0.007]
Rio Negro	0.018	0.029	−0.011
	(0.132)	(0.168)	[0.009]
Salta	0.022	0.029	−0.007
	(0.146)	(0.168)	[0.010]
San Juan	0.007	0.006	0.000
	(0.082)	(0.080)	[0.005]
San Luis	0.009	0.013	−0.004
	(0.096)	(0.113)	[0.006]
Santa Cruz	0.008	0.003	0.004
	(0.087)	(0.057)	[0.005]
Santa Fe	0.057	0.055	0.002
	(0.232)	(0.228)	[0.015]
Santiago del Estero	0.007	0.003	0.004
	(0.082)	(0.057)	[0.005]
Tierra del Fuego	0.006	0.003	0.003
	(0.076)	(0.057)	[0.005]
Tucuman	0.011	0.016	−0.005
	(0.104)	(0.126)	[0.007]

Notes: Standard deviations are shown in parentheses. Standard errors are shown in brackets. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level.

2.3. Empirical Strategy and Results

Even though a full compulsory national lockdown was declared in Argentina on March 20, the quarantine decree established clear exceptions for an important subset of the population, who were allowed to continue with their activities as usual. Our identification strategy exploits this variability in partner's exposure to quarantine requirement to explore the effect of partner's quarantine on IPV (all the women in the sample are under quarantine).

Formally, we estimate the following equation:

$$Y\text{-}after_i = \alpha + \beta\ Quarantine_i + \mu\ Y\text{-}before_i + \gamma\ X_i + \varepsilon_i \quad (1)$$

where $Y\text{-}after_i$ is IPV (emotional, sexual, or physical) for individual i during quarantine, $Quarantine_i$ is a dummy variable that takes the value of 1 for those women whose partners, according to the decree, have to comply with quarantine, $Y\text{-}before_i$ is a vector of pre-quarantine outcomes, X_i is a vector of individuals' pre-quarantine characteristics, and ε_i is an error term. The coefficient of interest is β.

Our identification assumption is that IPV in the non-quarantine group is a good counterfactual of IPV in the quarantine group in the absence of quarantine, conditional on the set of pre-quarantine variables available. A potential concern would arise if men employed in quarantine-exempted activities have a different propensity to engage in IPV relative to the general population. However, first, the simple observation of exempted activities suggests that this is not the case. Exempted activities are very heterogeneous. For example, they include health care, food sales, delivery, and security forces (the full list of exempted activities is provided in Appendix B). Also, as shown in the previous section, and as expected if quarantine status were as if randomly assigned, pre-quarantine IPV is not correlated with quarantine status, and the values of the pre-quarantine primary outcomes (emotional, sexual, and physical violence) are remarkably similar between the quarantine and non-quarantine groups.

Table 2.5 reports ordinary least squares (OLS) estimates of equation (1). In order to draw general conclusions in the context of multiple metrics, we first report results for IPV (the average of the 3 metrics). As shown in column (1), the coefficient of Quarantine is positive and statistically significant, indicating that women whose partners are in quarantine are more likely to report IPV.[11]

[11] The survey was active for two weeks. Results are robust to including day-of-answer fixed effects. All results mentioned and not reported are available from the authors on request.

Table 2.5. Main Results: Impact of Quarantine on Intimate Partner Violence

	IPV (1)	Emotional (2)	Sexual (3)	Physical (4)
Quarantine	0.753*** (0.211)	1.148*** (0.395)	0.809** (0.315)	0.302** (0.147)
Mean of dependent variable	3.692	8.455	1.922	0.699
Observations	1,502	1,502	1,502	1,502

Notes: Robust standard errors are shown in parentheses. All models are estimated using ordinary least squares and control for the set of pre-quarantine variables listed in Tables 2.2, 2.3, and 2.4. *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.

The remaining columns of Table 2.5 report effects on each separate metric. The effect of quarantine on IPV is generalized. For all 3 metrics, the point estimates have the expected signs and all coefficients are statistically significant. The size differences are important: focusing on mean effects, we see from Table 2.5 that emotional violence is 12 percent higher, sexual violence is 35 percent higher, and physical violence is 23 percent higher for women whose partners are also in quarantine.

Comparing our estimates to those available in the literature, the magnitude of these effects are larger than the increase in calls to domestic violence hotlines in 15 large U.S. cities (10.2 percent) (Leslie and Wilson, 2020) and similar to the increase in calls to the hotline in Argentina of about 32 percent (Perez-Vincent and Carreras, 2020). Perez-Vincent and Carreras (2020) also report an increase of 76 percent in calls related to emotional domestic violence and no effect on the increase in physical domestic violence. Nevertheless, the outcome variables are not easily comparable since our results are on scores and not on the number of cases.[12]

Mediation Analysis

Having established a causal link between quarantine and IPV, we now focus on the underlying mechanisms. We conduct mediation analysis in various steps. First, we identify potential mediators, that is, variables that may lie on the causal pathway between quarantine and IPV. Second, we check if these potential mediators are correlated with Quarantine. Third, we keep as mediators those potential mediators that are statistically significant to explain IPV, conditional on Quarantine. Finally, we decompose the total effect of Quarantine on IPV on the Average Direct Effect (ADE) and the Average Causal Mediation Effect (ACME). The direct

[12] Table B3 in the appendix reports interaction effects between Quarantine and pre-treatment variables. We explore differential effects by previous IPV, university education, and number of children (under the age of 18).

effects and the indirect effects sum up to the total causal effect, and therefore this decomposition assesses the relative importance of the mechanism. Aside from the assumptions needed for quarantine to have a causal interpretation in explaining IPV, the identification of causal mechanisms requires the additional assumption of sequential ignorability (Imai et al., 2011). This assumption requires that conditional on the set of pre-treatment variables available, the mediator status is ignorable—that is, there are no unobservable pre-treatment or post-treatment covariates that affect both the mediator and IPV.

