Care Infrastructure and Domestic Violence: Evidence from Bogotá, Colombia

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Abstract

In many Latin American countries, women's caregiving responsibilities remain undervalued, potentially increasing their vulnerability to domestic violence. How does addressing this unpaid care burden affect the incidence of domestic violence against women (VAW)? This paper provides evidence from Bogotá's *Care Blocks*—the first comprehensive care system for caregivers in Latin America and the Caribbean—launched in 2020 to support women's caregiving needs. Using the staggered rollout of *Care Blocks* across cadastral zones, I examine their impact on the incidence and severity of reported VAW.

Leveraging Natural Language Processing (NLP) to classify the risk levels of VAW-related emergency calls, I apply a dynamic difference-in-differences (DiD) approach to estimate changes in both the frequency and severity of reports following program implementation. I find that the introduction of *Care Blocks* increases the number of VAW-related calls by 40.7% compared to areas that never received the intervention, and by 36.3% relative to those scheduled for later implementation. However, I detect no significant effect on high-risk calls—those signaling an immediate threat to life. These results suggest that *Care Blocks* reduce barriers to reporting violence but may not directly mitigate the structural factors that deter women from reporting severe abuse.

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1 Introduction

Approximately one in three women worldwide experiences physical or sexual violence, predominantly perpetrated by an intimate partner (WHO 2013). A central obstacle to addressing domestic violence against women is the persistent underreporting, often termed the 'reporting gap,' reflecting the substantial discrepancy between actual prevalence and formally registered cases (Banerjee et al. 2021; Boesten 2012). Bridging this gap necessitates accessible and confidential reporting mechanisms, alongside interventions that empower women to overcome structural and psychological barriers to reporting (United Nations 2023; McPhee et al. 2022).

Domestic violence against women (VAW) imposes significant economic and social costs. While the consequences of VAW are well-documented, rigorous evidence on the effectiveness of interventions aimed at increasing reporting remains scarce, particularly in developing countries (Kiani et al. 2021). Distrust in the judicial system and low arrest rates for crimes against women further deter victims from reporting (Sviatschi and Trako 2024). To address this, policymakers have implemented a range of strategies, from economic empowerment programs, communications and community-based intervention, as well as institutional reforms designed to facilitate reporting (Kiani et al. 2021).

Approaches that focuses on economic empowerment include initiatives that promote labor market participation, asset ownership, microfinance, and cash transfers. While these interventions aim to reduce women's financial dependence and enhance their bargaining power, some studies suggest they may initially lead to an increase in reported intimate partner violence (IPV) cases, a subset of VAW, as shifts in traditional gender roles provoke violent resistance from partners (Hidrobo, Peterman and Heise 2016; Kim et al. 2007). This resistance can manifest as increased physical or emotional abuse. Policymakers often complement these economic policies with community-based programs (Cunradi 2010), school-based education initiatives (Shah and Seager 2021; Taylor et al. 2013), and media or social norms campaigns (Kiani et al. 2021), all of which seek to reshape societal attitudes and reduce community tolerance for VAW. Similarly, interventions promoting gender

equality and women's political participation (Iyer et al. 2012; WHO 2009; Hartmann, Hayes and Clark 2014) aim to enhance women's agency, reduce economic dependence, and utilize institutional channels for reporting IPV. These multifaceted approaches, while aiming to reduce VAW, can have complex and sometimes paradoxical effects on reported violence, warranting further investigation.

Institutional reforms approach focuses on strengthening reporting mechanisms, which can have significant economic implications by improving resource allocation and reducing the societal costs of VAW. Governments have expanded emergency hotlines that not only document VAW cases but also connect victims with psychosocial support services, such as counseling and legal aid, complementing the role of law enforcement (Romero et al. 2017). Furthermore, integrating reporting protocols into health systems encourages disclosure during medical visits and facilitates access to protection orders—legally binding documents restricting an abuser's contact with the victim (García-Moreno et al. 2015). Increasing female representation in law enforcement has also been shown to improve reporting rates and institutional responses to VAW (Harrington 2000). Another critical intervention is the establishment of Women's Justice Centers—free public institutions enhancing the judicial system's capacity to detect, process, and support victims of domestic and sexual violence through interdisciplinary legal, social, and psychological assistance (Kavanaugh, Sviatschi and Trako 2018; Sviatschi and Trako 2024).

This article examines the impact of *Care Blocks*[1], a public care infrastructure progressively implemented across 21 boroughs in Bogotá, Colombia, between 2020 and 2023,[2] on the frequency and severity of VAW. As a core component of Latin America and the Caribbean's first comprehensive Care System for caregivers, *Care Blocks* aim to alleviate the disproportionate burden of unpaid care work on women. Beyond their primary objectives, the Mayor of Bogota's operational evaluation suggest that *Care Blocks* may also play a critical role in identifying VAW cases and facilitating access to support services (Alcaldía Mayor de Bogotá 2024). However, despite these

[1] Bogotá's *Care Blocks* are free, strategically located public infrastructure (500-800 sq. meters) offering care services for women caregivers and dependents within a 1,600-meter service area.

[2] The staggered rollout of *Care Blocks* from 2020 to 2023 is detailed in Appendix 12.

promising observations, rigorous empirical evidence on their broader impact, particularly on VAW reporting, remains limited. This paper aims to fill this gap by providing a quantitative analysis of the program's effect on VAW using a dynamic difference-in-differences approach.

Care Blocks may indirectly increase VAW reporting through two primary mechanisms. First, by alleviating the burden of unpaid care work, the program enables women to allocate resources to personal and professional development, including job training, education on sexual and reproductive rights, health, and legal literacy. This empowerment, coupled with improved access to information on reporting channels and protection mechanisms, likely enhances the probability of reporting violence. Second, the establishment of *Care Blocks* as dedicated public infrastructure for caregivers—especially women—creates a supportive environment that challenges entrenched gender norms associated with VAW. This initiative has the potential to catalyze cultural shifts within communities, fostering greater awareness and collective responsibility. During the COVID-19 pandemic, increased neighborly vigilance led to a rise in reports of domestic disturbances (Nardi-Rodríguez and Paredes-López 2022). Similarly, as neighbors become more informed and proactive through *Care Block* initiatives, the program may contribute to increased VAW reports.

To test this hypothesis I employ a dynamic difference-in-differences (DiD) approach that leverages hyperlocal variation in the establishment and timing of *Care Blocks* across Bogotá's boroughs. Specifically, I compare changes in two key outcomes: (a) the volume of reported VAW cases and (b) the proportion of high-risk reports among total VAW reports. These comparisons are conducted at the cadastral zone level [3], a granular geographic division in Bogotá defined by urban land characteristics. The identification strategy contrasts changes in these outcomes over time between two groups: (i) zones located within a 31.9-minute walking distance[4] of a *Care Blocks* (treated group) and (ii) zones either outside this range (never treated group) or not yet reached by the program due to the staggered implementation of *Care Blocks* (not yet treated group). By exploiting the timing and geographic reach of *Care Blocks*, this approach isolates the causal impact of the program on

[3] Cadastral zones are administrative divisions based on land use and soil characteristics. Bogotá consists of 1,198 cadastral zones, which include urban blocks and rural areas. For this analysis, we focus exclusively on urban cadastral zones primarily designated for residential use.

[4] This represents the upper limit of walking time as reported by *Care Block's* beneficiaries.

reporting behavior.

To operationalize this analysis, I utilize data on VAW-related calls recorded by Colombia's 123 Emergency Line, operated by the Bogotá Security Department. This dataset, spanning from July 1, 2021, to December 8, 2023, provides granular insights into emergency responses, tracking each incident from the placement of the call to the arrival of the first-responding police patrol. Importantly, the data includes geo-located coordinates for all calls, enabling precise spatial analysis at the cadastral zone level. Additionally, I employ transcripts of emergency calls for Natural Language Processing (NLP)-based risk assessment, using keyword extraction to classify call severity. This method categorizes incidents by risk level, based on specific criteria such as the presence of firearms or weapons, physical injuries, or protective measures, which are often indicative of re-victimization in cases of IPV. High-risk calls are defined as those posing an imminent risk to life, while medium-risk calls involve vulnerable individuals. Using this data, the article estimates the causal impact of *Care Blocks* implementation on two key outcomes: the frequency and severity of VAW-related calls.

