DOES THE EXISTENCE OF A WOMEN'S POLICE STATION INCREASE THE COSTS OF COMMITTING AGGRESSION?

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ABSTRACT: Intimate partner violence (IPV) includes physical, sexual, and psychological aggression by a current or former intimate partner. Women decide to report the violence not only when they can support themselves, but also when external interventions are effective. Thus, the distance to the women's police station (DEAM) could reduce the incentives to commit aggression since the aggressor tends to be punished. For this analysis, data from the Notifiable Diseases Information System (SINAN) of the Ministry of Health for the period 2010 to 2019 were used and the methodology used was a fixed-effect model. The results show that the distance from the health unit to the nearest women's police station has a negative effect, that is, the further away from the police station, the fewer complaints women make. However, when we divide the municipalities into those who have DEAM and those who don't we find that women who live in a municipality that has a DEAM report more than those who also live but need to travel 200km.

Keywords: Domestic violence, women, police station, aggression, distance.

JEL CODES: C23, J12, J18

RESUMO: A violência por parceiro íntimo (VPI) inclui agressão física, sexual e psicológica por um parceiro íntimo atual ou anterior. As mulheres decidem denunciar a violência não apenas quando podem se sustentar, mas também quando as intervenções externas são eficazes. Assim, a distância até a Delegacia da Mulher (DEAM) poderia reduzir os incentivos à agressão, uma vez que o agressor tende a ser punido. Para esta análise, foram utilizados dados do Sistema de Informação de Agravos de Notificação (SINAN) do Ministério da Saúde para o período de 2010 a 2019 e a metodologia utilizada foi um modelo de efeito fixo. Os resultados mostram que a distância da unidade de saúde até a delegacia da mulher mais próxima tem efeito negativo, ou seja, quanto mais distante da delegacia, menos denúncias as mulheres fazem. Porém, quando dividimos os municípios entre os que têm DEAM e os que não têm descubro que as mulheres que moram em um município que tem DEAM relatam mais do que as que também moram, mas precisam percorrer 200km.

Área 12 – Economia Social e Demografia Econômica

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1. INTRODUCTION

Intimate partner violence (IPV) describes a current or former spouse's physical, sexual, and psychological aggression. One in three women has experienced physical and/or sexual partner violence, or sexual violence by a non-partner (Garcia-Moreno, 2013). Brazil is the 5th country with the most murders of women among 83 countries surveyed by the World Health Organization (WHO, 2005). In Brazil, immediate relatives (father, stepfather, son, and brother), partners, and ex-partners are responsible for 67.2% of the aggressions that women suffer (Waiselfisz, 2015).

Violence against women impacts several aspects of their lives and reflects on physical and mental health problems (Coker et al., 2000; Breiding et a., 2008; Devries et al., 2011; Garcia-Moreno, 2013), on her children (Aizer, 2011; Neggers et al., 2004; Valladares et al., 2002; Garcia-Moreno, 2013; Rawlings and Siddique, 2018) on her productivity and her work histories (Leone et al., 2004; Riger, Raja & Camacho, 2002; Tolman & Rosen, 2001).

Brazil is enacting measures to reduce IPV ranging from legislation to specific lines to report violence. In addition, other mechanisms were created to increase the number of reports and the safety of the victim, as they provide specialized care for cases of female violence: *Delegacias Especializadas de Atendimento das Mulheres* (Police Stations Specialized in Serving Women, DEAMs).

Brazil pioneered the creation of women's police stations designed to respond specifically to violence against women in Latin America in 1985 (Jubb et al., 2010). Since then, states have been implementing this mechanism and, in 2018, according to Brazilian Institute of Geography and Statistics (IBGE) data, there were 460 DEAMs, that is, approximately one women's police station for every twelve municipalities. So far variations of the model have spread across other parts of the globe: Argentina, Bolivia, Ecuador, Ghana, India, Kosovo, Liberia, Nicaragua, Peru, the Philippines, Sierra Leone, South Africa, Uganda, and Uruguay (Perova and Reynolds 2017). In 2010, Brazil had the largest number of police stations in Latin America (Jubb et al., 2010).

