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DISCUSSION PAPER SERIES

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# Hit Where It Hurts: Healthcare Access and Intimate Partner Violence

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# ABSTRACT

## Hit Where It Hurts: Healthcare Access and Intimate Partner Violence*

This paper investigates the causal link between healthcare access and the help-seeking behavior of intimate partner violence (IPV) victims. Healthcare access can be an important entry point for screening or detecting IPV. Doctors are required by law to report any injuries to a judge if they suspect they are the result of a crime and can inform and direct victims to IPV services. We exploit the 2012 reform in Spain that removed access to the public healthcare system for undocumented immigrants. We use court reports and protection order requests from the Judicial Branch of the Spanish government to perform a difference-in-differences approach, comparing the help-seeking behavior of foreign and Spanish women before and after the reform. We find that the impact of the reform was immediate; foreign women's IPV reporting and application for protection orders decreased by 12%. This effect is entirely driven by regions with stronger enforcement of the reform. We show suggestive evidence that the reform left the underlying levels of IPV incidence unaffected. Instead, the results are driven by a reduction in injury reports by medical centers. Our findings are important given the increase in migration flows globally as well as for current debates on granting/limiting access to healthcare for marginalized groups.

**JEL Classification:** I100, I120, I140, I31

**Keywords:** healthcare access, intimate partner violence, reporting, undocumented immigrants

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# 1 Introduction

One out of three women worldwide have experienced intimate partner violence (IPV)[1] at some point in their life. IPV is a complex multi-factorial social problem with significant health consequences and economic costs. It is a major public health concern and an underlying cause of gender inequality globally (WHO, 2013). Although it is difficult to quantify, IPV is present worldwide, with an estimated lifetime prevalence ranging from 15% to 71% (Garcia-Moreno et al., 2006). In the EU context,Barbier et al. (2020) found that the lifetime prevalence of IPV is 51.7%. IPV has lasting consequences both on the victims' welfare as well as on society as a whole. Among many other adverse outcomes, victims of IPV experience reductions in employment and earnings (Lloyd and Taluc, 1999; Browne et al., 1999) and have worse physical and psychological health (WHO, 2013). IPV also increases the use of healthcare services, such as hospitalization, emergency care, and consumption of sedatives and antidepressants (Alonso-Borrego and Carrasco, 2022), and has been proven to have intergenerational impacts on children (Aizer, 2011).

Because of the high prevalence and far-reaching consequences of IPV, many Governments have placed it at the top of their policy agenda. However, the effectiveness of IPV-reduction policies is normally challenged by the high share of underreported cases (Carrell and Hoekstra, 2012). For example, in the EU, 66% of women did not report the most serious partner violence incident they have experienced to the police or any other organization (European Union Agency for Fundamental Rights, 2014). Similarly, in Spain, only one out of five IPV episodes are reported to the police (Spanish Ministry for Equality, 2019). Therefore, getting sound evidence on the type of policies that are more effective at promoting and facilitating the reporting of IPV is of fundamental importance in the fight against IPV incidence.

In this paper, we contribute to this aim by providing causal evidence on the impact of restricting access to the public healthcare system on the help-seeking behavior of IPV victims. To identify these effects, we exploit a reform introduced in Spain in 2012 that imposed restrictions on healthcare access to undocumented immigrants. Before the reform, access to the Spanish healthcare system was universal; immigrants had access to the healthcare system in the same conditions as the native population through an easy-to-get healthcare card. When the reform was passed in 2012,

[1] In the Spanish judicial system, intimate partner violence (*violencia contra la mujer* or *violencia de género*, in Spanish) is defined as any violence that, as a manifestation of discrimination, is exerted on women by those who are or have been their spouses or by those who are or have been linked to them by similar affective relationships, even without living together. It includes any act of physical and psychological violence, including attacks on sexual freedom, threats, coercion, or arbitrary deprivation of liberty. It is also considered IPV, the violence that is exercised on the women's relatives or children with the objective of causing injury or harm to the women (Ley Orgánica 1/2004, de 28 de Diciembre, de Medidas de Protección Integral contra la Violencia de Género).

healthcare cards of the immigrant population without a legal residence permit were automatically canceled, preventing them from accessing the services of the public healthcare system in Spain. This reform is important as healthcare centers play an important role in detecting and reporting IPV. First, victims usually feel more comfortable disclosing IPV to healthcare professionals, increasing access to a range of IPV services channeled through the social security system (García-Moreno et al., 2015). Secondly, doctors and nurses in medical centers are subject to protocols that make it compulsory for them to submit an injury report to the court when they see evidence of a potential IPV case which, in turn, will initiate an IPV trial (Goicolea et al., 2013). In fact, 12% of all IPV reports in 2011 were initiated through a medical injury report. Finally, medical checks might be an opportunity for some specific groups of immigrant women to report the violence to individuals outside their communities and, therefore, avoid reprisal.

We perform a difference-in-differences model to evaluate the change in help-seeking behavior of foreign IPV victims in Spain compared to native Spanish victims before and after the reform. As a proxy for help-seeking behavior, we use the number of IPV cases registered to the court and the number of applications for protection orders filled. An IPV report initiates legal criminal proceedings that could lead to the perpetrator's conviction. In addition, if the victim perceives an imminent risk for herself or her children, she can apply for a protection order (which could include a restriction order, prohibition of communication, provisional detention, or parental custody, among others). A protection order (or a condemnatory sentence) establishes the status of the victim of IPV from the legal point of view, and, from that moment onwards, the victims have access to the rights and benefits recognized by the law (free legal assistance, social and labor insertion programs, financial assistance, access to protected housing, among others).

Our results show a reduction of 7 IPV reports for every 10,000 foreign women, compared with Spanish women, after access to healthcare was withdrawn. This constitutes a reduction of 12.67% compared with the pre-reform mean for foreign women. We also find that the reform reduced the number of applications for protection orders by 1.8 for every 10,000 foreign women (12.45%).

In Spain, healthcare services are entirely decentralized to regional health authorities. Consequently, health authorities of the 17 regions implemented the central government's healthcare reform to different extents. Six regions (Madrid, Murcia, Balearic Islands, Castile-Leon, La Rioja, and Castile-La Mancha) implemented the law with minimal modifications. In contrast, four other regions organized alternative healthcare programs for irregular immigrants when the national healthcare reform was implemented (Asturias, Basque Country, Galizia, and Catalonia). The remaining seven regions arranged alternative measures but implemented them at different points in

time after the introduction of the national ban. We ranked regions by the date in which an alternative healthcare provision was implemented (if any) and the implementation intensity score defined by Cimas et al. (2016). We find that the reform's effect on help-seeking behavior is entirely driven by those regions that enforced the reform in a stricter manner. In particular, the reform reduced IPV reports by 16.6% and applications for protection orders by 15.9% in regions where the policy was most stringently enforced. These findings provide evidence that access to healthcare is an important factor in empowering victims of IPV to seek formal help and highlights the negative consequences of excluding sub-groups of the population from using the public healthcare system.

Finally, we explore the possible channels through which healthcare access could affect help-seeking behavior. On the one hand, healthcare access could directly affect perpetrators' behavior, impacting reporting only through the incidence. In seeking to control for the underlying incidence of IPV, insofar as possible, we use the male unemployment rate as a proxy measure. However, when we control for Spanish and foreign male unemployment rates in our main regressions, our results for help-seeking behavior do not change. We also do not find that the reform affected mortality or homicides. These results suggest that the underlying incidence of IPV is not an important factor explaining the reduction in help-seeking behavior of IPV victims.

On the other hand, healthcare could be a vital channel for disclosing IPV. Doctors are legally required to report any sign of IPV directly to the judiciary system through an injury report. They can also provide information to victims on their rights and available resources and refer them directly to specialist IPV services. We examine whether the reform changed the channel for reporting IPV, exploiting the difference in intensity of the implementation of the reform across regions. We show evidence that a reduction in injury reports by medical centers is driving the reform's main impacts on help-seeking behavior.

To our knowledge, this is the first paper showing the causal link between healthcare access and reporting of IPV. We contribute to the economic literature on the effectiveness of policies that aim at increasing the reporting of IPV. Iyer et al. (2012) found that increasing female representation in local governments in India raised the reporting of crimes against women. Increasing women's representation in police stations also seems effective at boosting reporting in the US (Miller and Segal, 2019) and India (Amaral et al., 2021). While specialized domestic violence courts or women's justice centers increase reporting and prosecutions of gender-specific crimes (Garcia-Hombrados and Martínez-Matute, 2021; Sviatschi and Trako, 2021), increasing law enforcement could lead to an unintended decrease in victim's reports (Iyengar, 2009).

We also contribute to the literature that describes the unequal consequences of IPV against minorities and, more specifically, against immigrant women. Immigrant women are more exposed to IPV primarily because they are less aware of the availability of IPV services. Similarly, they are also more prone to be subject to stronger social stigmatization. For instance, Raj and Silverman (2003) show that South Asian women residing in the US are at higher risk of IPV. However, 50.6% of them report being unaware of IPV services, and 10% indicated that they would have no social support in case of abuse. Kalunta-Crumpton (2017) examines IPV incidence for Nigerian immigrant women and reports that those who wish to leave an abusive partner are victims of solid social stigmatization. For these women, traditional methods of marital conflict resolution are preferred over formal measures, which endorse and reinforce IPV. Finally, for the Spanish case, Vives-Cases et al. (2014) show that the prevalence of IPV among immigrant women differs by country of origin. IPV prevalence is 15.57% in Ecuadorian women, 10.91% in Moroccans, and 8.58% in Romanians.

The results of our paper have important public policy implications. We document a new positive externality of the health care system as an important reporting avenue for IPV victims in difficult socio-economic circumstances. Access to the healthcare system is an important factor that reduces the "price" of reporting, encouraging abused women to seek help. With this evidence, we confirm the results of several descriptive studies that have previously highlighted the contribution of health interventions for addressing IPV (García-Moreno et al., 2015; Colombini et al., 2017; Feder et al., 2011; Ansara and Hindin, 2010; McCloskey et al., 2006), which specifically cite primary healthcare as an important entry point for screening or detecting IPV incidence.