The literature recognizes a series of pathways through which a pandemic could lead to increased IPV, well summarized in a recent article by Peterman et al. (2020). Many factors are related to the impact of the disease on society and unlikely to be relevant for this study because the virus had not spread much in Argentina when the lockdown was introduced. Our survey took place roughly in the seventh and eighth weeks into the lockdown, when the total death toll from COVID-19 went from 300 to 400 people and total reported cases from 6,000 to 9,000 people. The number of reported cases was likely lower than the number of actual cases because very few tests were run at the time. However, they still indicate what the public perceived as a signal of a health threat. The effect we find is more likely to result from the actual lockdown rather than the pandemic per se. The effect could not even come from the stress for the future of the lockdown or the future of the pandemic, since after eight weeks of strict lockdown, the population thought that the risk of a massive spread was low and that normal activity could return soon.

Peterman et al. (2020) document three channels in which the lockdown could affect intimate partner violence. The first pathway is coming from the *inability to escape* an abusive partner during lockdowns, which could lead to more opportunities for the partner to engage in violent behavior. Second, quarantines lead to *social isolation*, which can contribute through at least two channels. On one hand, social isolation has been associated with anxiety and various mental health disorders, all potential triggers of violence or of behaviors that might be related to this violence, such as increased alcohol consumption. On the other hand, isolation limits the occasional monitoring other people can do of potentially violent behavior. The third pathway through which lockdowns typically affect IPV, perhaps the most salient in the literature, is by increasing *economic* insecurity and creating poverty-related stress related to a fall in income, sudden unemployment, or increased economic uncertainty. Our empirical specification allows us to investigate some of these potential underlying channels. We look into the first pathway using our estimation of time spent with the partner. It is less clear how to

explore the problem of social isolation, still we have two elements that are arguably related: alcohol and drug consumption (as the context of isolation could have triggered abuse) and members living in the household (as the lockdown might have decreased the number of people in the house, reducing the chance of monitoring). We study the economic pathway with the reported information on family income. We start the mediation analysis by estimating the following equation:

$$M_i = \alpha_2 + \beta_2\, Quarantine_i + \mu_2\, Y\text{-}before_i + \gamma_2\, X_i + \varepsilon_{2i} \quad (2)$$

where the dependent variables (or potential mediating variables, Mi) are the set of secondary outcomes described in section 2: the change in the average number of hours per day couple spend together, the decrease in alcohol and drug consumption, the change in the number of household members, and the decrease in income (family and partner's).

Table 2.6 reports results on the impact of quarantine on these secondary outcomes. As observed in column (1), the number of hours that couples spent together increased by about 3.8 hours when the partner is in quarantine. Columns (2) and (3) show there is no effect on alcohol and drug consumption and in the number of household members. Columns (4) and (5) show that quarantine is associated with a decrease in both family income and partner's income.

Table 2.6. Potential Mechanisms

	Change in hours w/partner	Increase in alcohol and drug consumption	Change in household members	Drop in family income	Drop in partner's income
	(1)	(2)	(3)	(4)	(5)
Quarantine	3.789***	0.004	-0.007	0.240***	0.266***
	(0.257)	(0.011)	(0.018)	(0.031)	(0.029)
Observations	1,502	1,502	1,502	1,502	1,502

Notes: Robust standard errors are shown in parentheses. All models are estimated using ordinary least squares and control for the set of pre-quarantine variables listed in Tables 2.2, 2.3, and 2.4. *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.

Results in Table 2.6 suggest that the effect of quarantine on IPV may be explained by the effect the quarantine has on increasing the time couples spend together and on decreasing income. The next step is to estimate the following equation:

$$Y_{1i} = \alpha_3 + \beta_3\, Quarantine_i + \delta M_i + \mu_3\, Y_{0i} + \gamma_3\, X_i + \varepsilon_{3i} \quad (3)$$

where M_i is the vector of candidate mediators that "survive" the previous test (change in hours spent together, drop in family income, and drop in partner's income). OLS estimates of

equation (3) are shown in 2.Table 7. From the set of candidates to be mediating variables, only the change in hours spent together is statistically significant.

Table 2.7. Mediating Analysis

	Dependent variable: IPV			
	(1)	(2)	(3)	(4)
Quarantine	0.542**	0.754**	0.754**	0.555*
	(0.260)	(0.338)	(0.341)	(0.296)
Change in hours w/partner	0.056***			0.058**
	(0.017)			(0.021)
Drop in family income		-0.006		-0.099
		(0.219)		(0.200)
Drop in partner's income			-0.003	0.013
			(0.228)	(0.192)
Observations	1,502	1,502	1,502	1,502

Notes: Robust standard errors are shown in parentheses. IPV is the principal component of emotional, sexual and physical violence. All models are estimated using ordinary least squares and control for the set of pre-quarantine variables listed in Tables 2, 3, and 4. *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.