In developing countries, reporting rates for crimes, in general, are lower (Soares, 2004). This under-reporting or under-utilization of the criminal system is possibly driven by both the supply and demand sides. On the supply side, police officers do not take IPV complaints seriously, are hostile, or low punishment affects trust in the system (Stepan et al., 2011; Boesten, 2012; Amaral et al., 2021 a; Banerjee; et al., 2021). According to an opinion survey by Gallup (2018), only 42% of respondents in Latin America report trusting local police, while these levels are almost double in regions such as Western Europe (80%) and the United States and Canada (82%). On the demand side, women fear the male backlash, feel ashamed and have several economic and social difficulties (Moreno, Guedes and Knerr, 2012; Amaral et al., 2021 b). These are all factors for accepting violence since the man is the breadwinner.

The expansion of women's police stations in Brazil took place after the 2006 "*Maria da Penha"* law against IPV. The law expanded the responsibilities and mandate of DEAMs as well as other police stations by pointing out specific measures to be taken in case of domestic violence. Subsequently, the law established a mandate for federal, state, and municipal governments and non-governmental organizations to collaborate in the creation of DEAMs. In addition, the law strengthened the work of different public entities requiring the creation of multidisciplinary teams specialized in medical, psychological, and health support for survivors of domestic violence. Finally, the law strengthened funding mechanisms for state-level measures: the federal government provides funding to states committed to implementing the "*Maria da Penha*", which includes the establishment of DEAMs.

Although women's police stations are increasingly popular, little is known about their effectiveness. According to Ellsberg et al. (2015), one of the main public policies to address violence against women in low-income and middle-income countries is to establish specialized police stations, especially in Latin America. Perova and Reynolds (2017) pointed out that the establishment of a DEAM tends to cause a reduction in intimate partner violence (IPV) since the cost of violence increases as the prosecution of aggressors increases. Furthermore, the existence of a DEAM can facilitate the dissolution of abusive relationships and reduce conflicts in relationships that remain (Manser and Brown, 1980). This is because restraining orders are issued that assist court procedures, thus, DEAMs may be contributing to creating safe outside options for abused women, so if they decide to leave the marriage, they are less likely to be victims of the abuser's retaliation (Perova and Reynolds, 2017).

This work contributes to the literature as it tries to understand the importance of the role of the women's police station in Brazil. This paper analyses the impact of distance between the DEAM and the health unit on IPV. There are no studies evaluating the challenges to accessing this service in Brazil, so we fill this gap in the literature. Comprehending the access to DEAM would improve its ability to help women in need. This analysis is important since Brazil has approximately one DEAM for every twelve municipalities and is a country with large geographic areas where the distance to protective mechanisms has a large impact. No work so far has used the measure of distance to DEAM to measure the effectiveness of these mechanisms. The methodological approach was a panel data for 2010 until 2019 fixed effect model using data from the Notifiable Diseases Information System (SINAN).

Studies on violence against women are based on police reports (Do Amaral et al., 2001), however, since many women who were or are still victims do not always report to this type of service, studies may not correctly elucidate the magnitude of the problem (Silva, 2003). When the woman goes to the health unit, this could be considered a warning sign, given the difficulty that victims in this situation have in seeking help. Healthcare facilities are often the first or only point of contact for women that suffered from IPV (WHO, 2005; Hegarty, Taft, and Feder, 2008). Studies show that the relationship between violence and various physical, reproductive, and mental health problems, as well as the greater use of health services by these women, emphasizes the need to reflect on how the health sector has been organized to deal with women in situations of violence (Galvão and Andrade, 2004). According to Ribeiro (2017), assistance to the victim needs to be provided through a multidisciplinary approach that allows for a complete intervention, which provides greater safety to the victim.

The paper is organized as follows. Section 2 presents background about DEAM in Brazil and IPV. Section 3 presents the data with the identification strategy. Section 4 reports the results. Section 5 concludes the paper.