This article proceeds as follows: Section 2 presents a brief description of the institutional setting in Spain and the 2012 healthcare reform. Section 3 describes the data and section Section 4 the empirical strategy. Section 5 present the main results on help-seeking behavior. We discuss the heterogeneity in Section 6 and potential mechanisms in Section 7. Section 8 concludes.

# 2 Institutional Setting

## 2.1 The 2012 Healthcare System Reform

Before 2012, Spain was one of only five European Union (EU) countries providing access beyond just emergency healthcare for undocumented migrants (Biffl, 2012).[2] Undocumented migrants could access the healthcare system under the same conditions as the native population; the only

[2]Other EU countries providing more than minimal emergency care include France, Italy, Portugal, and the Netherlands.

requirement was to have been registered in a municipality and to apply for a healthcare card. Registration in a municipality does not require evidence of immigration status; the procedure only requires presenting valid identification (for example, a passport or ID from any country) and proof of the individual's home address (such as a utility bill).

Most irregular immigrants registered themselves in the municipality to receive free healthcare and access to public education (González-Enríquez, 2009). The potential risks associated with being registered in the municipality are minimal, as internal controls on irregular immigrants are weak, and the Labour Inspection service is understaffed. As a result, deportation numbers are very low. According to the Ministry of Interior in Spain, 54,963 immigrants were deported between 2013 and 2017, 0.055% of the undocumented immigrant population (González-Enríquez, 2009). These numbers have remained stable, and there has been no change in deportation figures before and after the healthcare access reform. For comparison purposes, the numbers in the US were around 438,000 in 2013, or 3.98%.[3]

In 2012, the Spanish government passed the Royal Decree-Law 16/2012, which converted the Spanish National Health Service from a publicly funded universal healthcare system to one linked to the contribution-based social insurance system. The law came into effect on the 1st of September and aimed at preserving the sustainability of the public healthcare system. The new system excluded those who have never contributed to the social security administration and are not dependents of individuals contributing to the system. Thus, undocumented immigrants were the biggest group excluded from the public healthcare system due to the reform. Unlike other countries, in Spain, undocumented migrants cannot contribute to the social security system (even if they work illegally). There were no significant immigration reforms during the study period or changes that could have affected immigrants' ability to work in Spain. Importantly, the healthcare reform was not a result of a context of increasing hostility to immigrants. It was primarily an austerity policy to reduce the healthcare system's financial burden amid the economic recession.

In implementing the reform, the government electronically canceled all healthcare cards of individuals without legal residence. There were three exceptions to this reform: pregnant women, emergency care in the case of an accident, and children under 18 years old. Government reports show that an estimated 873,000 healthcare cards had been canceled a year after the reform.

It is likely that with such a wide-ranging change to healthcare access, some of those who should

[3]Data reported in PEW Research Center published 2nd October 2014, found a https://www.pewresearch.org/fact-tank/2014/10/02/u-s-deportations-of-immigrants-reach-record-high-in-2013/

have been entitled to healthcare under the new system, e.g., foreign workers (both EU or non-EU citizens) with a legal residence permit, may have been effectively excluded from the system due to administrative requirements and mistakes (say, some residence permits were still being processed and issued). As such, there may have been instances when migrants with legal residence permits were unaware of their entitlements. Non-governmental organizations (NGOs) in Spain report that there were also effects of the healthcare reform among the regularised migrant population. Médicos del Mundo (2015) claims that the reform's implementation was stricter than the law intended. In particular, after the reform, they report a significant lack of knowledge about access rights to healthcare amongst migrants, both with and without residence permits. It also found that some immigrants in protected patient categories (e.g., pregnant women or asylum seekers) had been refused treatment, though they were still entitled by law. Furthermore, they also describe many regularised immigrants in Spain who were denied access to the healthcare system after the reform because of administrative mistakes. These reports show a lack of knowledge of the process by both immigrants and healthcare administrative staff, leading to a more severe implementation of the reform than what was envisaged in the law.

## 2.2 Undocumented Immigrants in Spain

Immigration in Spain started increasing slowly during the eighties, speeding up considerably after 2000. While there were only 277,000 immigrants residing in Spain in 1990, the number reached almost 6 million in 2008. The composition of immigrants has also changed over the years. Immigrants from western Europe constituted half of the immigration at the end of the eighties, while it only constituted 18% of the immigrant group in 2008. Moroccans were the first non-EU immigrants in 1990, but now this position is held by immigrants from Latin America. González-Enríquez (2009).

Illegal immigration in Spain has been more a rule rather than an exception. In 2000, 83% of immigrants arrived in Spain without a work permit (Díez and Ramírez, 2001). Another study in Catalonia showed that 50% of immigrants were illegal in that region in 2003 (Pajares et al., 2004).

Besides the existence of very few survey studies, the percentage of irregular immigrants is not easy to estimate. In Spain, in particular, undocumented immigrants can voluntarily register in the municipality to receive free healthcare and access to public education (González-Enríquez, 2009). Therefore, all estimations on the size of irregular immigration in Spain are calculated by comparing the number of immigrants registered in the municipality to the number of residence permits. Jiménez-Rubio and Vall Castello (2020), following this methodology, calculate the per-

centage of undocumented individuals by nationality. They compare the number of individuals of each nationality in the 2011 Census and the number of residence permits taken from the Ministry of Employment and Social Security in Spain in the same year. We reproduce their table in the Appendix (Figure A1). We can observe that the percentage of undocumented immigrants varies widely across nationalities. 75% of immigrants from Dominica were undocumented in 2011, while only 1% of those from Kenya.

Unfortunately, we only have data on help-seeking behavior for all immigrants without further information on their legal status or country of origin. Therefore, in our analysis, we will treat all immigrant women equally affected by the healthcare system reform. Of course, some of these immigrant women will have a residence permit and enjoy full legal status. Consequently, our estimates represent a lower bound of the true impact of the reform on help-seeking behavior. Nevertheless, as mentioned before, NGOs and other organizations have documented several cases of legal immigrants being denied access to the healthcare system after the reform. Thus, considering all immigrant women as affected by the reform might be more realistic than it would initially seem.

## 2.3 Intimate Partner Violence in Spain

More than 2 million women (10.9% of women older than 16) suffered from physical, psychological, or sexual violence in Spain at some point in their life (2011 Violence Against Women Survey). However, only 27.4% of them reported the IPV case directly to the court or police. Reducing violence against women and increasing reporting is a high priority in Spain. Since 2004, the government has introduced legislation for comprehensive protection against intimate partner violence, integrating policies that include housing, employment, and criminal justice. Some of these measures are coupled with, among others, awareness campaigns, the creation of a Ministry for Equality, and the creation of specialized IPV courts. Moreover, since 2000, undocumented foreign victims of IPV in Spain have been offered additional protection to prevent them from being trapped in abusive relationships due to the threat of deportation. In particular, they have the right to a temporary (5 years) residence and work permit upon receiving a protection order or a public prosecutor's office report acknowledging gender violence. In addition, protection against sanctions is guaranteed if the victim's undocumented status comes to light when gender violence is reported.

Despite these measures, foreign-born women in Spain experience a higher incidence of IPV than Spanish women, and the physical violence they suffer tends to be more severe. 10.1% of Spanish women have suffered physical, psychological, or sexual violence at some point in their life, but this number raises to 20.9% amongst immigrant women (2011 Violence Against Women Survey).

Although the educational level and employment status can act as protective devices against IPV, immigrants with high education and income levels still show an increased prevalence compared to Spanish women of similar education and income levels (Delegación del Gobierno para la Violencia de Género, 2012). Furthermore,immigrant women have a higher likelihood of being murdered by an intimate partner than Spanish women; in 2011, they accounted for 35% of IPV fatalities while only comprising 11.51% of the female population (Consejo General del Poder Judicial, 2011).

### 2.4 Intimate Partner Violence Reporting Process

There are four ways to report a case of IPV and initiate a trial. First, the victim herself can report the situation to the police or directly to the court, which happened in 71% of the cases in 2011. Secondly, the police are required by law to report the situation to court if they assist the victim or witness it. The initiation of the legal procedure by the police happens 15% of the time. Thirdly, there are protocols that obligate doctors in hospitals and medical centers to submit an injury report to the court if they observe signs of IPV. 12% of all claims in 2011 were initiated through a medical injury report. Finally, family or friends aware of the situation can inform the police or the court; however, this is typically less frequent (2% of all claims). Every report is immediately registered as an IPV case in court, regardless of who initiates it and whether this claim was made to the police or the court.

After the registration of the IPV case in court, the investigation phase starts. The judges are in charge of the investigation and decide to dismiss or accept the case. If they accept it, they can also issue protection orders if they consider that there is an imminent danger to the victim (which happened in 27% of all cases in 2011). Some of the protection orders could be, among others: provisional prison, approach or residency ban, attribution of the use and enjoyment of the family home, determination of the custody, or access to protected housing and labor and social security rights. The investigation phase will take place within 72 hours after the reporting.

If in the investigation phase, the case is accepted, it is transferred to the relevant criminal or civil court for the oral trial phase, which leads to either the acquittal or the defendant's conviction.

## 3 Data

We gather data from two administrative sources: the Spanish National Institute of Statistics (INE) and the Judicial Branch of the Spanish Government (Consejo General del Poder Judicial).

## 3.1 IPV Reports and Protection Order Applications

We use information from the judiciary records gathered by the General Council of the Judicial Branch of the Spanish Government for the period 2011-2013. We obtain quarterly data on the number of total IPV cases registered in the court, as well as the number of applications for protection orders made by both Spanish and foreign victims in each of the 17 regions (Autonomous Communities) in Spain. [4] Note that any report of IPV, regardless of whether it is made directly in the court or the police station, is immediately registered as an IPV case in court. We divide these numbers by the Spanish and foreign female population (above 18 years old) living in each Autonomous Community. We obtain this bi-annual information from the population register in each Autonomous Community. Finally, we multiply it by 10,000. Therefore, our two main proxies for help-seeking behavior will be the number of IPV reports or applications for protection orders per 10,000 women by immigrant status.

Table 1 shows the summary statistics for these measures before and after the reform and for foreign and Spanish women separately. We can observe that, on average, foreign women file a larger number of IPV reports than Spanish women. On average, before the reform, there were 11.24 reports per 10,000 Spanish women in each quarter, while there were 55.88 reports per 10,000 foreign women. We observe a similar pattern when we focus on applications for protection orders. Before the reform, there were, on average, 3.12 applications per 10,000 Spanish women each quarter and 14.49 per 10,000 foreign women.