The mediation analysis suggests that the change in hours spent together mediates the effect of quarantine on IPV. As explained above, the underlying assumption is that there are no unobservable pre-treatment or post-treatment covariates that affect both the change in hours spent together and IPV.

To complete the mediating analysis, we now proceed to estimate the ACME (the indirect effect through the change in the number of hours spent together) and the ADE (the average direct effect, which represents all the other mechanisms not contemplated in our analysis). To estimate the ACME, we generate two sets of predictions for the mediator, one under the treatment and the other under the control. The ACME is then computed as the average difference between the outcome predictions using the two different values of the mediator.

Results from mediation analysis, using the package mediation in R, are reported in Table 8. The total effect for Quarantine is 0.749 (the effect we find when there was no mediator in our model, see column (1) in Table 2.5). The total effect is statistically significant. The direct effect for Quarantine is 0.542 which, while still significant, is smaller than the total effect. The indirect effect of Quarantine that passes through the change in the number of hours spent together is 0.207, significant at the 1 percent level, and accounts for about 28 percent of the total effect.

Table 2.8. Estimates of Mediating Effects

Effect	Mean	95% confidence interval		p-value
Average Causal Mediating Effect (ACME)	0.207	0.092	0.327	0.002
Direct effect	0.542	0.048	1.029	0.028
Total effect	0.749	0.207	1.293	0.012
% of total effect mediated	0.276	0.155	0.652	0.010

Notes: Estimates computed using the command *mediation* in R (1,000 simulations).

2.4. Final Remarks

Since the start of the COVID-19 pandemic, many governments around the world have asked individuals to self-isolate to limit the spread of the virus, preserve lives, and minimize the burden on healthcare services. Children were sent home from school, workers were asked to work from home or not able to work at all, and millions of people were placed under quarantine. In this context, it is crucial for policymakers to understand the multiple impacts these policies have on societies. Even though it is mostly accepted that quarantines have benefits in terms of saving lives from the virus, there is increasing concern about their collateral impacts. A good part of the debate has concentrated on the economic versus health costs of continuing with the lockdowns (e.g., Eichenbaum et al., 2020; Lin and Meissner, 2020; Pindyck, 2020). This chapter provides important input to policymakers about one of the important *social* costs of quarantines. We exploit the plausibly exogenous variability in the individual exposure to quarantine declared in Argentina to explore the effect on intimate partner violence for women that were placed in quarantine in a context where the actual threat of the disease was minimal. We find that when these women's partner is also placed under quarantine there is indeed a higher prevalence of IPV in all its forms (emotional, sexual, and physical). We also find that quarantined couples end up spending more time together, which might ignite tension or simply give more opportunities for potential abusers to engage in violence. This suggests additional targeted policies may be needed to avoid exacerbating the extent of domestic violence occurrence.

References

Adams-Prassl, A., T. Boneva, M. Golin, and C. Rauh. 2020. Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys. *Institute of Labor Economics (IZA) Discussion Papers*, No. 13183. Bonn, Germany: IZA.

Aizer, A. 2010. The Gender Wage Gap and Domestic Violence. *American Economic Review* 100(4): 1847–59.

Aizer, A. 2011. Poverty, Violence, and Health: The Impact of Domestic Violence during Pregnancy on Newborn Health. *Journal of Human Resources* 46(3): 518–38.

Alon, T. M., M. Doepke, J. Olmstead-Rumsey, and M. Tertilt. 2020. The Impact of Covid-19 on Gender Equality. Working Paper No. w269470. Cambridge, MA: National Bureau of Economic Research.

Anderberg, D., H. Rainer, J. Wadsworth, and T. Wilson. 2016. Unemployment and Domestic Violence: Theory and Evidence. *The Economic Journal* 126(597): 1947–79.

Angelucci, M. 2008. Love on the Rocks: Domestic Violence and Alcohol Abuse in Rural Mexico. *B. E. Journal of Economic Analysis & Policy* 8(1): 1–43.

Basu, B. and F. Famoye. 2010. Domestic Violence against Women, and their Economic Dependence: A Count Data Analysis. *Review of Political Economy* 16(4): 457–72.

Bellemare, M. F. and Wichman, C. J. (2020). Elasticities and the inverse hyperbolic sine transformation. *Oxford Bulletin of Economics and Statistics* 82(1): 50-61.

Bhalotra, S., U. Kambhampati, S. Rawlings, and Z. Siddique. 2020. Intimate Partner Violence: The Influence of Job Opportunities for Men and Women. Policy Research Working Paper No. 9118. Washington, DC: The World Bank.

Bobonis, G. J., M. González-Brenes, and R. Castro. 2013. Public Transfers and Domestic Violence: The Roles of Private Information and Spousal Control. *American Economic Journal: Economic Policy* 5(1): 179–205.

Bowlus, A. J. and S. Seitz. 2006. Domestic Violence, Employment, and Divorce. *International Economic Review* 47(4): 1113–49.

Brooks, S. K., R.K. Webster, L.E. Smith, L. Woodland, S. Wessely, N. Greenberg, and G.J. Rubin. 2020. The Psychological Impact of Quarantine and How to Reduce It: Rapid Review of the Evidence. *The Lancet* 395(10227): 912–20.