The findings indicate that *Care Blocks* significantly increase the total number of VAW-related calls. Relative to never-treated areas, the intervention leads to an average increase of 4.11 calls per cadastral zone, corresponding to a 40.7% increase over the pre-treatment mean of 10.11 calls. A similar effect is observed when comparing to not-yet-treated areas, where total calls increase by 3.96, representing a 36.3% rise from the pre-treatment levels. Notably, the effect of *Care Blocks* on total calls exhibits a dynamic pattern, increasing over time, with the largest effects observed at 20 and 25 months after the opening of the *Care Block* (T+20 and T+25), suggesting a sustained and growing impact. This increase in reporting has significant economic implications, potentially indicating enhanced awareness and reduced barriers to seeking help, which in turn could lead to more efficient resource allocation for victim support and a reduction in the societal costs of unreported VAW. However, while total call volume significantly increased, we find mixed, and generally insignificant, effects on high-risk VAW calls, with the exception of T+20, which showed a significant decrease. This disparity between total and high-risk calls suggests that the *Care Block*

may primarily influence the reporting of emerging or less severe cases of VAW. Alternatively, it may mean that building public infrastructure like *Care Block* in the long run effectively prevent escalation to high-risk situations, warranting further investigation into the program's preventative potential.

This article contributes to the expanding body of literature on the effectiveness of policies and strategies designed to increase VAW reporting (Sukhtankar, Kruks-Wisner and Mangla 2022; Miller and Segal 2019; Chin and Cunningham 2019; Amaral, Bhalotra and Prakash 2021). Enhancing VAW reporting remains a critical challenge in addressing and combating this form of violence. This findings provide evidence that care infrastructure, such as *Care Blocks*, can serve as effective instruments for promoting the reporting of domestic incidents. This highlights the multifaceted role of *Care Blocks* in addressing complex dimensions of VAW. By combining direct assistance with efforts to promote cultural change, the *Care Blocks* represent a novel strategy for addressing the multifaceted nature of VAW in an indirect way. Second, this paper advances the analysis of domestic violence beyond aggregate measures such as call volume by employing Natural Language Processing (NLP) techniques to identify factors associated with severe incidents. This methodological innovation enables a deeper exploration of the dynamics of domestic violence and a more nuanced understanding of victims' needs. By analyzing textual data from VAW reports, the study identifies patterns linked to the severity of incidents, including the presence of firearms or weapons, and the victimization of women with protective orders. These insights offer valuable policy implications for the design and implementation of targeted interventions aimed at reducing VAW and improving victim support.

The rest of this paper is structured as follows. The next section 2 discusses the institutional framework of the Care System of Bogotá and the characteristics of the *Care Blocks*. Section 3 describes the data. Section 4 presents the empirical strategy, and section 5 provides the main results. Section 6 offers the conclusion and policy recommendations.

2 Institutional framework

2.1 The Care System of Bogotá, Colombia

In Bogotá, Colombia—a city with a population exceeding 7.9 million—data from the National Time Use Survey (ENUT 2016–2017 and ENUT 2020–2021) reveal a stark gender disparity in unpaid care work. Women devote an average of 6 hours and 47 minutes daily to unpaid care activities, nearly three times the 2 hours and 36 minutes reported by men (DANE 2022). Addressing this inequality, the Mayor's Office of Bogotá introduced the District Care System (*Sistema Distrital de Cuidado, SIDICU*) in 2020, positioning it as a pioneering policy initiative for caregivers in Latin America and the Caribbean.

SIDICU's primary objective, inspired by Elson (2017) framework, is to reduce, redistribute, and recognize unpaid care work as a means of narrowing the gender gap. Beyond its foundational aims, evaluations of the Care System's operation have highlighted an additional, unintended outcome: *Care Blocks* have become instrumental in identifying instances of violence against women and activating care pathways. This emerging role has necessitated the allocation of resources toward socio-legal components to ensure that *Care Blocks* not only provide a safe space for women to disclose experiences of violence but also facilitate access to justice and protection mechanisms Alcaldía Mayor de Bogotá (2024).

The implementation of SIDICU relies on a network of public infrastructure known as *Care Blocks* (Manzanas del Cuidado), designed to support women caregivers and their dependents, including children, persons with disabilities, and older adults. These comprehensive facilities reflect SIDICU's overarching commitment to advancing gender equality in Bogotá, integrating care services, skills development, and support for the most vulnerable populations.

2.2 *Care Block* (Manzanas del Cuidado)

Care Blocks are free public infrastructure complexes designed to support women caregivers and their dependents. Typically spanning 500–800 square meters, these facilities are strategically located to serve households within a 20-minute walking distance, with spatial boundaries defined by the Mayor's Office of Bogotá. On average, households within 1,600 meters of a *Care Block* gain access to a comprehensive array of care services.

Each *Care Block* features two primary facilities: one dedicated to the care of dependents—including children, individuals with disabilities, and the elderly—and another tailored to addressing the specific needs of women caregivers. A cornerstone of the system is the anchor building, a specialized facility aimed at empowering women caregivers (Fig 1). The anchor building offers a comprehensive suite of programs, including educational opportunities, income-generating activities, financial literacy training, and guidance on sexual and reproductive rights. By fostering economic and physical autonomy among women, the anchor building directly tackles structural barriers associated with the unequal distribution of unpaid care work.

In addition to its service provision, the *Care Blocks* policy actively challenges traditional gender roles and promotes shared caregiving responsibilities. Programs such as *"¡A cuidar se aprende!"* ("Caregiving is Learned") engage men in caregiving activities, encouraging their involvement in household tasks and childcare (ECLAC 2024). This initiative aims to drive cultural transformation by redefining caregiving as a shared responsibility, thereby contributing to a more equitable distribution of care duties within households.

Figure 1: Prototype of the ideal *Care Block*



Source: Bogotá's Mayor Office

The system is rooted in Elson's (Elson (2017)) three-pronged framework of recognition, reduction, and redistribution. The recognition component enhances caregivers' autonomy through services that support personal and economic empowerment. The reduction component alleviates the time burden on caregivers by offering professional care services for dependents. Finally, the redistribution component engages men through educational initiatives to promote shared caregiving responsibilities, challenging entrenched gender norms (Table 1).

Table 1: *Care Blocks* service provision

Recognize	
Training	This component offers opportunities for caregivers to pursue primary and secondary education, enhance financial literacy, and acquire technical skills.
Breathe	This section focuses on the emotional well-being of caregivers. It offers workshops on emotional wellness, building support networks, and meditation techniques to promote relaxation and stress management.
Socioeconomic	Caregivers can access programs that promote their economic autonomy through employment opportunities and entrepreneurship support services.
Reduce	
Care	This component offers professional care services and recreational activities for care recipients. This alleviates the burden on caregivers by providing support with daily tasks and leisure pursuits.
Laundry	Community laundromats are available for use by caregivers, reducing their domestic workload and freeing up time for other activities.
Redistribute	
Awareness-raising	This component aims to dismantle traditional gender roles by offering workshops for men. These workshops encourage men to view caregiving as a shared responsibility and participate in household tasks.
Training	This dedicated program equips men with the knowledge and skills necessary to provide effective caregiving.
Expansion	The policy promotes the development of a caregiving network involving different community actors. This collaborative approach aims to distribute caregiving responsibilities more equitably.