We also calculate the percentage of IPV claims that include an application for protection orders. Table 1 shows that, before the reform, 28.52% of IPV reports from Spanish women applied for protection orders. This percentage is very similar to that of foreign women (26.8%).

As explained above, although the reform should have affected only undocumented migrants, we include in our treatment group all victims with foreign nationality. This is mainly due to data availability problems, as we cannot distinguish between immigrants with and without a legal residence permit. However, we have evidence from several NGOs proving that the reform had some impacts also on legal immigrants due to administrative oversights and/or misconceptions from migrants and healthcare administrative workers on their healthcare access rights.

[4] The database on applications for protection orders can be downloaded here: "https://www.poderjudicial.es/cgpj/es/Temas/Estadistica-Judicial/Estadistica-por-temas/Datos-penales–civiles-y-laborales/Violencia-domestica-y-Violencia-de-genero/Datos-sobre-Violencia-sobre-la-mujer-en-la-estadistica-del-CGPJ/". The IPV reports by nationality are not directly available on their website, but they can be requested for free by emailing: estadistica.judicial@cgpj.es. estadistica.judicial@cgpj.es.

## 3.2 Control Variables

In our specifications, we will control for several factors that might be correlated with help-seeking behavior and/or IPV incidence.

*Female population*

We use as a control variable the Spanish and foreign female population (above 18 years old) residing in each Autonomous Community. For each observation of the outcome variable, we assign it the corresponding Spanish or foreign female population, so that we only include one female population variable as control. This biannual data is collected by the Municipal Register and is available in the Spanish National Institute of Statistics.[5] In Table 1, we can observe that, on average, there were 1,032,580 Spanish and 133,250 foreign women living in each Autonomous Community before the reform. The Spanish female population increased slightly after the reform, while the foreign female population decreased to 130,970.

Help-seeking behavior of both foreign and Spanish women might be correlated with the size of its immigrant group female population. Areas with more foreign and/or Spanish women might have a higher proportion of IPV services, either specialized or general. Finally, the cost of seeking formal help might be greater in smaller communities, both financially, socially, and in terms of availability of outside options.

In fact, De Miguel Luken (2015), using the 2015 Violence Against Women Survey, find that in smaller municipalities (less than 2,000 inhabitants), fewer women report suffering from physical violence. They also find that in these municipalities, a lower percentage of women who experience IPV make formal reports to the police or courts, but a higher proportion of these women seek help from other sources such as healthcare or social services.

*Female Labor Market* Quarterly unemployment rates and labor force participation rates for women, disaggregated by nationality status for each Autonomous Community, were obtained from the Spanish National Institute of Statistics.[6] In Table 1, we can observe that immigrant women have a higher participation rate, around 70%, than Spanish women (with a participation rate of around 50%). On the contrary, the unemployment rate is larger for immigrant women compared to Spanish women. We also see that the unemployment rate slightly increased for both immigrant and Spanish women after the reform, while participation rates were more or less constant.

[5]The data used in the paper can be accessed here: https://www.ine.es/jaxi/Tabla.htm?path=/t20/e245/p08/l0/&file=01003.px&L=0.
[6]The data used in the paper can be accessed here: https://www.ine.es/dynt3/inebase/es/index.htm?padre=990&capsel=994.

In our baseline specification, we include the female participation and unemployment rates of either Spanish or foreign women to control for local labor market conditions and their potential impact on the help-seeking behavior of women who experience IPV. As before, we only include one variable for the Spanish/foreign women unemployment rate and one for the Spanish/foreign women participation rate. It may be that stay-home or unemployed women may choose to stay in abusive relationships and may be less inclined to report IPV. Alternatively, the converse may be true, as staying with a partner (if not undocumented) still allows them to access healthcare services, thus providing more opportunities for medical staff to detect IPV and encourage these women to report.

*Male Labor Market* Quarterly unemployment rates and labor participation rates for men, disaggregated by nationality status for each Autonomous Community, were also obtained from the Spanish National Institute of Statistics.[7] In Table 1, we observe a similar labor market pattern between immigrant and Spanish men. Immigrant men have both higher participation and unemployment rates than Spanish men.

Empirical evidence suggests that male labor market outcomes are strongly linked to IPV rates. Loss of employment constitutes a stressful event that can lead to increased tension within the couple and, in some cases, to marital violence (Cunradi et al., 2009; Fagan and Browne, 1994). Additionally, as we do not have information on whether the partners are Spanish or foreign, we will not make any assumption on that element and will include two (instead of one as in the previous control variables for women) variables for the unemployment rate and two for the participation rate of both Spanish and foreign men.

# 4 Identification Strategy

We use a difference-in-differences model to determine the causal relationship between the withdrawal of access to healthcare and help-seeking behavior. In this model, Spanish women are the control group, as they are not affected by the reform, which overwhelmingly withdrew access to healthcare for foreigners, particularly undocumented women. We estimate the following equation:

$$\frac{HSB_{rqyf}}{Pop_{rqyf}} * 10000 = \beta_0 + \beta_1 Foreign_f + \beta_2 Post\,Reform_{qy} + \beta_3 Foreign_f * Post\,Reform_{qy} + \beta_4 X_{rqyf} + \delta_r + \mu_{qy} + U_{rqyf} \quad (1)$$

[7]The data used in the paper can be accessed here: https://www.ine.es/dynt3/inebase/es/index.htm?padre=990&capsel=994.

where $\frac{HSB_{rqyf}}{Pop_{rqyf}} * 10000$ represents our main outcome variable: women's help-seeking behavior, proxied by the number of IPV reports or applications for protection orders per 10,000 women residing in region *r* in year *y* and quarter *q* by nationality *f*. $Foreign_f$ is a dummy variable that is equal to 1 for immigrant women and 0 for Spanish women, and $Post\,Reform_{qy}$ is also a dummy equal to 1 for all periods after the third quarter of 2012 and 0 otherwise. $\delta_r$ is the region, and $\mu_{qy}$ is the quarter-year fixed effects. $X_{rqyf}$ includes a list of control variables, such as (own immigration status) female population, (own immigration status) female labor market participation and unemployment rate, and foreign and Spanish male participation and unemployment rates. We cluster the standard errors at the regional level and perform a wild bootstrap procedure to account for the small number of clusters (17 regions). In some specifications, we also include a region-specific linear trend to account for any linear changes over time that can influence the help-seeking behavior of women differently across regions. $\beta_3$ is our main coefficient of interest.

Identification Assumption

Our main identifying assumption is that, in the absence of the healthcare reform, the help-seeking behavior of foreign and Spanish IPV victims would have evolved in the same way between 2011 and 2013. This requires that unobservable differences in help-seeking behavior between foreign and Spanish IPV victims be fixed over time. While this assumption is untestable, we explore its plausibility by analyzing whether the help-seeking behavior of foreign and Spanish IPV victims was on parallel trends before the healthcare reform took place.

We can inspect the evolution of the raw means of IPV reports from foreign and Spanish women in Figure 1. As can be seen, before the reform, IPV reports of foreign and Spanish women followed parallel trends. We formally test the potential trend divergence by performing an event-study approach. In particular, we run the following regression:

$$\frac{HSB_{rqyf}}{Pop_{rqyf}} * 10000 = \alpha_0 + \alpha_1\, Foreign_f + \sum_{j=2011q2}^{2013q4} \beta_j\, Foreign_f * \mu_j + \alpha_2\, X_{rqyf} + \delta_r + \mu_{qy} + U_{rqyf} \tag{2}$$

which is very similar to Equation 1 but now $\sum_{j=2011q2}^{2013q4} \beta_j\, Foreign_f * \mu_j$ is the interaction term between the foreign dummy variable (equal to one for immigrant women and 0 for Spanish women) and a set of quarter-year dummy variables. We consider the first quarter-year in our sample, the first quarter of 2011, as the baseline. If the parallel trend assumption is fulfilled, we should find that all the $\beta_j$ coefficients for the quarter-years before the reform (2011q2-2012q3) would be equal to zero.

# 5 The Reform Effect on Help-seeking Behavior

Tables 2 and 3 examine the impact of the reform on the help-seeking behavior of IPV victims. We focus on two main outcomes: IPV reports and applications for protection orders. Table 2 shows the reform's effect on IPV reports per 10,000 women using different specifications. In column 1, we report the effect on IPV reports without using any control (only year-quarter and regional fixed effects). We find that the healthcare reform reduced the number of IPV reports by 7.55 per 10,000 foreign women. Columns 2 to 7 add more controls (population, labor market controls, and regional linear time trends) to the estimation. We observe that our estimates are extremely robust to these additional controls. Column 6 shows our preferred specification, which includes all controls except the regional linear time trends. Removing healthcare access to undocumented immigrants reduced IPV reports by 7.09 ($\sim$ 12.67%) per 10,000 foreign women.

Table 3 also shows a very similar reduction in the number of applications for protection orders. We estimate, in column 2, that applications for protection orders were reduced by 1.8 per 10,000 foreign women or 12.45% after healthcare access was restricted. If we compare columns 1 and 2, we again find that our estimates are robust to the inclusion of controls. We also look at the reform's impact on the proportion of IPV reports that apply for protection orders, and we do not find any effect. This result indicates that the reform did not impact the severity of reported cases.

## 5.1 Event Studies

One of the main assumptions for the validity of the difference-in-differences approach is that there are no time-varying pre-existing differences between the help-seeking behavior of Spanish and foreign IPV victims. To assess the validity of the parallel trend assumption, we perform an event study approach estimating equation 2 for IPV reports and applications for protection orders for every 10,000 women. In Figure 2, we plot the estimated coefficient of the interactions between the quarter-year dummies and the foreign women dummy, where the coefficient for the first quarter of 2011 is normalized to 0.

The healthcare reform was enacted in April 2012 (the third quarter of 2012) but came into effect on September 2012. Hence, the last quarter of 2012 is the first quarter affected by the reform (indicated by the red vertical line in Figure 2). The event studies show that all the coefficients for the seven pre-reform quarters (almost two years) are close to zero and statistically insignificant. These graphs suggest no pre-existing increasing or decreasing trend of help-seeking behavior for foreign women compared to Spanish women before the reform.