Campedelli, G. M., A. Aziani, and S. Favarin. 2020. Exploring the Effect of 2019-nCoV Containment Policies on Crime: The Case of Los Angeles. *OSF Preprints. doi:10.31219/osf.io/gcpq8.*

Card, D. and G. B. Dahl. 2011. Family Violence and Football: The Effect of Unexpected Emotional Cues on Violent Behavior. *Quarterly Journal of Economics* 126(1): 103–43.

Devries, K. M., J. C. Child, L. J. Bacchus, J. Mak, G. Falder, K. Graham, C. Watts, L. Heise. 2014. Intimate Partner Violence Victimization and Alcohol Consumption in Women: A Systematic Review and Meta-analysis. *Addiction* 109:379–91.

Devries, K. M., J. Y. Mak, C. Garcia-Moreno, M. Petzold, J. C. Child, G. Falder, G. et al. 2013. The Global Prevalence of Intimate Partner Violence against Women. *Science*, 340(6140):1527–8.

Dugan, L., D. S. Nagin, and R. Rosenfeld. 1999. Explaining the Decline in Intimate Partner Homicide: The Effects of Changing Domesticity, Women's Status, and Domestic Violence Resources. *Homicide Studies* 3(3): 187–214.

Eichenbaum, M. S., S. Rebelo, and M. Trabandt. 2020. The Macroeconomics of Epidemics. *MIMEO*. Evanston, IL: Kellogg School of Management, Northwestern University. Available from: https://www.kellogg.northwestern.edu/faculty/rebelo/htm/epidemics.pdf.

Farmer, A. and J. Tiefenthaler. 1997. An Economic Analysis of Domestic Violence. *Review of Social Economy* 55(3): 337–58.

Gibbons, M. A., T. E. Murphy, and M. A. Rossi. Confinement and Intimate Partner Violence: The Short-Term Effect of COVID-19. Washington, DC: Inter-American Development Bank.

Gibbs, A., K. Dunkle, L. Ramsoomar, S. Willan, N.J. Shai, S. Chatterji, R. Naved, and R. Jewkes. 2020. New Learnings on Drivers of Men's Physical and/or Sexual Violence against their Female Partners, and Women's Experiences of This, and the Implications for Prevention Interventions. *Global Health Action* 13(1).

Gladwell, M. 2000. *The Tipping Point: How Little Things Can Make a Big Difference*. New York, NY: Little Brown.

Halvorsen, R. and R. Palmquist. 1980. The Interpretation of Dummy Variables in Semilogarithmic Equations. *American Economic Review* 70(3): 474–75.

Heise, L. 2011. What Works to Prevent Partner Violence: An Evidence Overview. London, UK: STRIVE.

Jewkes, R. 2002. Intimate Partner Violence: Causes and Prevention. *Lancet* 359: 1423–29.

Kennedy, P. E. 1981. Estimation with Correctly Interpreted Dummy Variables in Semilogarithmic Equations [the interpretation of dummy variables in semilogarithmic equations]. *American Economic Review 71*(4): 801.

Kessler, G., N. Bermúdez, G. Binstock, M. Cerrutti, M. Pecheny, J. I. Piovani, and A. Wilkis. 2020. *Relevamiento del impacto social de las medidas del Aislamiento dispuestas por el PEN* (Comisión de Ciencias Sociales de la Unidad Coronavirus COVID-19 del Ministerio de Ciencia y Tecnología de la Nación).

Leslie, E. and R. Wilson. 2020. Sheltering in Place and Domestic Violence: Evidence from Calls for Service during COVID-19. *MIMEO*, URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3600646.

Lin, Z. and C. M. Meissner. 2020. Health vs. Wealth? Public Health Policies and the Economy during Covid-19. Working Paper No. 27099. Cambridge, MA: National Bureau of Economic Research.

Munyo, I. and M. A. Rossi. 2013. Frustration, Euphoria, and Violent Crime. *Journal of Economic Behavior & Organization* 89: 136–42.

--------. 2015. The Effects of Real Exchange Rate Fluctuations on the Gender Wage Gap and Domestic Violence in Uruguay. *Working Paper Series* No. IDB-WP-618. Washington, DC: Inter-American Development Bank.

Papageorge, N. W., G. C. Pauley, M. Cohen, T. E. Wilson, B. H. Hamilton, and R. A. Pollak. 2019. Health, Human Capital and Domestic Violence. Working Paper No. w22887. Cambridge, MA: National Bureau of Economic Research.

Perez-Vincent, S. and E. Carreras. 2020. Evidence from a Domestic Violence Hotline in Argentina. Washington, DC: Inter-American Development Bank.

Peterman, A., A. Potts, M. O'Donnell, K. Thompson, N. Shah, S. Oertelt-Prigione, and N. van Gelder. 2020. Pandemics and Violence against Women and Children. Working Paper 528. Washington, DC: Center for Global Development.

Pindyck, R. S. 2020. COVID-19 and the Welfare Effects of Reducing Contagion. Working Paper No. 27121. Cambridge, MA: National Bureau of Economic Research.