2. BACKGROUND

Victims only report domestic violence when it becomes unbearable when they feel that their lives are at risk (Ribeiro, 2017). According to Tauchen et al. (1991), two conditions are necessary for women to decide to report aggression: i) outside interventions are effective in combating violence; ii) the victim can support herself financially, in cases where she depends on her aggressor. Safer outside options can discourage the use of violence within the marriage (Aizer, 2010).

The first place where women break the silence is in health care facilities (WHO, 2005; Hegarty, Taft and Feder, 2008; Ribeiro, 2017). Therefore, the healthcare system has an important role to play in a response to violence (WHO, 1997; Schraiber et al, 2002;

Garcia-Moreno, 2015). However, a barrier in the healthcare services appears because the healthcare professionals do not feel capable or comfortable discussing domestic violence (Taylor et al., 2013). These professionals have reported a lack of time, training, resources, and privacy on how to ask about domestic violence which prevented them from inquiring about abuse (Jaramillo and Uribe, 2001; Beynon et al., 2012; Sundborg et al., 2012). Victims of domestic violence have reported that these professionals have been inadequate, inappropriate, and unhelpful in responses to disclosure (Pratt-Erickson et al., 2014; Trevillion et al., 2011, 2014). Training can help healthcare professionals to identify and respond better to victims of domestic abuse (Beynon et al., 2012). These professionals can help women to identify and name what is happening to them since they validate their experiences and inquiry about the abuse (García-Moreno et al., 2015). Thus, it is a way to empower those women and make changes that might improve their self-efficacy (García-Moreno et al., 2015).

Farmer and Tiefenthaler (1996) pointed out that battered women use shelters and other support services to the aggressor their ability to leave the relationship. Therefore, the use of these services may be a sign of women's unwillingness to tolerate domestic violence. There are several specialized services in Brazil[3], in this work we are analyzing the distance from the healthcare system to the Women's Specialized Police Station (DEAM).

The DEAMs are specialized units of the Civil Police that assist women in situations of violence. The Maria da Penha law[4] gave additional impetus to the creation of DEAMs: (i) expanding the responsibilities and mandate of DEAMs as well as other police stations, pointing out specific measures to be taken in case of domestic violence; (ii) establishing a mandate for the federal, state, and municipal governments, as well as NGOs, to collaborate in the creation of DEAMs. With the creation of DEAMs, women had a "starting point" to seek support in combating violence.

However, on average, each DEAM has 2.6 officers and is generally below the recommended number of officers, depending on the size of the city (Brasil, 2010)[5]. Thus, there is difficulty in carrying out the investigation, since not all women return to the police station after filling the report. Furthermore, the police investigation of crimes of domestic violence through the police station is time-consuming. Most civil servants are not prepared or trained to care for women (Brasil, 2013).

The women's police stations do not provide some specific services and have limited hours of operation (Souza and Cortez, 2014; Perova and Reynolds, 2017). According to a study conducted by Sardenberg and Gomes (2010), interviewing 40 DEAMs located in all state capitals, only 65% were opened during business hours. In addition, half of them offered psychological counseling to victims, but only a quarter offered legal assistance.

Therefore, it is important to evaluate whether DEAMs affect the incidence of IPV and to assess the magnitude of this effect. Amaral et al. (2021 b) found that opening a women's police station is associated with an increase in police reports of crime against women in India by 29%, driven by domestic violence. Sukhtankar, Kuks-Wisner, and Mangla (2022) evaluated police responsiveness to women in India. The authors pointed

[3] The full list can be seen at: http://www.spm.gov.br/sobre/publicacoes/publicacoes/2011/rede-de-enfrentamento

[4] Law nº 11.340/2006

[5] As stated in the Technical Standard, the DEAM staff must be by the size of the cities: up to 100,000 inhabitants - 21 police officers; up to 300 thousand inhabitants - 42 police officers; up to 500 thousand inhabitants - 63 police officers; over 1 million inhabitants - 84 police officers; over 1 million inhabitants - 105 police officers.

out that officers in stations with the Women's Help Desk[6] are more likely to register cases of gender-based violence meaning that police responsiveness can be improved through greater gender representation within the police. Natarajan and Babu (2020) pointed out that women's police stations have the potential to provide a safety net, but they need to be properly established, managed and maintained. Tenkorang (2022) pointed out that Ghanaian women may not know about the Domestic Violence and Victim Support Unit (DOVVSU) and the lack of visibility is an obvious barrier to accessing their services.