The rollout of *Care Blocks* followed a staggered approach due to budgetary constraints imposed by the Bogotá Mayor's Office. From October 2020 to December 2023, a new center was inaugurated approximately every 1.5 months, with prioritization of locations informed by an ag-

gregate index incorporating four key indicators [5]. First, care demand was quantified by assessing the population of care recipients—including children, older adults, and individuals with disabilities—relative to the total caregiver population. Second, care supply was evaluated to measure the availability of existing public and private services in a given area to meet care needs. Third, multidimensional poverty levels were considered to prioritize boroughs with higher concentrations of poverty. Finally, participatory budgeting mechanisms incorporated resident input and preferences into the decision-making process (Alcaldía Mayor de Bogotá 2023).

The program launched operations on October 27, 2020, with the Manitas *Care Block* in Ciudad Bolívar borough and concluded its initial phase with the Barrios Unidos *Care Block* on December 19, 2023 (Appendix 6). As of today, Bogotá has established a network of 21 *Care Blocks*, serving approximately 600,000 people across its urban boroughs. To address the needs of rural communities, a mobile unit supplements this network. *Care Blocks* operate with extended hours, offering services Monday through Friday from 8:00 AM to 6:00 PM and on Saturdays until 1:00 PM.

2.3 Violence against Women (VAW) and *Care Blocks*

Although the *Care Blocks* program was initially designed to address women's unpaid care work through the principles of recognition, reduction, and redistribution, evaluations of its impact and operations, particularly the qualitative components, have uncovered an unanticipated outcome. Many women have been leveraging the program's legal and psychological support services to disclose experiences of gender-based violence.

According to the Bogotá Mayor's Office, Alcaldía Mayor de Bogotá (2024),

> *The psycho-legal team has been instrumental in identifying situations of violence or rights violations that women are afraid to report. Once identified, these situations trigger the activation of relevant support pathways, with users being connected to other program services* (p.60).

[5] I conducted a replication exercise of the prioritization index using the Sisbén IV survey. While the overall methodology was similar, I observed notable differences in the resulting rankings and spatial distribution of care blocks [Appendix 8]

This emerging role underscores the program's capacity to function not only as a resource for alleviating the burden of care but also as a critical mechanism for addressing and responding to gender-based violence.

Additionally, the social work teams responsible for coordinating resources and collaborating with support entities have reported similar findings.

> *These teams frequently encounter cases of violence during their engagement with participants, prompting the activation of established response protocols and ensuring that affected individuals receive the necessary support* (p. 94).

These insights highlight an important secondary function of the *Care Blocks*, revealing its broader socio-legal implications and underscoring the interconnected nature of care provision and violence prevention. Despite these promising observations, rigorous evidence on the broader impact of *Care Blocks*—particularly their influence on VAW reporting—remains limited.

3 Data and variable definitions

In Bogotá, the security department classifies crimes against women into three primary categories: femicide, sexual abuse, and domestic violence (when the victim is a woman). This study focuses on sexual abuse and domestic violence, the two categories that disproportionately affect women within the household. Together, these account for over 90% of reported crimes against women in Bogotá.

To assess the impact of *Care Blocks* on domestic violence against women (VAW), I use administrative records from Bogotá's 123 Emergency Line, the city's primary emergency response service, which operates similarly to 999 in the UK and 911 in the USA. The dataset spans from July 1, 2021, to December 8, 2023, and includes detailed incident reports, including geo-location coordinates (x, y), timestamps, and the sequence of events from call initiation to the arrival of first-responding police patrols. Additionally, transcripts of emergency calls—recorded by operators—are analyzed using Natural Language Processing (NLP) techniques to classify call severity

and assign risk levels. These classifications serve as key inputs for estimating the causal impact of *Care Blocks* on both the frequency and severity of VAW-related emergency calls.

I complement these data with administrative records from the Bogotá Mayor's Office, which provide granular information on the *Care Blocks* program. These records include spatial data on facility locations, service coverage areas, operational schedules, and the care dependency ratio. The care dependency ratio, a key demographic indicator, is defined as the ratio of the population requiring care to the working-age population.[6]

To strengthen the validity of the difference-in-differences analysis, I incorporate additional control variables from the Sisbén database. These controls include the number of registered households by cadastral sector, the number of women, the number of women engaged exclusively in unpaid care work, the prevalence of multidimensional poverty, the unemployment rate, and the proportion of individuals with low educational attainment. These socioeconomic indicators are essential for ensuring the parallel trends assumption required for causal identification.

[6] The population requiring care includes children aged 0–12, individuals with disabilities, and the elderly (typically those aged 70 and older). The working-age population is generally defined as individuals aged 15–64.

Table 2: Description of Variables

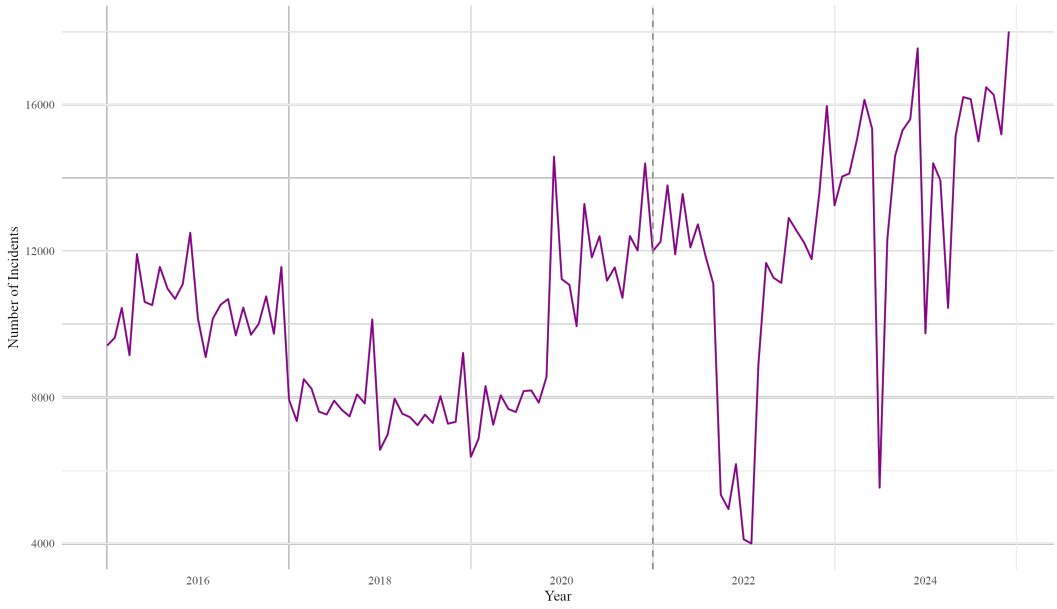
Variable	Definition	Source	Scale/Unit	Period
Reported VAW Calls	Total number of violence-against-women (VAW) emergency calls at the cadastral sector level, encompassing reports of sexual abuse and domestic violence when the victim is a woman.	123 Emergency Line, BSD	Cadastral, monthly	2021–2023
High-Risk VAW Proportion	The proportion of high-risk incidents, defined as the number of high-risk incidents divided by the total number of incidents. As this proportion is constrained to the interval [0, 1], a logit transformation was used to map it to the real line. This transformation improves the statistical properties of the variable, mitigating potential problems of heteroskedasticity and non-normality when used in linear regression models.	123 Emergency Line, BSD	Cadastral, monthly	2021–2023
Care Blocks Facilities	Spatial data on Care Blocks, including polygonal boundaries, precise anchor facility locations, and areas of influence.	BMO	Geo-spatial	2020–2023
Care Blocks Coverage	Number of households within *Care Blocks* coverage areas, including demographics of caregivers and dependents (children, persons with disabilities, and older adults).	BMO	Geo-spatial	2020–2023
Opening Date	Date when each *Care Block* commenced operations.	BMO	Monthly	2020–2023
Walking Distance	Walking distance (in kilometers) from cadastral centroids to the nearest *Care Block's* anchor facility.	Geo Processing	Kilometers	2023
Walking Time	Estimated walking time (in minutes) from cadastral centroids to the nearest *Care Block's* anchor facility.	Geo Processing	Minutes	2023
Socioeconomic Indicators	Key metrics derived from the Sisbén database, including household counts, multidimensional poverty prevalence, unemployment rates, and education levels within cadastral sectors.	Sisbén	Cadastral, yearly	2020
Care Dependency Ratio	Ratio of dependents (population aged 0–14, 64+, or with disabilities) to the working-age population (aged 15–64).	Sisbén	Cadastral, yearly	2020
Cadastral ID	Unique identifier for cadastral sectors, including land use type and polygonal delimitations in Bogotá's urban area.	BMO	Geo-spatial	2022