Figure 2 also shows that the effect of restricting healthcare access on both IPV reports and applications to protection orders was immediate right after the reform and was persistent throughout the post-reform period (more than one year).

# 6 Heterogeneity

In Spain, there is a certain degree of decentralization of political power at the level of the autonomous communities (hereafter referred to as regions). In particular, the provision of healthcare services is entirely decentralized to the regional health authorities, which allowed them to adjust the central government's healthcare reform in different ways.

Six regions (Madrid, Murcia, Balearic Islands, Castile-Leon, La Rioja, and Castile-La Mancha) implemented the law with minimal modifications. In contrast, four other regions organized alternative healthcare programs for irregular immigrants, which passed right after the national healthcare reform was implemented (Asturias, Basque Country, Galizia, and Catalonia). The remaining seven regions arranged alternative measures but implemented them at different points after the introduction of the national ban. The eligibility requirements, administrative requirements, and medical services included for these alternative healthcare programs varied across the regions.

Cimas et al. (2016) provide an in-depth summary of the regional implementation of the restrictions on healthcare access for undocumented immigrants. They also rank the 17 Spanish regions according to the intensity of implementation of the national law. For the intensity score, Cimas et al. (2016) used eight criteria: having provided a legislative action for alternative healthcare access, groups of patients covered, administrative requirements (documents required to acquire a health card), medical care services included, coverage of out-of-pocket payments, medical history included in the general patients' database, and diseases of public health relevance included.

We ranked regions by the date an alternative healthcare provision was implemented (if any) and the intensity score of Cimas et al. (2016). We summarize the most important aspects considered by Cimas et al. (2016) in Figure 3 and divide the sample in two. The Valencian Region, Cantabria, Canary Islands, Madrid, Murcia, Balearic Islands, Castile-Leon, La Rioja, and Castile-La Mancha are considered regions that enforced more the central government's healthcare reform. In contrast, the rest of the regions implemented the law less intensively.

In Table 4, we perform a heterogeneity analysis in these two groups of regions. We see that,

indeed, the effect of the reform on help-seeking behavior is bigger in regions that enforced the law more strongly, with an estimated 16.6% reduction in foreign IPV reports and a 15.9% drop in applications for protection orders relative to Spanish women (Table 4, columns 1 and 2). The magnitude of the effect is smaller and statistically insignificant for regions with less enforcement, with an estimated 8.4% reduction in IPV reports and an 8% drop in applications for protection orders. (Table 4, columns 4 and 5). We still observe no change in the percentage of IPV reports applying for protection orders in any of the two groups of regions.

# 7 Mechanisms

Healthcare access could affect help-seeking behavior through two different channels.

## 7.1 Healthcare as a disclosure and referral mechanism to other IPV-specialized services

Healthcare services play a key role in disclosing IPV and providing an important link to specialized domestic violence services. IPV is a risk factor for health, both physical and psychological. These consequences make the healthcare system the first (and sometimes only) point of contact for IPV victims with public professionals. This contact becomes an opportunity for intervention due to the relationship of trust that normally exists between the victim and the healthcare professional.

In Spain, after the introduction of the Organic Law 1/2004 on Integral Protection Measures against Gender Violence, doctors are legally required to report any suspicion of IPV abuse directly to the judiciary system through an injury report. Moreover, healthcare workers should inform victims about their rights and available resources and refer them to specialist violence agencies where more intensive advocacy interventions will be provided.

In this Section, we explore the extent to which our results may be driven by immigrant women having less access to healthcare after the reform, leading to fewer disclosures of IPV to healthcare professionals. We have information on the number of IPV cases reported directly by the victim, the healthcare center (through an injury report), or the policy or family. Therefore, we can investigate the extent to which the reform affected the reporting channel for the IPV case, as described above. If healthcare access affects the help-seeking behavior of IPV victims only as a service for disclosure, we should observe that the number of IPV reports initiated by healthcare centers reduced after the reform. On a smaller magnitude, healthcare access could also impact reports initiated by the victims, as healthcare professionals also act as a source of information and referral to specialist

IPV agencies.

Unfortunately, we do not have this data disaggregated by victims' nationality, which prevents us from using the previous identification strategy to examine this question. Instead, we rely on the fact that some regions implemented the reform more intensively than others. Therefore, we perform a difference-in-differences approach comparing regions that enforced the law more strongly against those that enforced it less strongly before and after the reform. In particular, we estimate the following regression:

$$\frac{HSB_{rqy}}{Pop_{rqy}} * 10000 = \beta_0 + \beta_1 \, Reg\, More\, Enforcement_r + \beta_2 \, Post\, Reform_{qy} + \beta_3 \, Reg\, More\, Enforcement_r * Post\, Reform_{qy} + \beta_4 \, X_{rqy} + \delta_r + \mu_{qy} + U_{rqy} \quad (3)$$

where $\frac{HSB_{rqy}}{Pop_{rqy}} * 10000$ represents women's help-seeking behavior (IPV reports and applications to protection orders per 10,000 women living in region *r* in year *y* and quarter *q*). $Reg\, More\, Enforcement_r$ is a dummy variable equal to 1 for regions that enforced the reform more strongly, following the classification by Cimas et al. (2016) (Valencian region, Cantabria, Canary Islands, Madrid, Murcia, Balearic Islands, Castile-Leon, La Rioja and Castile-La Mancha), and 0 for the rest of the regions. [8] $Post_{qy}$ is also a dummy equal to 1 for all the periods after the third quarter of 2012 and 0 otherwise. $\delta_r$ is the region, and $\mu_{qy}$ is the quarter-year fixed effects. $X_{rqy}$ includes a list of control variables, such as foreign and Spanish female and male labor market participation and unemployment rates and foreign and Spanish female population. We cluster the standard errors at the regional level and perform a wild-bootstrap.

Table 6 shows that, when we perform this alternative strategy, we still observe that the reform reduced the total number of IPV reports in regions with more law enforcement compared with regions with alternative healthcare access for undocumented immigrants. In particular, after the reform, there were 1.18 fewer IPV reports per 10,000 women (which corresponds to an 8.8% reduction compared to the pre-reform mean).[9]

When we look at the reform's effect on the IPV case reporting channel, Table 6 shows that the reform mostly reduced the number of IPV reports initiated by a healthcare center through an injury report. After the reform, there was a reduction of 0.44 per 10,000 women (32%) in the number

[8] See Figure 3 for the classification of regions by their degree of law implementation.

[9] As a robustness check, in Figure A2, we also observe a very similar reduction in the total number of IPV crimes reported by foreign women (compared with Spanish women) after the reform took place. It is important to note that the number of IPV crimes reported does not coincide with the number of IPV reports, as one IPV case can report more than one crime.

of injury reports issued to denounce an IPV case. We also observe a more minor and insignificant reduction of 9% in the number of IPV cases initiated directly by the victim. Finally, there is no reduction at all in the number of IPV cases reported by the police or family members.

Figure 5 reports the event study graphs for the total number of IPV reports and the IPV reports initiated by injury reports using the alternative identification strategy from 3. We can observe that all the coefficients for the pre-reform quarters are close to zero and statistically insignificant. These graphs suggest no pre-existing increasing or decreasing trend of help-seeking behavior in regions with different intensities in the implementation of the reform.

These results suggest that the reform's main effects on help-seeking behavior were driven by a reduction in injury reports by medical centers. We cannot completely rule out that the loss of healthcare access also reduced (to a lesser extent) the number of reports initiated by the victims, which could be explained by these victims having less information or being less likely to be referred to specialist services because of their inability to visit a healthcare center and get this information and/or referral during the health visit.

## 7.2 A change in the behavior of perpetrators

An alternative mechanism for the reform's decrease in IPV help-seeking behavior is that the healthcare reform may have reduced the incidence of IPV. In particular, perpetrators could consider their own or their partner's lack of healthcare access before perpetrating violence. If this is the case, removing healthcare access will reduce the incidence of IPV, mechanically lowering the number of IPV reports and applications for protection orders.

Looking at the reform's effect on IPV incidence is unattainable, as the actual incidence of IPV is extremely difficult to measure due to its hidden nature. In Spain, the incidence of IPV is estimated in a nationally representative Violence Against Women (VAW) survey, which is only conducted in 4 yearly cycles. Therefore, we sought several alternative methods which suggest that this is not the main mechanism behind the effect on help-seeking behavior.

*Controlling for Male Unemployment Rate*

Empirical evidence suggests that male unemployment is strongly linked to higher rates of IPV. Some studies have found employment-related stressors to be associated with marital violence (Cano and Vivian, 2003), and clearly, loss of employment constitutes a stressful event that could lead to increased tension between couples (Cunradi et al., 2009; Fagan and Browne, 1994). In

addition, unemployed males tend to spend more time at home compared to their employed counterparts, resulting in an increased likelihood of negative encounters with partners (Benson et al., 2003). Two Spanish studies show a strong correlation between male unemployment in Spain and the likelihood that a woman experiences IPV (Sanz-Barbero et al., 2015; Alonso-Borrego and Carrasco, 2017).

We use the regional foreign and Spanish male unemployment rate[10] as a proxy of IPV incidence and control for it in our regression. As we observe in column 4 of Table 2, the reform's effects on IPV reporting are unchanged when we include these measures of male unemployment rate as controls. Column 5 shows that the result is still robust if we additionally control for foreign and Spanish male participation rates. Table A1, in the Appendix, shows that the effect on applications for protection orders is also robust to the inclusion of these controls.

These results suggest that the underlying incidence of IPV (proxied by the male unemployment rate) does not explain or confound our results in any significant way regarding the link between IPV reporting and healthcare reform.

*Effect on Mortality or Homicides*

As mentioned before, measuring IPV incidence is not an easy task. Homicide is the most severe outcome of IPV, but importantly, it is also the most objective measure of IPV as it does not depend on reporting behavior. Therefore, another way to analyze if the healthcare reform affected IPV incidence, would be to use intimate partner homicides as an outcome. However, the Spanish mortality data does not contain that level of detail. As the best approximation, we can analyze the reform's effect on female mortality and homicides.