Distance and unavailability of services offer challenges to women who are victims of violence (Adler, 1996). Williams and Mickelson (2004) pointed out that limitations on accessing the sources are disadvantages for women without income or with low levels of income. The geographic location of protection services for domestic violence is important for vulnerable and low-income populations (Benavides, Bellatin, and Cavagnoud, 2017). According to Kavanaugh et al. (2019) improving access to justice for women reduces domestic violence. So, research on domestic violence services should examine geography (Hetling and Zhang, 2010).

In Brazil, Perova and Reynolds (2017) evaluated the impact of DEAM on the female homicide rate between 2004 and 2009. The authors found that establishing a DEAM in a metropolitan area reduces the female homicide rate by 1.23 deaths per 100,000 women ages 15-49 years. Souza and Cortez (2014) evaluated aspects of the functioning of the DEAM pointing to the inadequacy of physical and human resources in addition to the lack of appreciation of employees by the state. Given the lack of studies evaluating access to the women's police station in Brazil, our analysis seeks to mitigate this gap by showing that access matters when it comes to domestic violence in a country like Brazil.

3. DATA AND IDENTIFICATION STRATEGY

a. DATA

The data on victims of violence come from the Notifiable Diseases Information System (SINAN) of the Ministry of Health on an annual basis from 2010 to 2019. Since 2009[7], the investigation of interpersonal or self-inflicted violence became part of SINAN. This form is in the Surveillance System for Violence and Accidents - VIVA[8], a continuous component, whose objective is to capture information on the profile of care for domestic, sexual, and/or other violence (self-inflicted and interpersonal) in health units, characterizing the profile of the victims, the type, the place, the profile of the likely perpetrator of the aggression, among others.

The notification of violence is carried out using the Interpersonal/Self-Inflicted Violence Notification Form. This form is filled out at the health services when there is suspicion or confirmation of the occurrence of domestic, sexual, and/or another type of violence, both interpersonal and self-inflicted. This form is entered into the Notifiable Diseases Information System (SINAN NET) by the local health teams. The form contains information on general data on the person who suffered violence, occurrence data, typology of violence, consequences of violence, injuries resulting from violence, data on the likely perpetrator of violence/aggression, time of violence, evolution and refer, and final classification of the case in ICD-10.

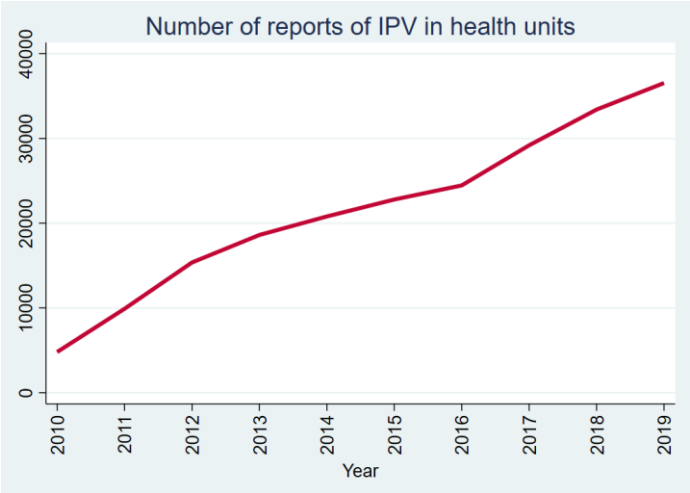
[6] Dedicated spaces to respond to women's cases, located within regular police station

[7] We excluded the observations for 2009, the implementation year of violence reports, since the coverage around the country was limited

[8] The Surveillance System for Violence and Accidents (VIVA) consists of two components: I) Surveillance of domestic, sexual and/or other types of violence in health services (Continuous VIVA); and II) Surveillance of violence and accidents in urgency and emergency units (Inquiry VIVA)5.