Pronyk, P. M., J. R. Hargreaves, J. C. Kim, L. A. Morison, G. Phetla, C. Watts, J. Busza, and J. D. Porter. 2006. Effect of a Structural Intervention for the Prevention of Intimate-Partner Violence and HIV in Rural South Africa: A Cluster Randomised Trial. *The Lancet* 368(9551):1973–83.

Sanga, S. and J. McCrary. 2020. The Impact of the Coronavirus Lockdown on Domestic Violence. Available at SSRN 3612491.

Schelling, T. C. 1969. Models of Segregation. *American Economic Review* 59(2): 488–93.

--------. 1978. *Micromotives and Macrobehavior*. New York, NY: Norton.

UN Women. 2020. COVID-19 and Ending Violence against Women and Girls. New York, NY: UN Women. Accessed on May 31, 2020, from: https://www.unwomen.org/en/digital-library/publications/2020/04/issue-brief-covid-19-and-ending-violence-against-women-and-girls.

UNDP (United Nations Development Programme). 2015. Assessing Sexual and Gender-Based Violence during the Ebola Crisis in Sierra Leone. New York, NY: UNDP.

Wenham, C., J. Smith, and R. Smith. 2020. COVID-19: The Gendered Impacts of the Outbreak. *Lancet* 395(10227): 846–48.

WHO (World Health Organization). 2013. Global and Regional Estimates of Violence against Women: Prevalence and Health Effects of Intimate Partner Violence and Non-partner Sexual Violence. Geneva, Switzerland: WHO.

Appendix A

Evidence from a Domestic Violence Hotline in Argentina

Table A1. Total Calls to Línea 137 by Type of Violence Reported

	2017		2018		2019		2020			
							Pre-lockdown		Post-lockdown	
Violence type	%	#	%	#	%	#	%	#	%	#
Physical	57.4	5671	57.4	4623	52.5	3810	50.2	659	43.4	366
Psychological	20.1	1990	23.2	1866	27.3	1985	32.5	427	40.9	345
Other types	15.2	1505	15.4	1242	9.5	687	9.6	126	7.5	63
Not domestic violence	7.3	722	4.0	323	10.7	779	7.6	100	8.3	70
Total		9888		8054		7261		1312		844

Notes: Authors' calculations based on data from calls to Línea 137. Other types include sexual and economic violence, among others. Data was downloaded from the official data repository of Argentina's Ministry of Justice and Human Rights (http://datos.jus.gob.ar, accessed May 30, 2020).

Table A2. Total Calls to Línea 137 by Victim's Gender

	2017		2018		2019		2020			
							Pre-lockdown		Post-lockdown	
Victim's gender	%	#	%	#	%	#	%	#	%	#
Female	72.0	7120	73.5	5918	71.3	5177	74.2	973	76.7	647
Male	6.5	642	8.4	675	9.6	700	10.0	131	9.5	80
DNK/NA	21.4	2119	18.1	1455	18.9	1375	15.8	207	13.9	117
Transgender	0.1	7	0.1	6	0.1	9	0.1	1	0.0	0
Total		9888		8054		7261		1312		844

Notes: Authors' calculations based on data from calls to Línea 137. Data was downloaded from the official data repository of Argentina's Ministry of Justice and Human Rights (http://datos.jus.gob.ar, accessed May 30, 2020).

Table A3. Total Calls to Línea 137 by Caller

	2017		2018		2019		2020			
							Pre-lockdown		Post-lockdown	
Caller	%	#	%	#	%	#	%	#	%	#
Victim	25	2479	23	1862	26	1911	31	403	47	396
Police station	37	3662	39	3152	33	2414	28	367	9	75
Victim's family	7	667	9	764	11	794	14	189	14	114
Neighbor	4	366	4	301	4	278	5	70	8	71
Other institutions	4	412	4	299	3	218	2	30	2	20
Other	23	2302	21	1676	23	1646	19	253	20	168
Total		9888		8054		7261		1312		844

Notes: Authors' calculations based on data from calls to Línea 137. Data was downloaded from the official data repository of Argentina's Ministry of Justice and Human Rights (http://datos.jus.gob.ar, accessed May 30, 2020).

Table A4. Placebo Treatment during Same Period in 2019

	Before vs. after (Model 1)		Diff-in-diff (Model 2)	
	IHS (total calls)	Total calls	IHS (total calls)	Total calls
Placebo	−0.111**	−2.540**	−0.0261	−0.347
	(0.0496)	(1.038)	(0.0598)	(1.394)
% Change	-11%		-3%	
Day of week FE	*Yes*	*Yes*	*Yes*	*Yes*
Week of year FE	*No*	*No*	*Yes*	*Yes*
Year FE	*No*	*No*	*Yes*	*Yes*
Observations	120	120	360	360
R-squared	0.272	0.318	0.489	0.526

Notes: Percentage change estimated following Halvorsen and Palmquist (1980) and using the small-sample bias correction suggested by Kennedy (1981), as explained in Bellemare & Wichman 2019
Standard deviations are shown in parentheses. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level. Línea 137 data for City of Buenos Aires. Model 1 is estimated using data from Jan 1 to Mar 19, 2020. Model 2 is estimated using data from Jan 1 to Mar 19 for the years 2017, 2018, 2019, and 2020.