In Table 5, we can observe that the reform did not affect the total number of deaths or homicides per 10,000 women. This result suggests that at least the most severe type of IPV was not affected by the restriction on healthcare access.

[10]We control for both Spanish and foreign male unemployment rates because couples do not necessarily sort by nationality, and we allow for the possibility that the incidence of IPV could potentially be affected by changes in both unemployment rates.

# 8 Discussion

In this paper, we exploit a policy reform introduced in Spain in 2012 that restricted access to the healthcare system for undocumented immigrants in order to estimate the causal effect of access to healthcare and help-seeking behavior amongst women who experience IPV.

We construct a panel of IPV reports and protection order requests from the judiciary system for foreign and Spanish women at the regional and quarterly levels from 2011 to 2013. We perform a difference-in-differences model comparing the help-seeking behavior of foreign women (treated) and Spanish women (control) before and after the reform took place (third quarter of 2012). We find a reduction of 7 IPV reports every 10,000 foreign women, compared with Spanish women, after access to healthcare was withdrawn for unentitled immigrants. This constitutes a reduction of 12.67% compared with the pre-reform mean for foreign women. We also find that the reform reduced the number of applications for protection orders by 1.8 for every 10,000 foreign women (12.45%).

The difference-in-differences methodology relies heavily on the common (or parallel) trends assumption. We follow an event study approach to validate the fulfillment of this assumption in our analysis. We show no significant differences in IPV reports and applications for protection orders between foreign and Spanish victims in the seven quarters leading up to the policy intervention.

In order to corroborate our findings, we explore the extent to which the intensity of the implementation of the reform at the regional level affected help-seeking behavior. We found that regions with stricter implementation showed a much larger effect than regions where alternative regional care programs were implemented.

Healthcare access could affect help-seeking behavior through two different channels. First, healthcare is an important channel for the disclosure of IPV from the victims' perspective. Doctors are legally required to report any evidence of IPV directly to the judiciary system through an injury report. They can also provide direct information to victims on their rights and available resources, as well as refer them directly to specialist IPV services. Second, healthcare access could directly affect perpetrators' behavior, impacting reporting only through the change in incidence. In seeking to control for the underlying incidence of IPV, insofar as possible, we use the male unemployment rate as a proxy measure. When we control for Spanish and foreign male unemployment rates in our main regressions, our results for help-seeking behavior remain unchanged. Furthermore, we do not find any impact of the reform on women's mortality or homicides. These results suggest that the

underlying incidence of IPV cannot explain the estimated changes in the help-seeking behavior of IPV victims.

Finally, we examine the extent to which the reform changed the reporting channel. We have information on the number of IPV cases reported directly by the victim, the medical centers (through an injury report), or the police/family. However, in this case, we do not have information on the victim's nationality. Therefore, we use the differences in the intensity of implementation of the reform to perform a difference-in-differences strategy comparing regions that enforced the law more strongly to those that enforced it less strongly before and after the reform. We show suggestive evidence that the reform's main effects on help-seeking behavior were driven by a reduction in injury reports by medical centers.

Our work is especially relevant to inform current discussions on the impacts of immigration policies. In many countries, there has been a surge in the inflow of undocumented migrants (as shown by the refugee crisis in Europe and the US), and fear about the potentially negative consequences of immigration has spread over the resident population. As a result, this has prompted many policymakers to consider introducing policies limiting access to several public programs and benefits for the immigrant population. Our paper provides evidence of the negative consequences of policies that restrict such access, mainly drawing attention to the importance of carefully evaluating the impact of health policies on families and relationships, particularly when they affect the most vulnerable groups in society.

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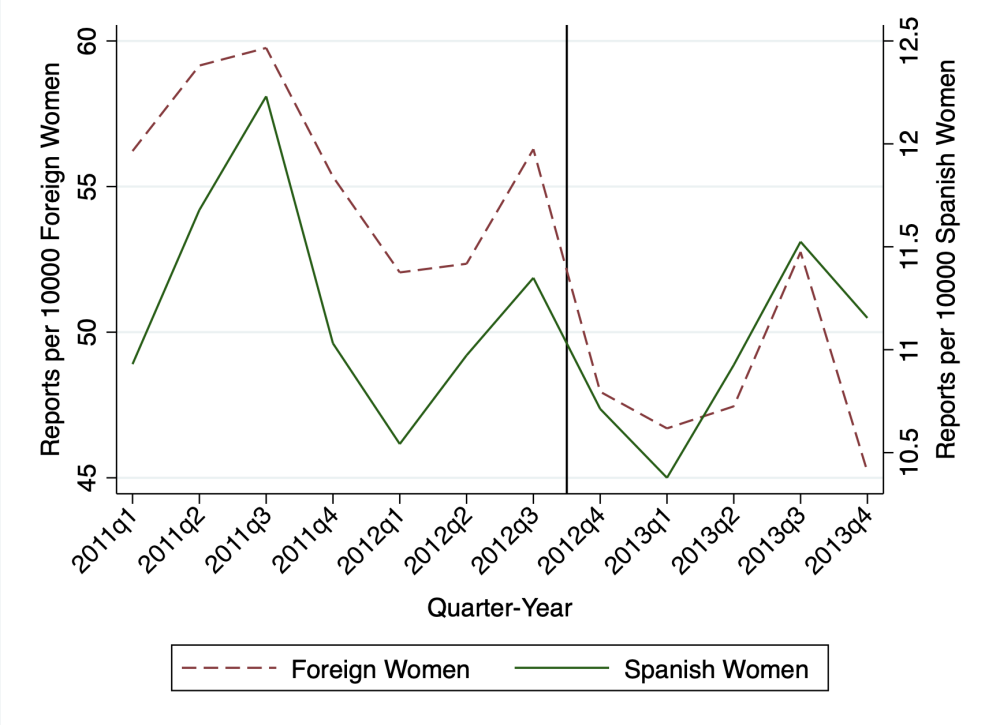
# 9 Figures and Tables

Figure 1: Evolution of IPV Reports per 10,000 Women




*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This figure plots the evolution of the number of IPV reports per 10,000 women between 2011 and 2013. The dashed red line shows this evolution for foreign women, while the green line is for Spanish women.

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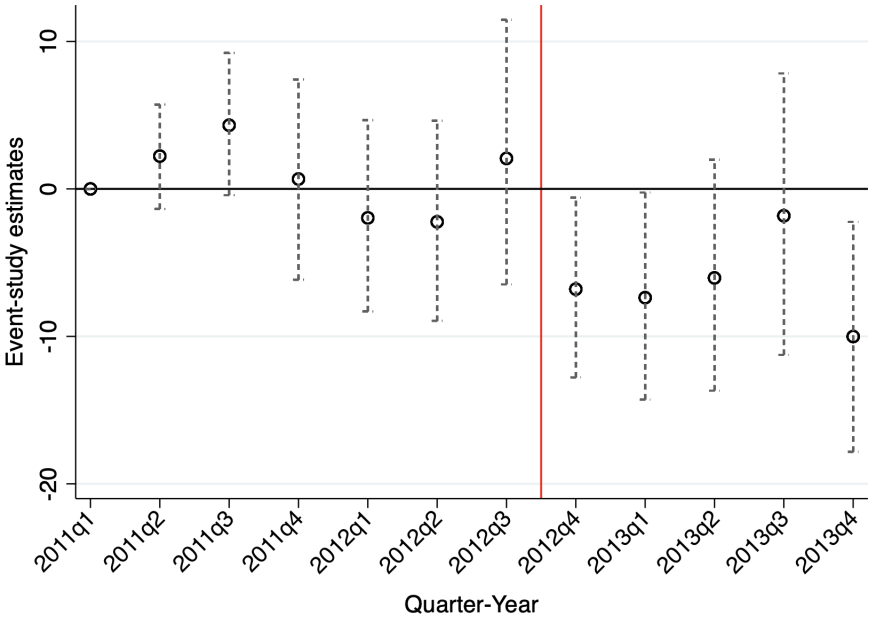
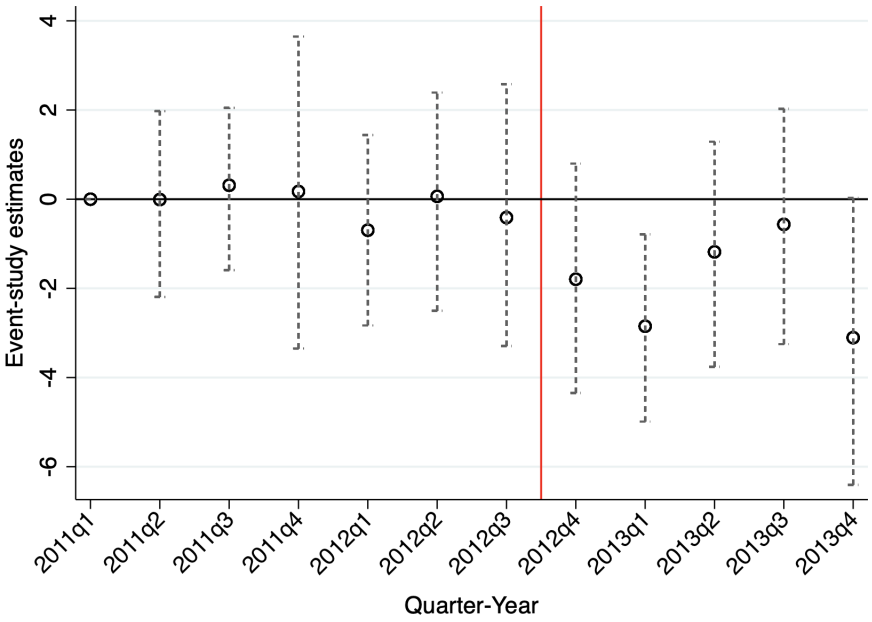
# Figure 2: Event Studies

(a) IPV Reports per 10,000 Women




(b) Applications for Protection Orders per 10,000 Women




*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This figure reports the estimates and the 95 percent confidence intervals of the interaction term of Foreign and Post Reform dummies of the event studies estimation following 2. The reform took place after the third quarter of 2012. In the estimations, we control for regional and quarter-year fixed effects, as well as women's unemployment rate, women's participation rate, foreign and Spanish men's unemployment and participation rates, and the population of women over 18 years old. All standard errors are clustered at the regional level, and wild-bootstrap is performed. The outcomes considered are displayed on top of each figure.