Violence and accidents are characterized according to the definitions contained in Chapter XX – External Causes of Morbidity and Mortality – of the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10). The types of violence considered in this paper are classified as assaults (Y09). Figure 1 shows the growth of intimate partner violence report in health units.

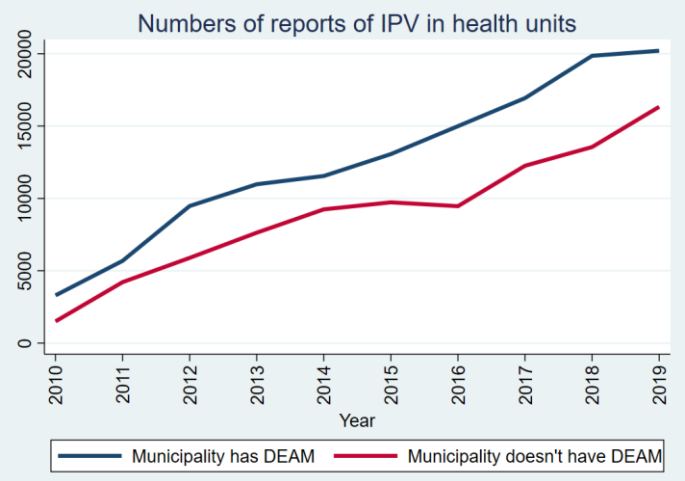
Figure 1 – Reports of IPV in health units



Source: Elaborated by the author

Since the woman's residence is confidential information, we used the addresses of the health units that the women reported as proxies for their residences. The first place that women go to when experiencing violence is often a health unit (Garcia et al., 2016), so it tends to be the closest place to their home. Based on the CNES (National Registry of Health Facilities) of each unit, a search for addresses was performed in the available databases[9]. Subsequently, the geographic coordinates of each of these units were collected. Figure 2 shows the number of reports of IPV in health units over the years regarding if the municipality has or does not have a DEAM

Figure 2 – Numbers of reports of IPV if the municipality has or does not have a DEAM

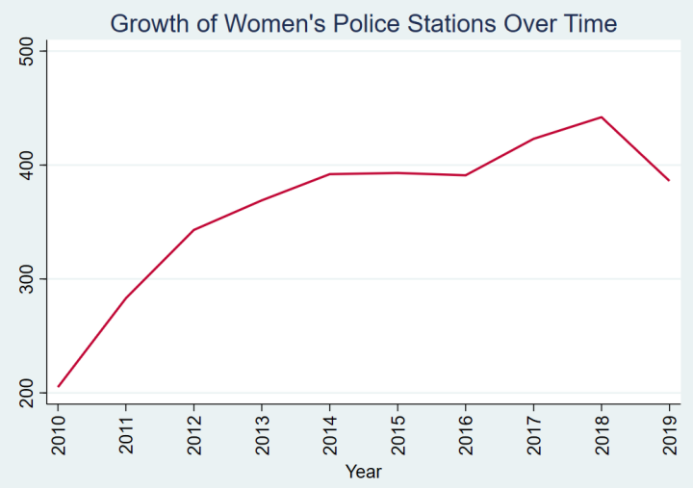


Source: Elaborated by the author

[9] All the CNES that were not registered were removed from the database

We used an additional source of data to verify the presence of the women's police station (DEAM) in the municipality of the occurrence report. This data came from the Municipal Basic Information Survey (MUNIC) of the IBGE in 2009, 2012, 2014, 2018, and 2019 where the municipalities responded whether they had DEAM or not[10]. If the answer was yes, the addresses from the women's police station were collected based on the official pages of municipal governments or civil police. Subsequently, the geographic coordinates of each of these women's police stations were collected. It was possible to calculate the distance from each health unit to the nearest women's police station. Also, we added a dummy variable for each year the municipality responded that it has a police station (assuming 1 if so and 0 otherwise). Figure 3 shows the number of women's police stations over the years.