Table A5. Placebo Treatment before the Lockdown

	Before vs. after (Model 1)		Diff-in-diff (Model 2)	
	IHS (total calls)	**Total calls**	**IHS (total calls)**	**Total calls**
Placebo	-0.0361	-0.658	0.0804	1.874
	(0.0841)	(1.312)	(0.0783)	(1.493)
% Change	-4%		8%	
Day of week FE	*Yes*	*Yes*	*Yes*	*Yes*
Week of year FE	*No*	*No*	*Yes*	*Yes*
Year FE	*No*	*No*	*Yes*	*Yes*
Observations	78	78	312	312
R-squared	0.116	0.131	0.605	0.636

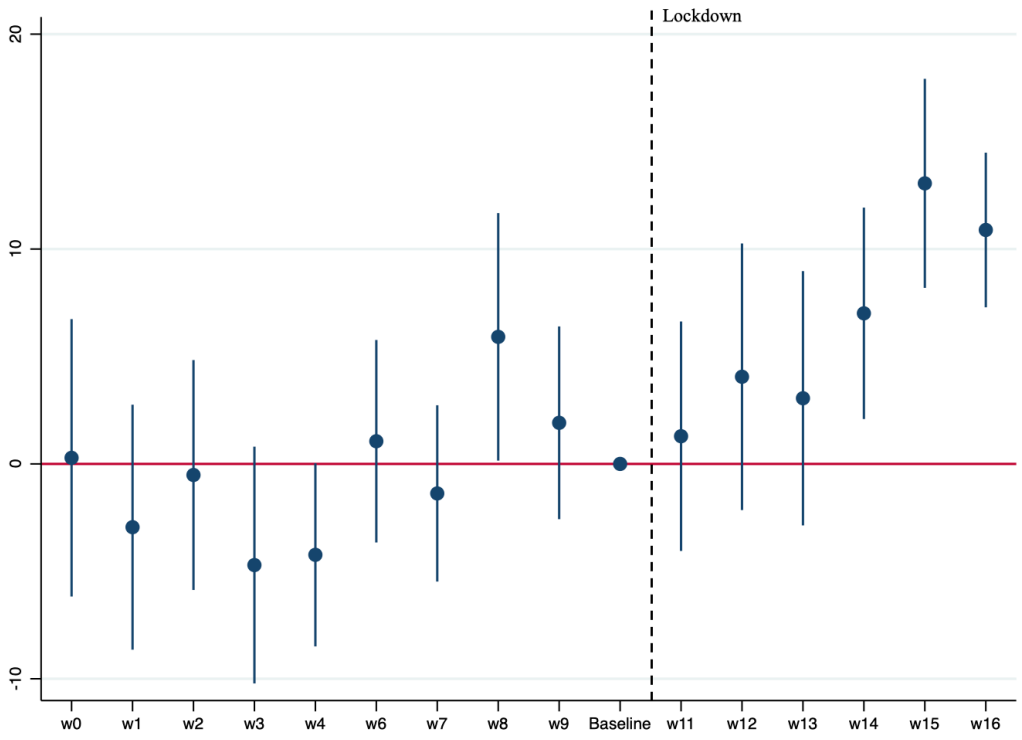
Notes: Percentage change estimated following Halvorsen and Palmquist (1980) and using the small-sample bias correction suggested by Kennedy (1981), as explained in Bellemare & Wichman 2019
Standard deviations are shown in parentheses. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level. Línea 137 data for City of Buenos Aires. Model 1 is estimated using data from Jan 1 to Mar 19, 2020. Model 2 is estimated using data from Jan 1 to Mar 19 for the years 2017, 2018, 2019, and 2020.

Table A6. Only Calls Reporting Incidents with a Female Victim

	Before vs. after (model 1)		Diff-in-diff (model 2)	
	IHS (calls)	Calls	IHS (calls)	Calls
	Overall calls			
Lockdown	0.211***	3.089***	0.283***	4.413***
	(0.0665)	(0.894)	(0.0761)	(1.083)
% Change	23%		32%	
Observations	121	121	481	481
R-squared	0.157	0.18	0.432	0.458
	Psychological violence			
Lockdown	0.433***	2.516***	0.543***	3.076***
	(0.113)	(0.573)	(0.135)	(0.619)
% Change	53%		71%	
Observations	121	121	481	481
R-squared	0.213	0.235	0.237	0.263
	Physical violence			
Lockdown	0.0306	0.308	0.0651	0.765
	(0.0917)	(0.564)	(0.102)	(0.755)
% Change	3%		6%	
Observations	121	121	481	481
R-squared	0.082	0.109	0.444	0.465
Day of week FE	Yes	Yes	Yes	Yes
Week of year FE	No	No	Yes	Yes
Year FE	No	No	Yes	Yes

Notes: Percentage change estimated following Halvorsen and Palmquist (1980) and using the small-sample bias correction suggested by Kennedy (1981), as explained in Bellemare & Wichman 2019 Standard deviations are shown in parentheses. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level. Línea 137 data for City of Buenos Aires. Model 1 is estimated using data from Jan 1 to Mar 19, 2020. Model 2 is estimated using data from Jan 1 to Mar 19 for the years 2017, 2018, 2019, and 2020.

Figure A1. Effects of the Lockdown on Calls to Línea 137: Event Study



Notes: Graph shows OLS estimates and 5 percent confidence intervals for β_p coefficients for event study model.