## Figure 3: Implementation of the Law

| Region | Legislative Action | Date | Groups Covered | Requirements | Services Included | Medication |
|---|---|---|---|---|---|---|
| Regions with less enforcement | | | | | | |
| Asturias | ✓ | 01/09/2012 | No resources | Low | All | All |
| Navarra | ✓ | 25/02/2013 | All | Low | All | All |
| Basque Country | ✓ | 01/07/2012 | No resources | High | All | All |
| Galizia | ✓ | 31/08/2012 | No resources | Medium | All | All |
| Catalonia | ✓ | 01/09/2012 | No resources | Medium | Primary | All |
| Andalusia | ✓ | 06/06/2013 | No resources | Low | All | All |
| Aragon | ✓ | 19/03/2013 | No resources | Medium | All | Partially |
| Extremadura | ✓ | 15/07/2013 | No resources | Medium | All | All |
| Regions with more enforcement | | | | | | |
| Valencian Region | ✓ | 31/07/2013 | No resources | Medium | All | All |
| Cantabria | ✓ | 25/11/2013 | No resources | Medium | All | All |
| Canary Islands | ✓ | 16/08/2013 | No resources | High | All | Partially |
| Madrid | | | | | | |
| Murcia | | | | | | |
| Balearic Islands | | | | | | |
| Castile-Leon | | | | | | |
| La Rioja | | | | | | |
| Castile-La Mancha | | | | | | |

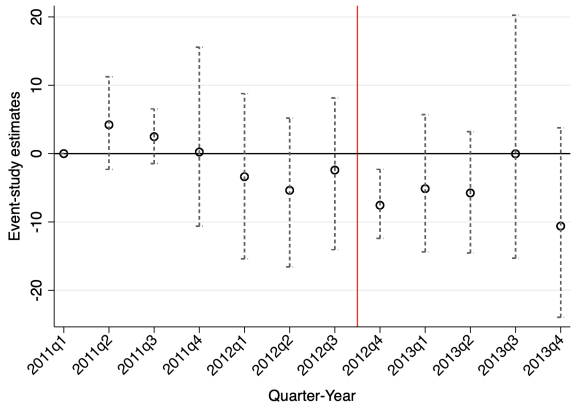
*Source:* Authors' own construction following the classification made by Cimas et al. (2016).

*Notes:* This figure ranks regions by the date alternative healthcare provision for undocumented migrants was made available and the intensity of these alternative healthcare provisions derived from Cimas et al. (2016). The intensity measure takes into account the group of undocumented immigrants covered, the number of requirements/documents needed to be included in the public healthcare system, and the type of healthcare services and medication provided.

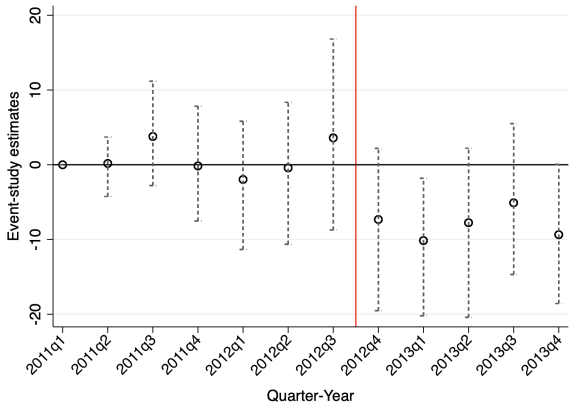
# Figure 4: Event Studies by Intensity of Enforcement

IPV Reports per 10,000 Women

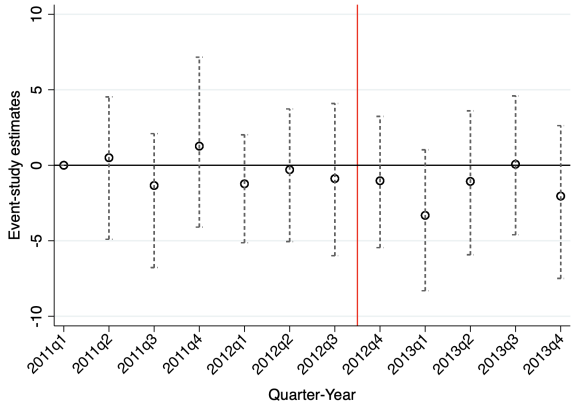
(a) Regions with Less Enforcement



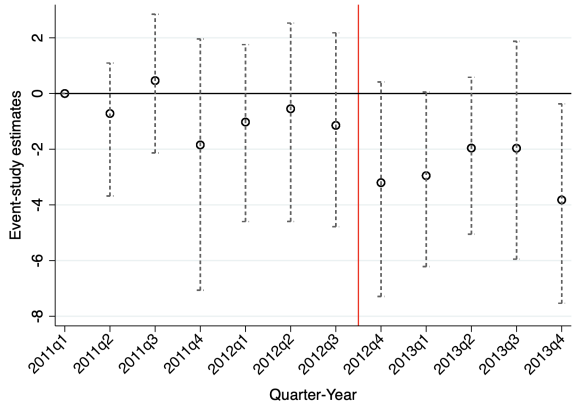

(b) Regions with More Enforcement




Applications to Protection Orders per 10,000 Women




(c) Regions with Less Enforcement



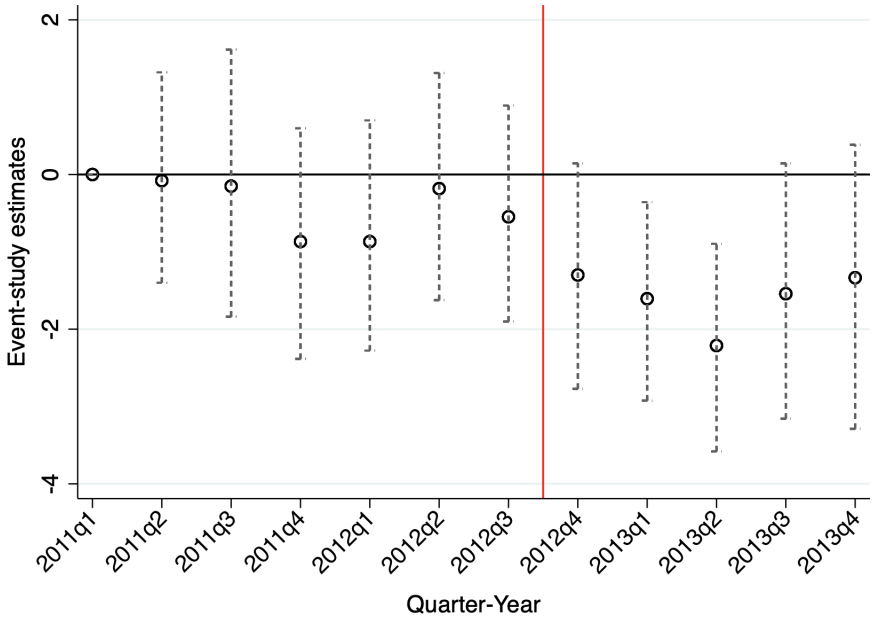

(d) Regions with More Enforcement

*Source:* Quarterly Judicial Reports, years 2011-2013.

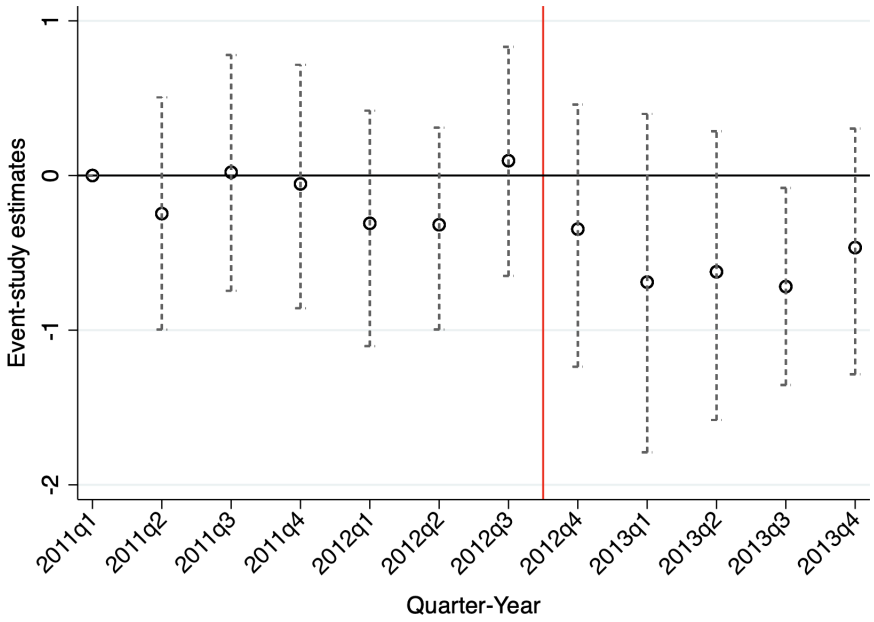
*Notes:* This figure reports the estimates and the 95 percent confidence intervals of the interaction term of Foreign and Post Reform dummies of the event studies estimation following 2. Panel a) reports the estimates for regions where the law was less enforced, while Panel b) reports it for regions that enforced the reform more. The reform took place after the third quarter of 2012. In the estimations, we control for regional and quarter-year fixed effects, as well as women's unemployment rate, women's participation rate, foreign and Spanish men's unemployment and participation rates, and the population of women over 18 years old. All standard errors are clustered at the regional level, and wild-bootstrap is performed. The outcomes considered are displayed on top of each figure.

## Figure 5: Event Studies on IPV Reports by Who is Reporting

(a) Total IPV Reports per 10,000 Women




(b) IPV Reports Initiated by Injury Report per 10,000 Women




*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This figure reports the estimates and the 95 percent confidence intervals of the interaction term of Reg More Enforcement and Post Reform dummies of the event studies estimation derived from 3. The reform took place after the third quarter of 2012. In the estimations, we control for regional and quarter-year fixed effects, as well as women's unemployment rate, women's participation rate, foreign and Spanish men's unemployment and participation rates, and the population of women over 18 years old. All standard errors are clustered at the regional level, and wild-bootstrap is performed. The outcomes considered are displayed on top of each figure.