Notes: BMO is Bogotá Mayor's Office (Alcaldía Mayor de Bogotá). BSD is Bogotá's Security Department. Sisbén is Sistema de Identificación de Potenciales Beneficiarios de Programas Sociales. Link to spatial data: https://www.ideca.gov.co/. This table describes the variables used in the analysis, including information on emergency calls reporting violence against women (VAW), *Care Blocks* infrastructure, and socio-demographic indicators. Data sources include the Bogotá Security Department, the District Secretariat for Women, and the District Secretariat for Social Integration. All information was processed at the cadastral sector level.

3.1 Descriptive statistics

Figure 2 illustrates annual trends in domestic violence calls involving female victims, based on Bogotá's 123 Emergency Line data from January 2015 to December 2024. The analysis reveals significant fluctuations in demand for emergency services. From 2015 to 2018, annual call volumes ranged from 9,000 to 12,000. A sharp 33% decline occurred in late 2017, with calls falling below 8,000. This was followed by a substantial surge in March 2020, coinciding with the COVID-19 pandemic, where calls rose by over 25%, surpassing 15,000. This elevated reporting level, with fluctuations, remained above 12,000 until late 2021, when a 67% decline brought the volume to around 4,000. Call volumes then became more variable, reaching 17,000 cases by the end of 2024—an increase of over 325% from the 2021 low. These fluctuations suggest the influence of exogenous shocks and changing socio-economic conditions on VAW incidence and emergency service use. The gray line in December 2020 indicates the introduction of the first *Care Block* in Bogotá.

Figure 2: Yearly Trends in Violence Against Women in Bogotá

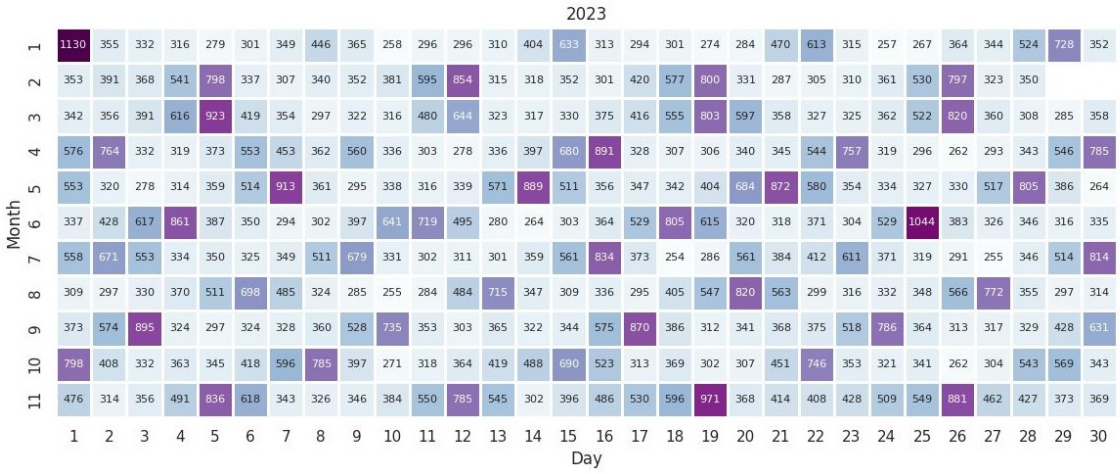


Delving deeper into the data in 2022 and 2023, a distinct daily pattern emerges when analyzing VAW calls on a day-by-day basis (Figures 3 and 4). Across all months, Saturdays and Sundays consistently register the highest call volumes. This finding aligns with existing literature that suggests a potential link between increased alcohol consumption and domestic violence incidents during weekends (Chalfin, Danagoulian and Deza 2021; Snowden 2018; Kajeepeta et al. 2020).

Figure 3: Days with the Highest Incidence of VAW calls in 2022



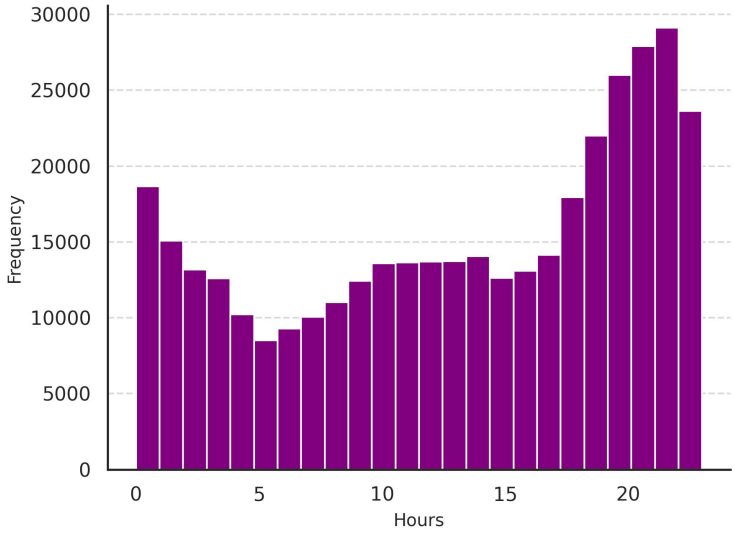
Figure 4: Days with the Highest Incidence of VAW calls in 2023



A pronounced seasonal pattern emerges in the data, with the highest peaks in VAW calls coinciding with major Christmas holidays (Candle Day, Christmas Day, and New Year's Day). These three days consistently record over 1,100 domestic violence incidents across Bogotá. Notably, both Christmas Day and New Year's Day exhibited the highest call volume in both 2022 and 2023. Weekend VAW calls (Saturdays and Sundays) in December also see a significant rise, with a near doubling compared to other months, where the increase is around one-third.

Analysis of the 24-hour call distribution reveals that the highest proportion of VAW calls occur at night, in this case between 8 pm and 11 pm (Figure 5). This aligns with existing literature, which suggests peaks in violence coincide with periods of increased household cohabitation (Balci and Ayranci 2005). Furthermore, as *Care Blocks's* services are unavailable during these evening hours, the hypothesis that increased time spent utilizing these services reduces exposure to confrontational situations within the household cannot be supported at this stage.