Appendix B

Confinement and Intimate Partner Violence: The Short-Term Effect of COVID-19

Survey

- How old are you?
- What is your gender?
- What is your marital status?
- Are you in a relationship with a man?
- How long have you lived with your partner?
- What is the highest educational level you have reached?
- How old is your partner?
- What is the highest educational level your partner has reached?
- How many rooms does your home have? (**excluding** kitchen, bathroom, hallways, laundry room, garage)
- Where do you live?
- How many people live in your household?

According to your work activity, did you have to comply with the social, preventive, and compulsory isolation and the prohibition to move during quarantine in accordance with Decree of Necessity and Urgency 297/2020?

- Have you had a drop in your income during quarantine?
- If yes, how much less income have you had during quarantine?

According to your partner's work activity, did **YOUR PARTNER** have to comply with the social, preventive, and compulsory isolation and the prohibition to move during quarantine in accordance with Decree of Necessity and Urgency 297/2020?

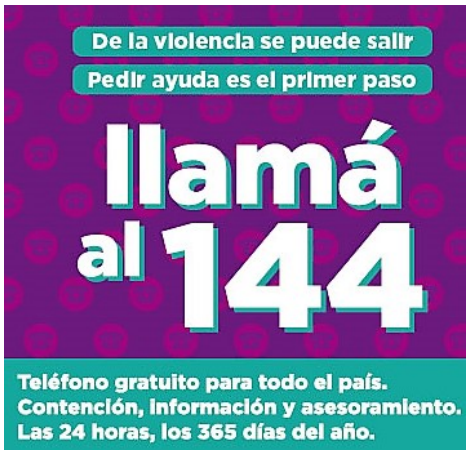
- HAS YOUR PARTNER suffered a drop in his income during quarantine?
- If yes, how much less income has your partner had during quarantine?

- Was the number of household members just before quarantine started greater, less than, or equal to today?
- Indicate the number of children you have in each age range (0–5 years, 6–12 years, and 12–17 years).

- How many hours a day do you spend with your partner on weekdays (while you are awake)? (Before quarantine, during quarantine).

You will be asked a series of questions and we ask you to answer them with complete confidence and **sincerity**. Your answers are completely **anonymous**. Answer if these situations have happened to you and/or your children with your **current partner**.

- Has your partner insulted you?
- Has your partner belittled or humiliated you (for example, made you feel bad about yourself, calling you stupid or useless, or telling you are ugly or fat)/
- Does your partner become jealous or upset if you communicate with another man, friends, or family?
- Has your partner followed, watched, or checked your personal items (for example, the cell phone)?
- Does your partner consume alcohol and/or drugs to excess?
- Does your partner look at you in a way that scares you or act in a way that causes you fear?
- Has your partner threatened to hurt you or someone you care about?
- Has your partner tried to strangle you?
- Has your partner slapped, pushed, or cornered you, or pulled your hair?
- Has your partner hit you with your fist, kicked you, dragged you, or beaten you?
- Has your partner threatened to use or used a gun, knife, fire, or other weapon against you?
- Out of fear of your partner, did you have sex without wanting it?
- In a relationship with your partner, were you forcibly forced to have sex when you didn't want to?



(Telephone line 144 provides telephone attention for victims of gender violence)
I have read the information on the hotline that provides care, containment, and telephone advice in situations of gender-based violence.

Full List of Exempted Activities

1. Health Personnel, Security Forces, Armed Forces, migratory activity, national meteorological service, firefighters, and air traffic control.
2. Senior authorities of the national, provincial, municipal, and the Autonomous City of Buenos Aires governments; Workers of the national, provincial, municipal, and the Autonomous City of Buenos Aires public sector, appointed to guarantee essential activities required by the respective authorities.
3. Justice-service personnel on duty, as established by the competent authorities.
4. Foreign diplomatic and consular personnel authorized by the Argentine Government, in the framework of the Vienna Convention on Diplomatic Relations and the Vienna Convention of 1963 on Consular Relations, and the personnel of international organizations accredited to the Argentine Government, of the Red Cross and White Helmets.
5. Persons who must assist others with disabilities; family members who need assistance; elderly persons; children and adolescents.
6. People who must attend to a situation of force majeure.
7. People affected by the performance of funeral services, burials, and cremations. Within this framework, activities that involve gathering of people are not authorized.
8. Persons in charge of school and community kitchens.
9. Staff working in audiovisual, radio, and graphic communication services.
10. Staff involved in public construction work.
11. Wholesale and retail supermarkets and local shops. Pharmacies. Hardware stores. Vets. Provision of gas.
12. Food industries, their productive chain, and inputs; personal hygiene and cleaning; medical equipment supplies, medicines, vaccines, and other health inputs.
13. Activities related to agricultural and fisheries production, distribution, and commercialization.
14. Telecommunications, home, and mobile internet and digital services activities.