Figure 3 – Women's police station over time



Source: Elaborated by the author

In addition, only women victims of violence who informed that the sex of the likely aggressor was male were kept in the database. Also, only women of legal age, that is, 18 years old, were kept in the database so that IPV could be analyzed. The observations were aggregated so that the analysis could be done at the health unit's level. The dependent variable is the number of incidents of intimate partner violence in each health unit.

To capture the municipal wealth, we included GDP per capita from the IBGE. Also, we included the per capita spending on health for each municipality each year from Finanças do Brasil (a database from the National Secretary of the Treasury, FINBRA). Since IPV is associated with cash transfer programs we included the average value per family of the municipality's *Bolsa Família* per year from the Ministerio de Desenvolvimento Social (Ministry for Social Development, MDS). *Bolsa Família*[11] is a cash transfer program in Brazil and the recipients are the women in the household.

[10] As the data from the women's police station were not collected for the same year as the SINAN data, the data was replicated until the next MUNIC was held (ex: in 2010, the data from the police station answered in the 2009 survey were used; in 2011, the data from 2009 were also used; in 2013, data from the 2012 survey were used, and so on).

[11] Only poor families (who receive up to BRL 140.00) or extremely poor families (who receive up to BRL 70.00) receive the *Bolsa Família*.In addition, until 2013 all families had to have children between 0 and 15 years old. From March 2013, all extremely poor families joined the program regardless of the existence of children between 0 and 15 years old.

Finally, we included the homicide rates of the municipality to capture the criminality from the atlas of the violence by the economic research institute applied (IPEA). Table 1 presents summary statistics of the sample:

Table 1 - Summary statistics

Variables	Mean (sd)	Min	Max
Log of occurrences of IPV	1.13 (0.9)	0	7.05
Inverse Hyperbolic sine of occurrences of IPV	1.42 (1.1)	0	7.7
Distance to the nearest women's police station (in kilometers)	32.09 (43.17)	0.003	530.6
Women's age is between 18 and 29 years	0.37 (0.36)	0	1
Women's age is between 30 and 39 years	0.25 (0.32)	0	1
Women are self-declared as white	0.47 (0.41)	0	1
Women are married	0.54 (0.4)	0	1
Women completed elementary school	0.11 (0.23)	0	1
Women completed high school	0.22 (0.31)	0	1
Women completed higher education	0.04 (0.15)	0	1
The violence happened other times	0.6 (0.4)	0	1
Agressor was drunk	0.57 (0.38)	0	1
The violence occurred at home	0.77 (0.32)	0	1
The violence occurred on a weekday	0.8 (0.3)	0	1
Log of the population of the municipality	11.22 (2.1)	6.7	16.32
Per capita expenditure on health	639.6 (353.53)	0	38,531
Homicides rates	21.5 (19.6)	0	222
Average value per family of the municipality's *Bolsa Família* per year	152.67 (32.9)	46.53	376.65
GDP per capita of the municipality	30,356 (24,990)	2,892	815,698
Number of observations *(N)*	43,367	43,367	43,367

Source: Made by the authors

b. IDENTIFICATION STRATEGY

Transformations are commonly used by researchers to deal with skewed distributions. One of them is the natural log transformation that truncates values from a positively skewed distribution and pulls them closer to the mean to achieve a normal distribution. Since the number of reports of IPV in the health unit can be null to do a log transformation it is necessary to use $\log(x) = 1 + x$. Another transformation is the inverse hyperbolic sine (IHS) which can be expressed as: $\text{IHS}(x) = \log(\sqrt{x^2 + 1} + x)$. To deal with skewed distribution, we applied both transformations to the outcome variable.