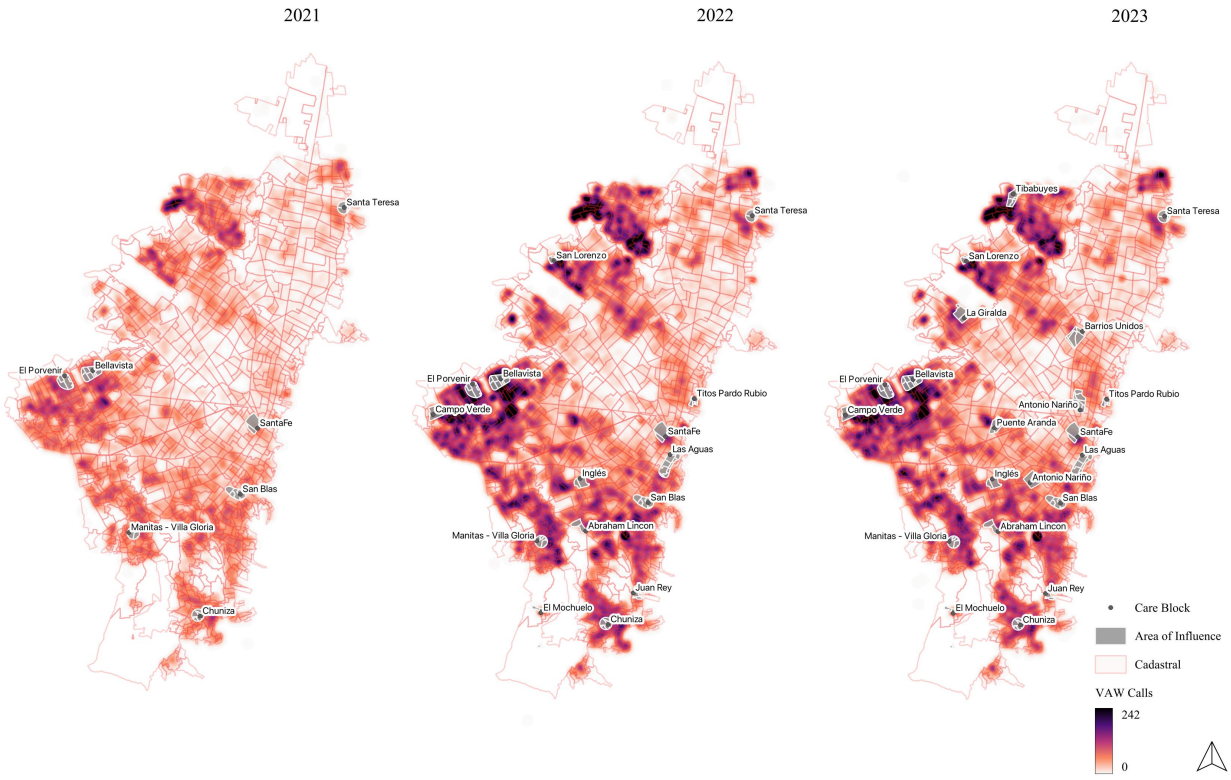
Figure 5: Peak Hours of Reported VAW Calls



The spatial analysis reveals a critical concentration of VAW in the southwestern region of Bogotá. Among the city's 21 boroughs, four account for 50% of reported cases: Kennedy (14.1%), Suba (13.7%), Bosa (11.3%), and Ciudad Bolivar (10.3%). Drilling down to the neighborhood level, we observe particularly high concentrations in Gran Britalia and Tintala (Kennedy), Lisboa (Suba), Las Guacamayas (San Cristobal), and El Corso and San Bernardino XXII (Bosa). These neighborhoods each experienced over 1,500 incidents of VAW during the study period.

Figure 6 illustrates the spatial concentration of VAW reports for the years 2021, 2022, and 2023, alongside the staggered opening dates of the *Care Blocks*. While the incidence of violence was not a primary factor in *Care Block's* prioritization, four of the localities receiving the first *Care Blocks* coincide with areas with the highest reported violence: Ciudad Bolivar (Manitas), Bosa (Porvenir), San Cristobal (San Blas), and Usme (Chuniza).

Figure 6: Spatial and Temporal Patterns of Domestic VAW and Care Blocks



3.2 Variables and Unit of Analysis

Dependent variables

This study evaluates the impact of *Care Blocks* on Domestic Violence against Women (VAW) using two primary outcome variables:

- **Call frequency**: The number of VAW-related calls reported through the 123 Emergency Line, aggregated at the cadastral zone level.
- **Proportion of High-Risk Calls**: The share of high-risk calls [7] relative to the total number of VAW calls within a cadastral zone. As this proportion is constrained to the interval [0,

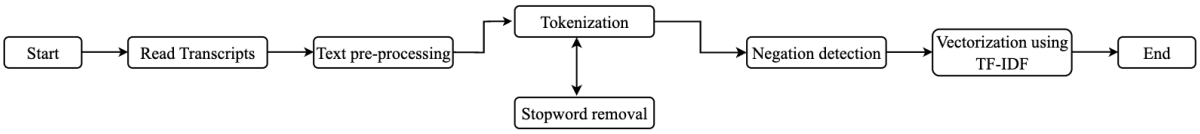
[7] Calls classified as high-risk by a Natural Language Processing (NLP) algorithm. This classification is based on the presence of keywords or phrases indicative of potentially dangerous situations, including mentions of guns, injured people, and protective measures.

1], a logit transformation was used to map it to the real line. This transformation improves the statistical properties of the variable, mitigating potential problems of heteroskedasticity and non-normality when used in linear regression models. This variable provides insights into the potential influence of *Care Blocks* on the severity of reported domestic violence incidents.

To classify calls into risk categories, I employed a Natural Language Processing (NLP) approach on transcripts recorded by 123 Emergency Line operators. NLP enabled the systematic estimation of risk levels by identifying keywords and contextual indicators associated with varying degrees of danger.

The NLP workflow began with tokenization, a process that segmented each call transcript into individual terms or tokens. This step was followed by the removal of stopwords, which eliminated high-frequency but low-information words, such as Spanish prepositions and conjunctions, to enhance analytical focus. Negation detection was then employed to preserve the semantic meaning of negated phrases by tagging such terms appropriately, typically with a "NO" prefix. Finally, vectorization converted the refined textual data into numerical representations using Term Frequency-Inverse Document Frequency (TF-IDF). This transformation enabled machine learning algorithms to effectively analyze word frequencies and contextual patterns, supporting the classification of emergency calls into distinct risk levels. Figure 7 illustrates the overall workflow, highlighting each stage of the text preprocessing pipeline.

Figure 7: Text Preprocessing and NLP Workflow



Using the processed data, a supervised learning model categorized emergency calls into three risk levels based on keywords and contextual cues. By analyzing word frequencies and contextual patterns, the model assigned risk scores to each call transcript, stratifying them into these three categories.

- **High-risk** calls were defined as situations involving life-threatening circumstances, such as references to lethal weapons, injured individuals, or protective measures, which are often indicative of re-victimization in cases of intimate partner violence (IPV)[8].

  `Feminicide risk, intimate partner, drug use, injured mother, injured daughter, urgent PONAL`[9]

- **Moderate-risk** calls described scenarios requiring intervention but involving less immediate danger, as identified by mentions of non-lethal weapons, pregnant women, children, or intoxicated individuals.

  `Husband, hitting wife, two children, shouting, intoxicated, NO guns, NO injured`

- **Low-risk** calls not categorized as high or moderate risk.

  `Caller reports fight, NO guns, NO injured, woman involved`

[8] A single call transcript was selected for each risk level to exemplify the characteristics associated with that level. The selection of this sample call was done on a random basis.

[9] PONAL is Policía Nacional.

The effectiveness of the risk classification system was assessed through police patrol response times. High-risk calls elicited the fastest response, with an average dispatch time of 58 seconds. Moderate-risk calls resulted in an average dispatch time of 1 minute and 19 seconds, while low-risk calls corresponded to an average dispatch time of 2 minutes and 20 seconds. This analysis underscores the operational importance of accurate risk categorization in optimizing resource allocation and prioritizing emergency responses.

By incorporating both the frequency of calls and their severity, the dependent variables provide a nuanced understanding of the *Care Blocks'* impact on domestic violence reporting.

Independent variables

The treatment variable is constructed based on the staggered implementation and geographical coverage of the *Care Blocks*. Using data from the Bogotá Mayor's Office, I incorporate information on the spatial locations, operational rollouts, and service areas of these care facilities. Each *Care Block* is associated with a polygonal zone that defines its area of influence, serving as a spatial unit to estimate the potential number of caregivers who may access the facility. These zones also reflect the range of services that can be provided, contingent upon demand from the surrounding population.

Treatment assignment is determined by two key criteria:

- **Temporal Variation:** The opening date of a *Care Block*, which introduces variation across time (Appendix 8).
- **Spatial Proximity:** Whether the cadastral centroid of a given area falls within the *Care Block's* area of influence or lies within a 31.9-minute walking distance (Appendix: 8). This threshold corresponds to the 25th percentile of the walking distance distribution, as reported by beneficiaries in the most recent impact evaluation (Alcaldía Mayor de Bogotá 2024).