Table 1: Descriptive Statistics

| | Spanish Women | | | | | |
|---|---|---|---|---|---|---|
| | Before Reform | | | After Reform | | |
| | Mean | Min | Max | Mean | Min | Max |
| Reports per 10,000 women | 11.24 | 5.89 | 21.63 | 10.93 | 5.62 | 20.24 |
| Applications per 10,000 women | 3.12 | 1.14 | 7.18 | 2.93 | 1.18 | 6.00 |
| % Reports with Applications | 28.52 | 15.43 | 46.21 | 27.65 | 12.46 | 45.46 |
| Female Population (thousands) | 1032.58 | 117.66 | 3169.79 | 1034.57 | 117.78 | 3174.69 |
| Female PR (%) | 50.57 | 43.40 | 62.69 | 51.13 | 45.56 | 60.83 |
| Fema UR (%) | 20.19 | 9.38 | 36 | 23.72 | 14.1 | 38.98 |
| Male PR (%) | 64.75 | 56.84 | 73.73 | 64.06 | 56.71 | 72.21 |
| Male UR (%) | 18.91 | 9.85 | 33.62 | 22.20 | 12.98 | 34.79 |
| | Foreign Women | | | | | |
| | Before Reform | | | After Reform | | |
| | Mean | Min | Max | Mean | Min | Max |
| Reports per 10,000 women | 55.88 | 31.85 | 109.09 | 48.01 | 24.57 | 94.78 |
| Applications per 10,000 women | 14.49 | 4.58 | 31.43 | 12.34 | 1.95 | 26.30 |
| % Reports with Applications | 26.80 | 6.06 | 56.94 | 26.86 | 3.42 | 60 |
| Fema UR (%) | 32.92 | 16.36 | 60.43 | 37.22 | 16.17 | 64.16 |
| Female Population (thousands) | 133.25 | 15.85 | 449.77 | 130.97 | 16.06 | 443.28 |
| Female PR (%) | 70.99 | 53.20 | 84.68 | 70.68 | 59.73 | 81.16 |
| Female UR (%) | 32.92 | 16.36 | 60.43 | 37.22 | 16.17 | 64.16 |
| Male PR (%) | 82.69 | 69.88 | 91.37 | 81.35 | 61.07 | 90.69 |
| Male UR (%) | 36.50 | 18.31 | 68.21 | 39.23 | 18.47 | 74.47 |

*Source:* Quarterly Judicial Reports and Labor Force Survey, years 2011-2013.
*Notes:* This table reports summary statistics for the main outcome and control variables, before and after the reform. Panel 1 reports the summary statistics for Spanish women and Panel 2 for foreign women.

# Table 2: Impact of the Reform on IPV Reports

| | IPV Reports per 10,000 Women | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Foreign Women | 44.632*** | 40.729*** | 28.744*** | 28.690*** | 28.646*** | 29.834*** | 28.107*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Post Reform | -1.259 | 1.430 | -2.303 | -0.511 | -0.741 | -0.720 | |
| | (0.847) | (1.997) | (1.819) | (2.509) | (2.589) | (2.610) | |
| Foreign * Post Reform | -7.558*** | -7.793*** | -7.058** | -7.090** | -7.098** | -7.094** | -7.110** |
| | (2.429) | (2.505) | (2.859) | (2.872) | (2.875) | (2.874) | (2.880) |
| Female UR | | 0.307 | 0.135 | 0.161 | 0.169 | 0.154 | 0.214 |
| | | (0.205) | (0.222) | (0.215) | (0.219) | (0.253) | (0.227) |
| Female PR | | | 0.694** | 0.680** | 0.677** | 0.665** | 0.700** |
| | | | (0.350) | (0.343) | (0.342) | (0.335) | (0.333) |
| Foreign Male UR | | | | -0.041 | -0.035 | -0.034 | 0.032 |
| | | | | (0.072) | (0.071) | (0.072) | (0.057) |
| Spanish Male UR | | | | -0.280 | -0.223 | -0.214 | -0.192 |
| | | | | (0.435) | (0.421) | (0.413) | (0.426) |
| Foreign Male PR | | | | | 0.119 | 0.117 | 0.076 |
| | | | | | (0.087) | (0.086) | (0.084) |
| Spanish Male PR | | | | | 0.071 | 0.076 | -0.143 |
| | | | | | (0.274) | (0.274) | (0.593) |
| Female Pop over 18 | | | | | | 0.001 | 0.001 |
| | | | | | | (0.002) | (0.002) |
| Region FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year-Quarter FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Reg Linear Trend | | | | | | | ✓ |
| Observations | 408 | 408 | 408 | 408 | 408 | 408 | 408 |
| $R^2$ | 0.865 | 0.869 | 0.882 | 0.882 | 0.883 | 0.883 | 0.893 |
| Mean Dep. Variable | 55.880 | 55.880 | 55.880 | 55.880 | 55.880 | 55.880 | 55.880 |

*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This table reports the impact of the reform on the number of IPV reports per every 10,000 women. The reform took place after the third quarter of 2012. Column 1 only controls for regional and quarter-year fixed effects. Column 2 also controls the women's unemployment rate and column 3 for women's participation rate. Column 4 additionally controls for foreign and Spanish men's unemployment rates. Column 5 controls for foreign and Spanish men's participation rates. Column 6 controls for the population of women over 18 years old. Finally, column 7 adds regional linear time trends. All standard errors are clustered at the regional level, and wild-bootstrap is performed.

*** p<0.01, ** p<0.05, * p<0.1.

Table 3: Impact of the Reform on Applications for Protection Orders

| | Applications for Protection Orders | | Perc. Reports with Protection Orders | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Foreign Women | 11.373*** | 5.616* | -1.719 | -3.259 |
| | (0.000) | (2.857) | (1.304) | (2.159) |
| Post Reform | -0.998* | -1.603** | -2.349* | -4.394** |
| | (0.512) | (0.635) | (1.225) | (1.881) |
| Foreign * Post Reform | -1.961*** | -1.817*** | 0.934 | 0.966 |
| | (0.630) | (0.658) | (1.275) | (1.308) |
| Region FE | ✓ | ✓ | ✓ | ✓ |
| Year-Quarter FE | ✓ | ✓ | ✓ | ✓ |
| Controls | | ✓ | | ✓ |
| Observations | 408 | 408 | 408 | 408 |
| $R^2$ | 0.793 | 0.826 | 0.629 | 0.640 |
| Mean Dep. Variable | 14.498 | 14.498 | 26.809 | 26.809 |

*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This table reports the impact of the reform on the number of applications for protection orders every 10,000 women (columns 1 and 2) and the percentage of IPV reports that apply for protection orders (columns 3 and 4). The reform took place after the third quarter of 2012. Columns 1 and 3 only control for regional and quarter-year fixed effects. Columns 2 and 4 also control for the women's unemployment rate, women's participation rate, foreign and Spanish men's unemployment and participation rates, and the population of women over 18 years old. All standard errors are clustered at the regional level, and wild-bootstrap is performed.

*** p<0.01, ** p<0.05, * p<0.1.

Table 4: Impact of the Reform by Intensity of Enforcement

| | Regions Enforced More | | | Regions Enforced Less | | |
|---|---|---|---|---|---|---|
| | Reports | Applications | % Appl. Orders | Reports | Applications | % Appl. Orders |
| Foreign Women | 26.524*** | 2.651* | -4.179 | 53.351*** | 18.378*** | 3.813 |
| | (0.000) | (1.585) | (2.964) | (0.000) | (0.000) | (8.302) |
| Post Reform | 2.788 | -0.959 | -4.220** | -6.547 | -2.576*** | -4.232 |
| | (2.376) | (0.696) | (2.020) | (4.349) | (0.820) | (4.141) |
| Foreign * Post Reform | -8.653** | -2.093*** | 2.097 | -5.097 | -1.187 | -0.040 |
| | (3.803) | (0.668) | (1.581) | (4.725) | (0.809) | (0.732) |
| Region FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year-Quarter FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Reg Linear Trend | | | | | | |
| Controls | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 216 | 216 | 216 | 192 | 192 | 192 |
| $R^2$ | 0.912 | 0.880 | 0.664 | 0.911 | 0.841 | 0.658 |
| Mean Dep. Variable | 51.899 | 13.090 | 27.553 | 60.358 | 14.774 | 25.972 |

*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This table reports the impact of the reform on the number of IPV reports per 10,000 women (columns 1 and 4), the number of applications for protection orders per 10,000 women (columns 2 and 5), and the percentage of IPV reports that also apply for protection orders (columns 3 and 6). The reform took place after the third quarter of 2012. Columns 1, 2, and 3 report the reform's effect on the different outcomes for regions where the reform enforcement was stronger, while columns 4, 5, and 6 estimate it for regions that enforced the reform less. All specifications control for regional and quarter-year fixed effects, women's unemployment rate, women's participation rate, foreign and Spanish men's unemployment and participation rates, and the population of women over 18 years old. All standard errors are clustered at the regional level, and wild-bootstrap is performed.

*** p<0.01, ** p<0.05, * p<0.1.

Table 5: Impact of the Reform on Mortality

| | Deaths per 10,000 women | |
|---|---|---|
| | Total | Homicide |
| Foreign Women | -22.583** | -0.016*** |
| | (11.282) | (0.005) |
| Post Reform | 0.328 | -0.005 |
| | (1.429) | (0.008) |
| Foreign * Post Reform | 0.010 | -0.007 |
| | (0.334) | (0.005) |
| Region FE | ✓ | ✓ |
| Year-Quarter FE | ✓ | ✓ |
| Reg Linear Trend | | |
| Controls | ✓ | ✓ |
| Observations | 408 | 408 |
| $R^2$ | 0.875 | 0.112 |
| Mean Dep. Variable | 0.324 | 0.006 |

*Source:* Mortality Register Database, years 2011-2013.
*Notes:* This table reports the impact of the reform on the total number of deaths per 10,000 women (column 1) and the number of deaths due to homicide per 10,000 women (column 2). The reform took place after the third quarter of 2012. All specifications control for regional and quarter-year fixed effects, women's unemployment rate, women's participation rate, foreign and Spanish men's unemployment and participation rates, and the population of women over 18 years old. All standard errors are clustered at the regional level, and wild-bootstrap is performed.