To identify the effects of the distance to the DEAM on the intimate partner violence report in health units, we apply a fixed effect approach. We use the following specification:

$$Y_{ht} = \beta_1 D_{1ht} + \beta_2 D_{2ht} + \beta_3 D_{3ht} + \beta_4 D_{4ht} + \gamma X_{ht} + \alpha_h + \theta_t + \mu_{ht}$$

Where Y_{ht} is the outcome variable – either the log of intimate partner violence reports in health units (h) in the year (t) or the inverse hyperbolic sine of intimate partner violence reports, to account for level differences and to estimate the percent effect it has D_{mt} are four dummies according to the nearest distance of the health unit and the DEAM equal to 1 if the distance[12] is: i) distance between 0 and 50 kilometers; ii) distance between 51 e 100 distance between; iii) distance between 101 e 150 kilometers; iv) distance between 151 e 200 distance between; v) distance above 200 kilometers. γX_{ht} is all the controls that are in table 1. α_h is health unit fixed effects and θ_t year fixed effects. μ_{ht} is the error term. Standard errors are clustered at the municipality level. Also, we have a model with only the controls and a term for the state-by-year fixed effects. We replicate the main analysis by dividing the sample by having a women's police station or not to test for heterogeneous effect.

4. RESULTS

The first step of the analysis was to carry out the fixed effects model to estimate the effects of distance on reports of IPV in health facilities through the inclusion of distance dummies. Table 2 contains the results and shows that the closer to the police stations the women are, the fewer reports of intimate partner violence in the health units compared to women who need to travel more than 200 kilometers to get to the nearest police station. This could mean that women who live nearby would be using police services rather than using hospitals as the first contact after the assault.

Table 2 – Results – Distance in bins

Variables	Log IPV			Inverse Hiperbolic Sine IPV		
	Model (I)	Model (II)	Model (III)	Model (I)	Model (II)	Model (III)
Distance (0- 50km)	-0.15**	-0.16***	-0.15***	-0.18**	-0.21***	-0.19***
	(0.07)	(0.06)	(0.06)	(0.09)	(0.07)	(0.07)

[12] The distances used were based on Lindo et al. (2020) since the closing of a women's police station would have impacts as well as the closing of abortion clinics. Distances have been adapted to kilometers instead of miles.

Distance (51-100km)	-0.13 (0.07)	-0.17*** (0.06)	-0.16** (0.06)	-0.17 (0.09)	-0.22*** (0.07)	-0.2** (0.09)
Distance (101- 150km)	-0.2*** (0.07)	-0.21*** (0.06)	-0.19*** (0.06)	-0.24*** (0.09)	-0.25*** (0.07)	-0.24*** (0.07)
Distance (151- 200km)	-0.19** (0.08)	-0.21*** (0.07)	-0.19*** (0.08)	-0.25** (0.1)	-0.26*** (0.09)	-0.24*** (0.09)
State by year FE	Yes	No	No	Yes	No	No
Health unit FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes
N	43,367	43,367	43,367	43,367	43,367	43,367

Source: Self Elaboration
Significance levels: *** p<0.01, ** p<0.05.
All regressions have standard errors clustered by municipality level

To see if there are heterogeneities between the municipalities that have and do not have DEAM, we estimated the effect of the distance in the IPV by separating municipalities in this category. First, it is important to emphasize that due to few observations that have distances between 101 and 200km with a DEAM in the municipality, these variables were omitted from the estimates. In addition, model (I) considers fixed effects of health units and municipalities, while model (II) in addition to including these fixed effects also considers covariates.

Table 4 – Heterogeneous effects – the municipality has a DEAM

Variables	Log IPV		Inverse Hiperbolic Sine IPV	
	Model (I)	Model (II)	Model (I)	Model (II)
The municipality has a Women's police station				
Distance (0- 50km)	0.07** (0.3)	0.11 (0.06)	0.08** (0.3)	0.14** (0.07)
Distance (51- 100km)	0.3 (0.18)	0.12 (0.15)	0.4 (0.25)	0.17 (0.19)
Distance (101- 150km)	-	-	-	-
Distance (151- 200km)	-	-	-	-
N	18,596	18,596	18,596	18,596
The municipality does not have a Women's police station				
Distance (0- 50km)	-0.17** (0.08)	-0.16 (0.08)	-0.22** (0.1)	-0.21 (0.11)
Distance (50- 100km)	-0.18** (0.08)	-0.16** (0.08)	-0.23** (0.1)	-0.21** (0.1)