This definition of the treatment variable ensures that the analysis captures both temporal and spatial dimensions of *Care Blocks* implementation, providing a robust framework for assessing its

impact on domestic violence outcomes.

Our identification strategy compares changes in outcome variables over time between two groups: (i) cadastral zones located within a 31.9-minute walking distance[10] of a *Care Block* (treated group) and (ii) cadastral zones either outside this range (never treated group) or not yet reached by the program due to the staggered implementation of *Care Blocks* (not yet treated group). By leveraging the timing and geographic reach of *Care Blocks*, this approach isolates the causal impact of the program on reporting behavior.

To mitigate potential biases arising from pre-existing treatment conditions, I exclude *Care Blocks* that were operational prior to the study period (beginning July 1, 2021). This exclusion removes five *Care Blocks* from the sample. The final analysis focuses on the 16 *Care Blocks* inaugurated between July 1, 2021, and December 1, 2023, for which both pre- and post-treatment data are available (see Appendix 8).

Unit of Analysis

This study evaluates the effect of *Care Blocks* on the incidence and severity of violence against women (VAW) in Bogotá, Colombia, using the cadastral zone as the unit of analysis. Cadastral zones are administrative divisions based on land use and soil characteristics. Bogotá consists of 1,198 cadastral zones, which include urban blocks and rural areas. For this analysis, we focus exclusively on urban cadastral zones primarily designated for residential use, excluding those allocated to non-residential purposes such as parks, correctional facilities, educational institutions, transportation hubs, and natural areas.

To minimize bias in estimating the impact of *Care Blocks*, we also exclude zones adjacent to facilities established before the data collection period. Specifically, zones near the *Care Blocks* in Bosa (Porvenir), Ciudad Bolívar (Manitas), San Cristóbal (San Blas), Usme (Chuniza), Mártires (Santa Fe), and Kennedy (Bellavista) are omitted. After applying these criteria, the analysis focuses on 634 residential cadastral zones, which form the basis for examining the policy's effects before

[10] The 31.9-minute threshold is based on reported travel times from beneficiaries and represents the upper limit of their typical walking distance.

and after its implementation.

Table 3 provides descriptive statistics for the cadastral zones, stratified by their walking distance to *Care Blocks* prior to their opening. Zones within a walking distance of $\leq$31.9 minutes are classified as intended to treatment areas, while those farther away constitute the control group. Data on VAW-related calls and the proportion of high-risk calls relative to the total number of VAW-related calls were sourced from Bogotá's 123 Emergency line for the year 2021. Key socio-demographic characteristics, including multidimensional poverty, unemployment, educational attainment, and the number of women caregivers, are drawn from the 2020 *Sisbén* survey[11]

The descriptive statistics reveal comparable mean values at base line (2021) for VAW-related calls and the proportion of high-risk calls across intended to treatment and control groups, with normalized differences of -0.01 and -0.03, respectively, indicating strong balance. Socioeconomic variables, such as the prevalence of multidimensional poverty and extreme poverty, also exhibit normalized differences close to zero, further confirming balance between groups. Predictably, walking time and distance to *Care Blocks* differ significantly due to the group classification. Overall, these descriptive statistics demonstrate a well-balanced sample, suitable for analyzing the causal effects of *Care Blocks* on VAW-related outcomes.

[11] *Sisbén*, the System for Identification of Potential Beneficiaries of Social Programs (Sistema de Identificación de Potenciales Beneficiarios de Programas Sociales) is a targeted survey that identifies vulnerable households based on their living conditions and income generation.

Table 3: Descriptive Statistics for Cadastral Zones by Walking Distance to Care Blocks ($\leq$ 31.9m vs. >31.9m) Before Their Opening in Bogotá (2020–2021)

	Cadastral Zone at $\leq$31.9 min to the CB Intended to Treatment			Cadastral Zones at >31.9m to the CB Control			
	N	Mean	SD	N	Mean	SD	Diff (T-C)
VAW-related calls	2939	9.97	10.63	7922	10.17	10.70	-0.01
Proportion of HR calls	2939	1.11	1.64	7922	1.18	1.70	-0.03
Households in multidimensional poverty	2939	235.7	290.7	7922	224.3	274.9	0.04
Households by cadastral	2939	3702.7	4701.8	7922	3904.0	4560.3	-0.02
Women by cadastral	2939	1602.5	2059.2	7922	1684.3	1978.4	-0.04
Walking time (minutes) to the CB	2939	22.51	8.71	7922	61.90	18.98	-2.54
Walking distance (kilometers) to the CB	2939	872.7	709.4	7922	3090.0	958.8	-2.51
Unemployed women by cadastral	2939	125.2	158.4	7922	129.6	149.1	-0.02
Low educational attainment by cadastral	2939	994.1	1311.9	7922	989.0	1272.7	0.00
Long-term unemployment	2939	254.5	279.2	7922	270.0	294.6	-0.05
Households in extreme poverty	2939	86.1	134.2	7922	83.6	121.5	0.01
Women caregivers by cadastral	2939	321.8	393.8	7922	339.2	392.3	-0.04

Notes: The descriptive statistics in the table are based on the pre-treatment period, prior to the roll-out of the *Care Blocks*. Socio-demographic information for the cadastral zones of Bogotá is sourced from the 2020 Sisbén survey. The "Diff (T-C)" column reports the normalized difference, a standardized metric used to evaluate balance between treatment and control groups. It is computed as the difference in means between the groups, divided by the pooled standard deviation of the variable. A normalized difference close to zero indicates good balance, while larger absolute values suggest imbalance.

4 Empirical strategy

Cadastral zone level specification

To assess the causal effect of *Care Blocks* on the frequency and severity of domestic violence against women (VAW), I employ a difference-in-differences (DiD) approach. The empirical strategy builds on the framework introduced by Callaway and Sant'Anna (2020), which addresses several methodological challenges inherent in program evaluation. Specifically, this model accommodates (i) multiple time periods and (ii) staggered treatment timing resulting from the phased establishment of *Care Blocks*. This design facilitates robust estimation of the intervention's impact while accounting for the complex temporal and spatial dimensions of the roll-out.

I use a dynamic DiD model that leverages granular spatial and temporal variation in the implementation of *Care Blocks* across Bogotá's boroughs. This approach enables us to examine two primary outcomes: (a) the volume of reported cases of VAW and (b) the proportion of high-risk reports among total VAW reports. The analysis is conducted at the cadastral zone level, a fine-grained geographic division in Bogotá defined by urban land characteristics.

The identification strategy compares changes in these outcomes over time between two groups: (i) zones located within a 31.9-minute walking distance[12] of a *Care Blocks* (treated group) and (ii) zones either outside this range (never treated group) or not yet reached by the program due to the staggered implementation of *Care Blocks* (not yet treated group).

By exploiting both the timing and geographic reach of *Care Blocks*, this approach isolates the causal impact of the program on reporting behavior. To construct the control groups, I adopt methods outlined in Callaway and Sant'Anna (2021) and De Chaisemartin and d'Haultfoeuille (2023), which allow for alternative comparison groups. Both the "never-treated" and "not-yet-treated" groups can recover the dynamic treatment effect under appropriate assumptions. Notably, covariates do not play a major role in our primary analysis, as the staggered roll-out design inherently controls for time-invariant characteristics and common time shocks.