Table 6: Impact of the Reform on Who is Reporting

| | Reports per 10,000 women | | | |
|---|---|---|---|---|
| | Total | By Victims | By Injury Report | By Police or Family |
| Reg More Enforcement | -43.822 | -41.143 | -14.763 | 12.085 |
| | (41.307) | (99.140) | (14.934) | (61.654) |
| Post Reform | 0.121 | -0.960 | 0.788 | 0.294 |
| | (1.252) | (0.909) | (0.542) | (0.718) |
| Reg More Enforcement* Post Reform | -1.185** | -0.937 | -0.442* | 0.194 |
| | (0.595) | (0.664) | (0.256) | (0.394) |
| Region FE | ✓ | ✓ | ✓ | ✓ |
| Year-Quarter FE | ✓ | ✓ | ✓ | ✓ |
| Controls | ✓ | ✓ | ✓ | ✓ |
| Observations | 204 | 204 | 204 | 204 |
| $R^2$ | 0.957 | 0.912 | 0.864 | 0.704 |
| Mean Dep. Variable | 13.310 | 9.860 | 1.376 | 2.074 |

*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This table reports the impact of the reform, comparing regions that enforced the reform more or less. Column 1 reports the effect on the total number of IPV reports per 10,000 women. Columns 2 to 4 show the impact of the reform on the number of IPV reports per 10,000 women initiated by the victims (column 2), by injury report (column 3), or by the policy or family (column 4). The reform took place after the third quarter of 2012. All specifications control for regional and quarter-year fixed effects, women's unemployment rate, women's participation rate, foreign and Spanish men's unemployment and participation rates, and the population of women over 18 years old. All standard errors are clustered at the regional level, and wild-bootstrap is performed.

*** p<0.01, ** p<0.05, * p<0.1.

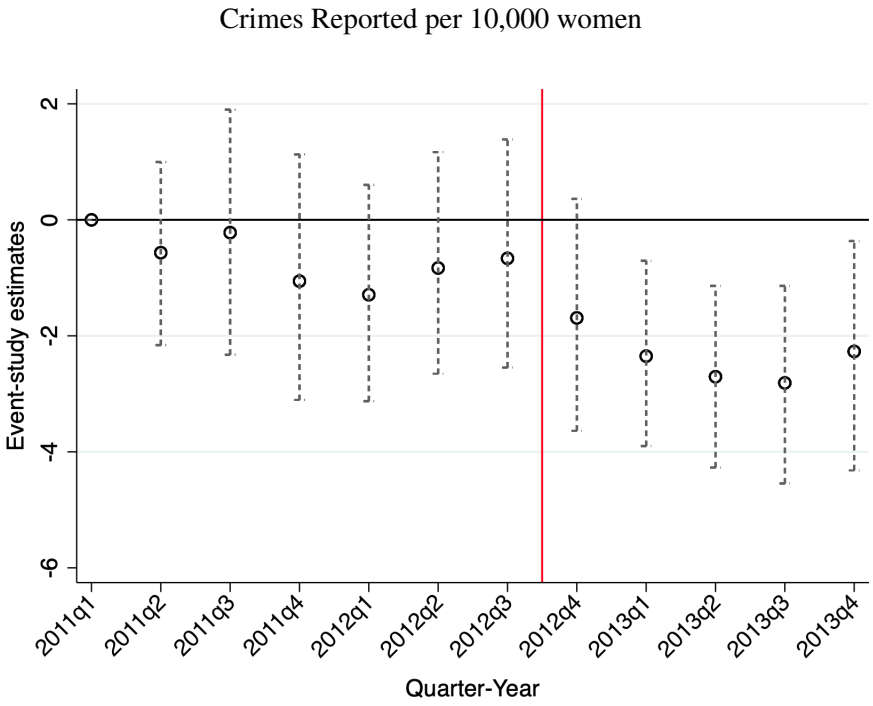
# A Appendix Tables and Figures

Figure A1: Percentage of Undocumented Immigrants by Nationality in 2011

| Nationality | % Undocumented | Nationality | % Undocumented |
|---|---|---|---|
| Dominica | 75.40 | Korea, South | 25.85 |
| Chile | 67.91 | Senegal | 24.34 |
| Guatemala | 57.85 | Benin | 24.27 |
| Saudi Arabia | 57.10 | Burkina Faso | 23.05 |
| Liberia | 56.83 | Guinea-Bissau | 22.93 |
| Ivory Coast | 55.49 | Colombia | 22.48 |
| Paraguay | 53.40 | Togo | 22.30 |
| Nicaragua | 52.08 | Bosnia and Herzegovina | 21.88 |
| Honduras | 50.90 | Bangladesh | 21.47 |
| Vietnam | 50.81 | Jordan | 20.02 |
| Ethiopia | 49.90 | Mali | 19.96 |
| Costa Rica | 48.80 | Cuba | 19.41 |
| Nepal | 47.82 | Ecuador | 19.21 |
| El Salvador | 47.73 | Lebanon | 16.93 |
| Panama | 47.35 | Syria | 16.86 |
| Congo | 45.73 | Serbia | 16.63 |
| Kazakhstan | 44.96 | Dominican Republic | 16.17 |
| Brazil | 44.31 | Peru | 15.90 |
| Equatorial Guinea | 43.39 | Indonesia | 15.22 |
| Venezuela | 37.72 | Ghana | 14.83 |
| Israel | 34.93 | South Africa | 13.62 |
| Angola | 33.90 | Mauritania | 12.95 |
| Argentina | 33.77 | India | 12.77 |
| Macedonia | 33.10 | Gambia | 12.17 |
| Sierra Leone | 31.95 | Pakistan | 11.51 |
| Uruguay | 31.66 | Tunisia | 10.32 |
| Iran | 30.77 | Moldova | 10.30 |
| Guinea | 30.06 | Japan | 10.28 |
| Turkey | 29.36 | Egypt | 8.83 |
| Cameroon | 28.61 | Algeria | 7.70 |
| Bolivia | 28.27 | Philippines | 5.45 |
| Iraq | 27.95 | Thailand | 3.61 |
| Nigeria | 27.92 | Kenya | 1.14 |
| Cape Verde | 25.93 | | |

*Source:* Jiménez-Rubio and Vall Castello (2020)
*Notes:* This table reports the percentage of undocumented immigrants by nationality. This percentage is based on the number of individuals from a given nationality living in Spain in 2011 (as reported in the 2011 census) and the number of individuals of that nationality with a legal residence permit to live in Spain based on the Spanish Ministry of Employment and Social Security.

# Figure A2: Event Studies on Number of IPV Crimes Reported




*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This figure reports the estimates and the 95 percent confidence intervals of the interaction term of Reg More Enforcement and Post Reform dummies of the event studies estimation derived from 3. The graph reports the estimates for the number of crimes reported per 10,000 women. The reform took place after the third quarter of 2012. In the estimations, we control for regional and quarter-year fixed effects, as well as women's unemployment rate, women's participation rate, foreign and Spanish men's unemployment and participation rates, and the population of women over 18 years old. All standard errors are clustered at the regional level, and wild-bootstrap is performed.

# Table A1: Impact of the Reform on Applications for Protection Orders

| | Applications for Protection Orders per 10,000 Women | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Foreign Women | 11.373*** | 9.707*** | 5.590* | 5.600* | 5.616* | 6.441 | 5.969 |
| | (0.000) | (0.000) | (2.893) | (2.873) | (2.857) | (4.401) | (4.200) |
| Post Reform | -0.998* | -0.104 | -1.488** | -1.358** | -1.603** | -1.589** | |
| | (0.512) | (0.789) | (0.589) | (0.653) | (0.635) | (0.614) | |
| Foreign * Post Reform | -1.961*** | -2.061*** | -1.808*** | -1.806*** | -1.817*** | -1.814*** | -1.793*** |
| | (0.630) | (0.662) | (0.654) | (0.654) | (0.658) | (0.656) | (0.649) |
| Female UR | | 0.131* | 0.072 | 0.070 | 0.078 | 0.067 | 0.065 |
| | | (0.068) | (0.055) | (0.060) | (0.061) | (0.067) | (0.075) |
| Female PR | | | 0.238* | 0.239* | 0.233* | 0.225 | 0.247* |
| | | | (0.137) | (0.138) | (0.133) | (0.147) | (0.144) |
| Foreign Male UR | | | | 0.036 | 0.047 | 0.048 | 0.051 |
| | | | | (0.035) | (0.041) | (0.040) | (0.041) |
| Spanish Male UR | | | | -0.068 | 0.003 | 0.010 | 0.057 |
| | | | | (0.111) | (0.229) | (0.117) | (0.188) |
| Foreign Male PR | | | | | 0.120*** | 0.119*** | 0.095** |
| | | | | | (0.000) | (0.000) | (0.044) |
| Spanish Male PR | | | | | 0.283 | 0.287 | 0.148 |
| | | | | | (0.188) | (0.189) | (0.517) |
| Female Pop over 18 | | | | | | 0.001 | 0.001 |
| | | | | | | (0.001) | (0.001) |
| Region FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Year-Quarter FE | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Reg Linear Trend | | | | | | | ✓ |
| Observations | 408 | 408 | 408 | 408 | 408 | 408 | 408 |
| $R^2$ | 0.793 | 0.802 | 0.822 | 0.822 | 0.826 | 0.827 | 0.837 |
| Mean Dep. Variable | 14.498 | 14.498 | 14.498 | 14.498 | 14.498 | 14.498 | 14.498 |

*Source:* Quarterly Judicial Reports, years 2011-2013.

*Notes:* This table reports the impact of the reform on the number of applications for protection orders per every 10,000 women. The reform took place after the third quarter of 2012. Column 1 only controls for regional and quarter-year fixed effects. Column 2 also controls the women's unemployment rate, and column 3 for women's participation rate. Column 4 additionally controls for foreign and Spanish men's unemployment rates. Column 5 controls for foreign and Spanish men's participation rates. Column 6 controls for the population of women over 18 years old. Finally, column 7 adds regional linear time trends. All standard errors are clustered at the regional level, and wild-bootstrap is performed.

*** p<0.01, ** p<0.05, * p<0.1.