Distance (100- 150km)	-0.21*** (0.07)	-0.19*** (0.07)	-0.26*** (0.09)	-0.24** (0.11)
Distance (150- 200km)	-0.22** (0.09)	-0.19** (0.09)	-0.29*** (0.12)	-0.26** (0.11)
Health unit FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
N	24,236	24,236	24,236	24,236

Source: Self Elaboration
Significance levels: *** p<0.01, ** p<0.05.
All regressions have standard errors clustered by municipality level

Table 4 suggests that for those municipalities that have a DEAM the closer the women are to the women's police station more they report to the hospital. This suggests that since the municipality has a protective mechanism, like a DEAM they report more to the hospital, possibly because they know where they will be referred. On the other hand, those municipalities without a women's police station have a negative association between the distance and IPV meaning those women closer to the DEAM are reporting less than those who need to travel 200km. This may be happening because women who live closer to a DEAM may be using police reporting more than in the hospital unlike those who live too far from a police station and the only way out is to report to the hospital.

4.1 ROBUSTNESS CHECK

As a placebo check, we see if the estimated effects are different than those would be for intimate partner violence. To do this, we estimated the effect of distances on the municipality's homicide rates. In Brazil, more men than women die daily, so this municipal homicide rate would be being pulled by the death of men which is not the scope of the woman's police station. Negative results are not expected to affect municipal homicide rates since only female homicide is attended at the DEAM. In Table 3 we have the results of the placebo test that have no statistically significant effect of the distance on the homicide rate.

Table 3 – Placebo test

Variables	Log homicide			Inverse Hiperbolic Sine homicide		
	Model (I)	Model (II)	Model (III)	Model (I)	Model (II)	Model (III)
Distance (0- 50km)	-0.07 (0.15)	-0.06 (0.13)	0.14 (0.17)	-0.08 (0.17)	-0.06 (0.14)	0.17 (0.21)
Distance (51- 100km)	-0.09 (0.15)	-0.1 (0.14)	0.07 (0.17)	-0.11 (0.17)	-0.11 (0.15)	0.09 (0.2)
Distance (101- 150km)	-0.2 (0.15)	-0.24 (0.13)	0.1 (0.17)	-0.25 (0.16)	-0.26 (0.14)	0.12 (0.21)

Distance (151-200km)	-0.04 (0.16)	-0.06 (0.14)	0.05 (0.17)	-0.04 (0.16)	-0.06 (0.15)	0.07 (0.21)
State by year FE	Yes	No	No	Yes	No	No
Health unit FE	No	Yes	Yes	No	Yes	Yes
Year FE	No	Yes	Yes	No	Yes	Yes
Controls	No	No	Yes	No	No	Yes
N	43,366	43,366	43,366	43,366	43,366	43,366

Source: Self Elaboration
Significance levels: *** p<0.01, ** p<0.05.
All regressions have standard errors clustered by municipality level

5. CONCLUSION

The creation of DEAMs was an important step in the fight the violence against women, together with *Maria da Penha* and the Femicide Law. However, many of these establishments are far away, with one police station for an average of twelve municipalities, in addition to lacking trained professionals and having a precarious structure. The present article pointed out that the distance from the health unit to the nearest women's police station has a negative effect on the reports in the health unit, that is, the further away from the police station, the fewer complaints women make. Therefore, the expansion of DEAMS is extremely important to create a safe environment where women can report their aggressors.

Furthermore, this is an extremely important analysis in a country like Brazil that is geographically large and dispersed. Brazil has areas that are more remote and difficult to access, such as the Amazon Forest. And it is still an underdeveloped country where many people live in poverty and have no other means of getting around than with public transportation. Many times, women do not arrive at the police stations due to the difficulty in accessing them. Thus, it is necessary to increase the number of police stations so that the complaint can be made safely, and women feel protected.

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