15. Activities linked to foreign trade that cannot be postponed.
16. Collection, transport and treatment of solid urban, hazardous and pathogenic waste.
17. Maintenance of basic services (water, electricity, gas, communications, etc.) and emergency care.
18. Public passenger transport, transport of goods, oil, fuel and Liquid Petroleum Gas.
19. Home delivery of food, medicines, hygiene and cleaning products, and other supplies of need.
20. Laundry services.
21. Postal and parcel delivery services.
22. Essential surveillance, cleaning, and guard services.
23. Minimum guards to ensure the operation and maintenance of oil and gas reservoirs, oil and gas treatment and/or refining, transport and distribution of electrical energy, fuels, oil and gas, fuel dispensing stations, and electric power generators.
24. *Casa de Moneda* (Mint, Engraving, and Printing), ATM services, cash transport, and all those activities that Argentina's Central Bank provides essential to guarantee the functioning of the payment system.

Table B2. Representativeness: Province of Residence

	Population proportion	Sample proportion	Difference
Buenos Aires province	0.390	0.511	−0.121***
Buenos Aires city	0.072	0.156	−0.084***
Catamarca	0.009	0.005	0.004**
Chaco	0.026	0.015	0.011***
Chubut	0.013	0.010	0.003
Cordoba	0.083	0.049	0.034***
Corrientes	0.025	0.009	0.016***
Entre Rios	0.031	0.021	0.010***
Formosa	0.013	0.005	0.008***
Jujuy	0.017	0.006	0.011***
La Pampa	0.008	0.007	0.001
La Rioja	0.008	0.006	0.002
Mendoza	0.043	0.023	0.020***
Misiones	0.028	0.019	0.009***
Neuquen	0.014	0.011	0.003
Rio Negro	0.016	0.020	−0.004
Salta	0.030	0.023	0.007*
San Juan	0.017	0.007	0.010***
San Luis	0.011	0.010	0.001
Santa Cruz	0.007	0.007	0.000
Santa Fe	0.080	0.057	0.023***
Santiago del Estero	0.022	0.006	0.016***
Tierra del Fuego	0.003	0.005	−0.002
Tucuman	0.036	0.012	0.024***

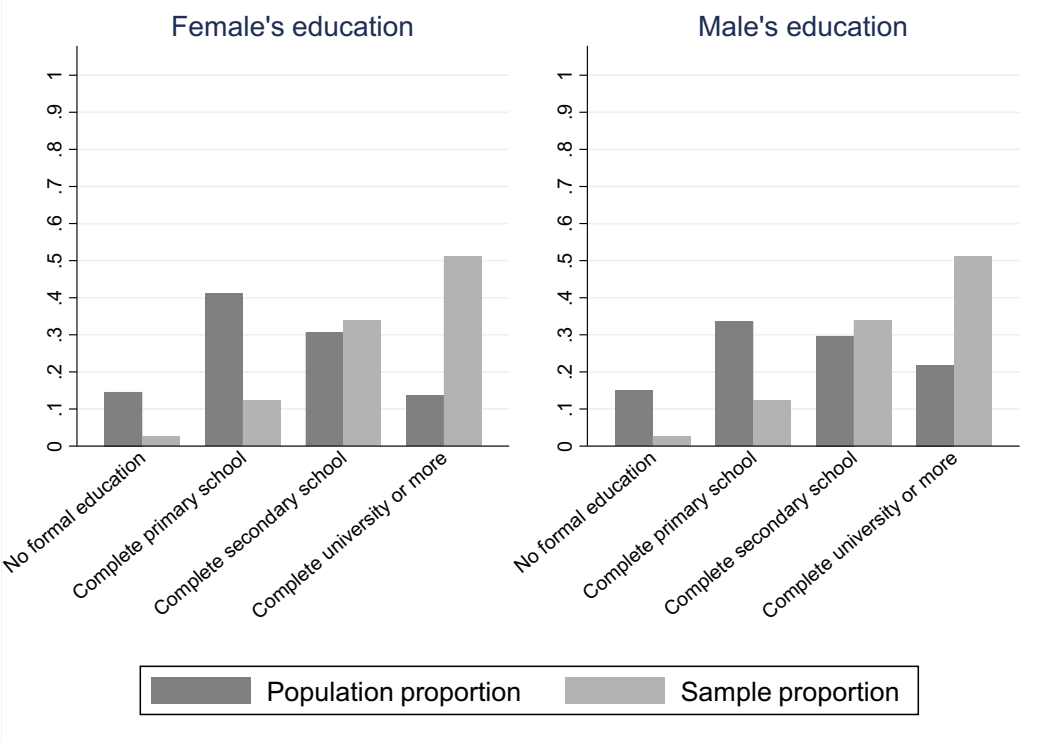
Notes: Data obtained from Argentine Census 2010. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level.

Table B3. Interaction Effects

	IPV after	IPV after	IPV after	IPV after
Quarantine	0.527**	1.125***	0.514*	0.795**
	(0.215)	(0.342)	(0.306)	(0.389)
Quarantine x IPV before	0.046			0.040
	(0.059)			(0.060)
Quarantine x university education		-0.825*		-0.709*
		(0.429)		(0.416)
Quarantine x number of children			0.174	0.088
(under 18 years old)			(0.186)	(0.193)
Observations	1,502	1,502	1,502	1,502

Notes: Standard errors clustered at the province-of-residence level are shown in parentheses. All models are estimated using OLS and control for IPV before, pre-quarantine province of residence, and pre-quarantine socioeconomic characteristics. *Significant at the 10 percent level. **Significant at the 5 percent level. ***Significant at the 1 percent level.

Figure B1. Representativeness: Maximum Education Level



Notes: Data obtained from Argentine Census 2010.