The empirical model used to estimate the impact of *Care Blocks* on VAW-related calls is specified as follows:

$$Y_{s,t} = \alpha_s + \lambda_t + \sum_{\tau=-27}^{28} \delta_\tau \cdot \mathbb{1}\{T_s = t - \tau\} + \sum_{\tau=-27}^{28} \theta_\tau \cdot \mathbb{1}\{T_s \neq 0\} \cdot \mathbb{1}\{t - T_s = \tau\} + \varepsilon_{s,t} \qquad (1)$$

where: $Y_{s,t}$ is the outcome variable (frequency or severity of calls related to violence against women) for cadastral zone s at time t. α_s represents fixed effects for each cadastral unit, capturing unobserved time-invariant cadastral-level characteristics. λ_t represents time fixed effects, capturing shocks common to all sectors at time t. δ_τ is the coefficient for pre-treatment dynamics, serving as a placebo check to ensure parallel trends prior to treatment. θ_τ represents the treatment effect at

[12] This represents the upper limit of walking time as reported by *Care Blocks's* beneficiaries

relative time τ, capturing the impact of *Care Blocks* on the outcome variable at each point in time after treatment. $\mathbb{1}\{T_s = t - \tau\}$ is an indicator variable that equals 1 if the sector s started treatment at $t = T_s$, measured relative to month τ.$\varepsilon_{s,t}$ is the error term.

The coefficient of interest θ_τ for each $\tau \in \{-27, \ldots, 28\}$ allows us to track the evolution of *Care Blocks* effects over time, relative to the pre-treatment baseline period. These dynamic treatment effects provides insights into both the immediate and longer-term impacts of the program across cadastral zones.

5 Results

Table 4 presents the estimated effects of *Care Blocks* on reported incidents of domestic violence against women (VAW). I examine two key outcomes: the total number of VAW-related emergency calls (Columns 1 and 3) and the number of high-risk calls—those involving immediate threats to life, physical harm, or re-victimization (Columns 2 and 4). Panel A compares treated areas to those that never received the intervention, while Panel B compares them to areas scheduled for later implementation. Differences in total observations between Panels A and B are attributable to the exclusion of zones near *Care Block* 21, as detailed in Appendix 7, due to the data collection period ending prior to its establishment.

Using Callaway and Sant'Anna's double robust inverse probability weighting (DR-IPW) estimator, the preferred specification, I find a consistently positive and statistically significant relationship between the establishment of *Care Blocks* and the outcomes of interest across all model specifications[13]. The findings indicate that *Care Blocks* significantly increase the total number of VAW-related calls. Relative to never-treated areas, the intervention leads to an average increase of 4.11 calls per cadastral zone (Column 1, $p < 0.01$), corresponding to a 40.7% increase over the pre-treatment mean of 10.11 calls. A similar effect is observed when comparing to not-yet-treated

[13] The effects are similar when estimated using the methods for DiD with staggered treatment adoption developed in De Chaisemartin and D'Haultfœuille (2020), and De Chaisemartin and d'Haultfoeuille (2023). The results of these analysis are reported in Appendix 8.

areas, where total calls increase by 3.96 (Column 3, $p < 0.01$), representing a 36.3% rise from the pre-treatment mean of 10.91 calls. These results suggest that *Care Blocks* substantially reduce barriers to reporting violence.

Examining the effect over time, I find that the increase in total calls grows steadily. Five months after implementation (T_{+5}), total calls increase by 1.71 (a 16.9% rise relative to the pre-treatment mean), reaching 2.05 at T_{+10} (20.3%). The effect peaks at T_{+25}, where calls increase by 6.75 (66.8%), suggesting a sustained and expanding impact of the program. This pattern indicates that *Care Blocks* induce lasting improvements in reporting, possibly as trust in the initiative builds over time.

In contrast, I find no significant impact on high-risk calls in the short run (Columns 2 and 4). The coefficients for T_{+1} through T_{+15} are close to zero and statistically insignificant. However, at T_{+20}, I observe a significant reduction of 1.24 high-risk calls ($p < 0.05$), equivalent to a 32.0% decrease from the pre-treatment mean of -3.87. A similar reduction appears in Panel B, where high-risk calls decline by 1.25 (33.3%) compared to the pre-treatment mean of -3.75. This suggests that while *Care Blocks* facilitate the reporting of violence, they may not immediately addressing the structural barriers preventing women from reporting severe violence.

Overall, the results indicate that *Care Blocks* significantly improve reporting of domestic violence, with effects growing over time. However, additional interventions may be necessary to address the underreporting of the most severe cases, particularly in contexts where women face legal or social constraints in seeking protection. Future research should explore whether complementary legal and social services can further enhance the program's impact.

Figures 8 and 9 portray the event studies for total VAW calls and high-risk calls, respectively, using both "Never Treated" and "Not Yet Treated" groups for comparison. Both figures show no evidence of pre-treatment trends in either outcome, supporting the parallel trends assumption and indicating that treatment and control groups would not have diverged in the absence of *Care Block* exposure.

Table 4: Effects of Care Blocks on Domestic VAW Reports

Dep. Variable	Panel A: Never Treated		Panel B: Not Yet Treated	
	Total Calls (1)	High Risk Calls (2)	Total Calls (3)	High Risk Calls (4)
Pre-Treatment Average	-0.083	-0.046	-0.075	-0.035
	(0.440)	(0.253)	(0.440)	(0.522)
Post-Treatment Average	4.110***	-0.178	3.957***	-0.195
	(1.215)	(0.458)	(1.203)	(0.458)
T_{+1}	1.047	-0.142	1.002	-0.143
	(0.767)	(0.303)	(0.758)	(0.304)
T_{+5}	1.713*	0.234	1.681*	0.256
	(0.668)	(0.307)	(0.664)	(0.308)
T_{+10}	2.046*	0.003	1.954*	0.005
	(0.890)	(0.437)	(0.882)	(0.435)
T_{+15}	2.867*	-0.085	2.692*	-0.128
	(1.334)	(0.564)	(1.320)	(0.563)
T_{+20}	5.127**	-1.237**	5.136**	-1.252**
	(1.645)	(0.553)	(1.629)	(0.553)
T_{+25}	6.752*	-0.266	6.441*	-0.293
	(2.569)	(0.941)	(2.521)	(0.941)
Cadastral and Month FE	X	X	X	X
Never treated	X	X		
Not Yet Treated			X	X
Pre-Treatment Mean	10.11	-3.87	10.91	-3.75
# of Observations	19,020	19,020	16,680	16,680
# of Controls	16,829	16,829	14,489	14,489
# of Treated Units	2,191	2,191	2,191	2,191

Notes: This table presents difference-in-differences estimates from Eq. 1, comparing cadastral sectors that are close to the Care Block with those that are over 31.9 minutes walking distance as a control group. Columns (1) and (2) in Panel A assess total and high-risk VAW call effects for never-treated sectors. Columns (3) and (4) in Panel B estimate these effects for not-yet-treated sectors. All regressions include cadastral sector and month fixed effects. Significance levels: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. Standard errors are clustered at the cadastral level.

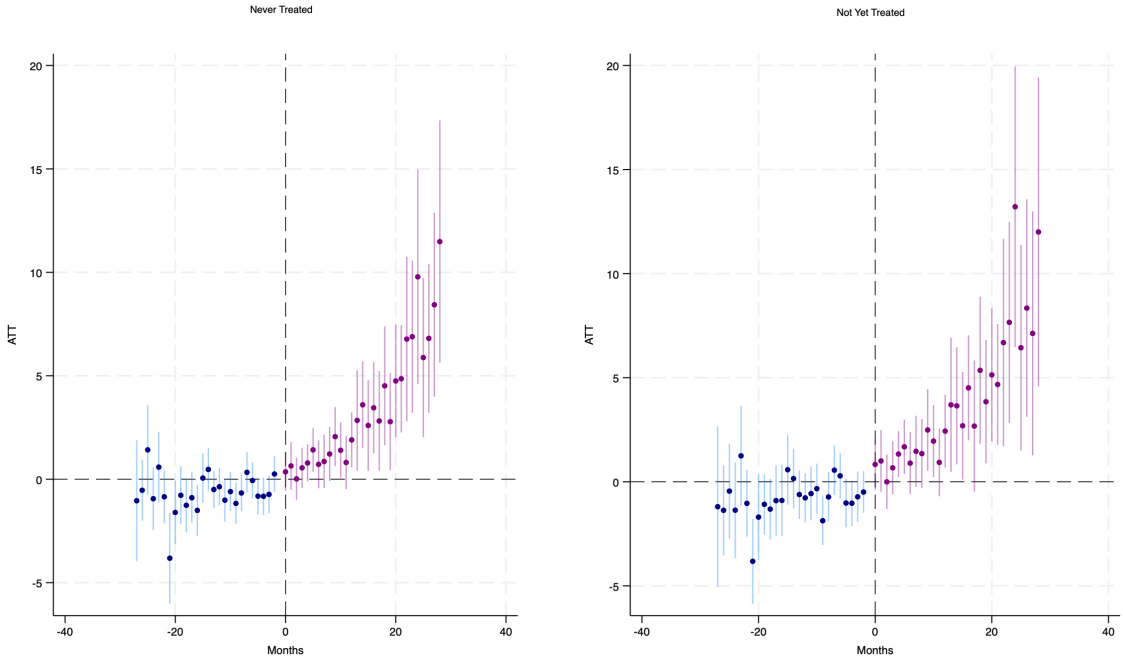
Impact on Total VAW Calls

A detailed examination of total VAW calls, summarized in Columns (1) and (3) of Table 4 and illustrated in Figure 8, reveals a dynamic and cumulative impact of *Care Blocks*. The intervention leads to an estimated 38.4% increase in calls relative to pre-treatment levels, with particularly strong growth during months T+1 to T+5 (63.7%) and T+15 to T+20 (78.5%). These findings suggest that the effect of *Care Blocks* not only amplify over time but also reflect the increasing engagement of women with care facilities and services as they spend more time in the program.

The stabilization observed between T+20 and T+25, where reported calls grow by a more

modest 31.8%, may reflect diminishing marginal returns as the program reaches a steady state. This plateau suggests that early gains may stem from heightened awareness and initial improvements in reporting infrastructure, whereas sustained growth might require complementary interventions to maintain momentum. Figure 8 visually highlights these trends, showing a sharp increase in total calls following 10 months of exposure to *Care Blocks*.

Figure 8: Impact of *Care Blocks* on Domestic VAW Calls



Notes: These figures display the estimated coefficients and 95% confidence intervals from Equation 1, illustrating the impact of Care Blocks on total VAW calls at the cadastral zone level. The left panel uses never-treated zones as the control group, while the right panel uses not-yet-treated zones. The estimation includes cadastral and month fixed effects, with standard errors clustered at the cadastral level. Each period spans twenty months, with period -1 omitted from the analysis.

Impact on High-Risk Calls

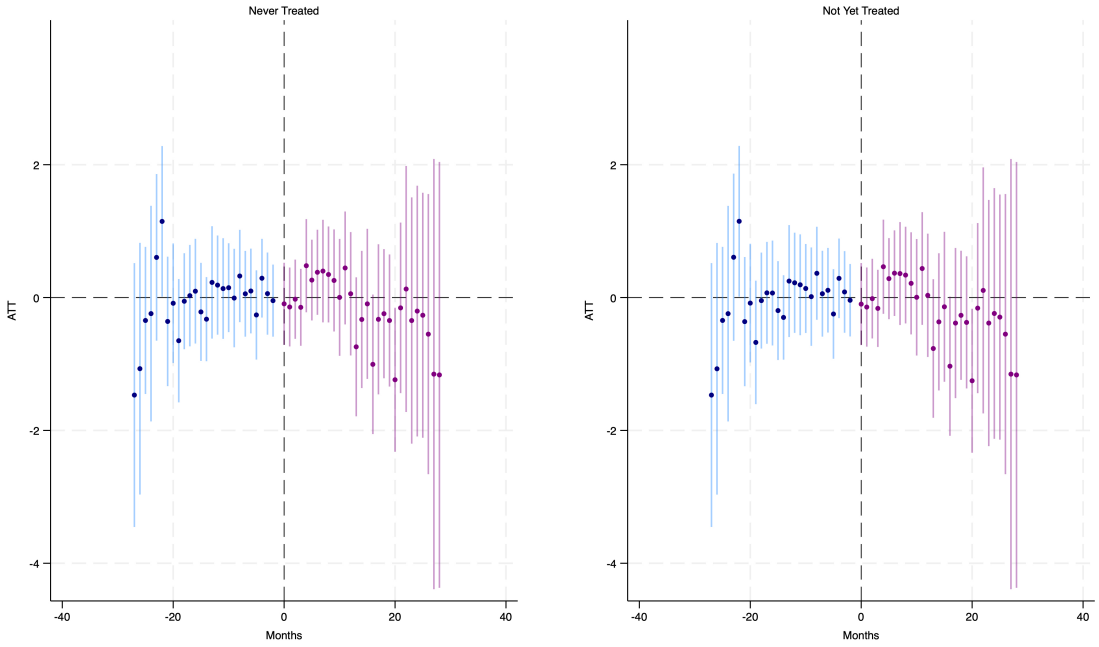
The analysis of high-risk calls, identified using a Natural Language Processing (NLP) algorithm to detect keywords indicative of severe violence (e.g., references to weapons, injuries, or protective measures), reveals a different trajectory compared to total calls. As illustrated in Columns (2) and

(4) of Table 4 and Figure 9, high-risk calls exhibit a distinct pattern with smaller and statistically insignificant effects in both never-treated and not-yet-treated sectors.

For never-treated sectors (Column 2), the post-treatment average shows a slight, negative change of -0.178, which is not statistically significant. Similarly, in not-yet-treated sectors (Column 4), the post-treatment average is also negative at -0.195, but remains insignificant. These findings suggest that the *Care Blocks* program does not have an immediate impact on high-risk calls in either group.

While the program appears to reduce barriers to reporting for general VAW cases, the challenges associated with high-risk reporting—such as trust issues, the need for protective services, and the psychological barriers faced by victims—seem to require more time and targeted interventions to overcome. The insignificant effects observed in these sectors imply that addressing high-risk cases may require more specialized outreach, enhanced protective measures, and perhaps additional infrastructure beyond the scope of the current program. Thus, while the program shows potential in reducing the reporting gap for less severe cases, the response to severe violence may be more complex and require further intervention.

Figure 9: Impact of *Care Blocks* on High Risk Calls



Notes: These figures display the estimated coefficients and 95% confidence intervals from Equation 1, illustrating the impact of Care Blocks on High-risk calls at the cadastral zone level. The left panel uses never-treated zones as the control group, while the right panel uses not-yet-treated zones. The estimation includes cadastral and month fixed effects, with standard errors clustered at the cadastral level. Each period spans twenty months, with period -1 omitted from the analysis.

In summary, the findings highlight the significant and sustained positive impact of *Care Blocks* on the reporting of total domestic violence cases, as evidenced by a marked increase in calls over time. The program effectively facilitates reporting in areas closer to the *Care Blocks*, particularly for general domestic violence cases, as reflected in the substantial rise in total call volumes post-treatment. However, the program appears less effective in increasing high-risk reporting. Despite some fluctuations, the effects on high-risk calls remain statistically insignificant, indicating that *Care Blocks* may not immediately address the unique challenges associated with reporting severe violence.

While the observed effects on total VAW calls are promising, the study acknowledges certain limitations. Though the results are attributed to *Care Blocks*, other factors—such as changes in law enforcement practices, societal attitudes towards domestic violence, or the role of community-

based support systems—could have also influenced the outcomes. Future research should aim to better isolate the effects of the program, exploring potential confounders and examining complementary interventions to enhance its impact, particularly for high-risk cases. This could include targeted outreach, improved victim support, and more robust protective services to foster greater trust and safety for individuals facing severe violence.

5.1 Robustness checks

5.1.1 Placebo Treatment Groups (Walking Time Thresholds)

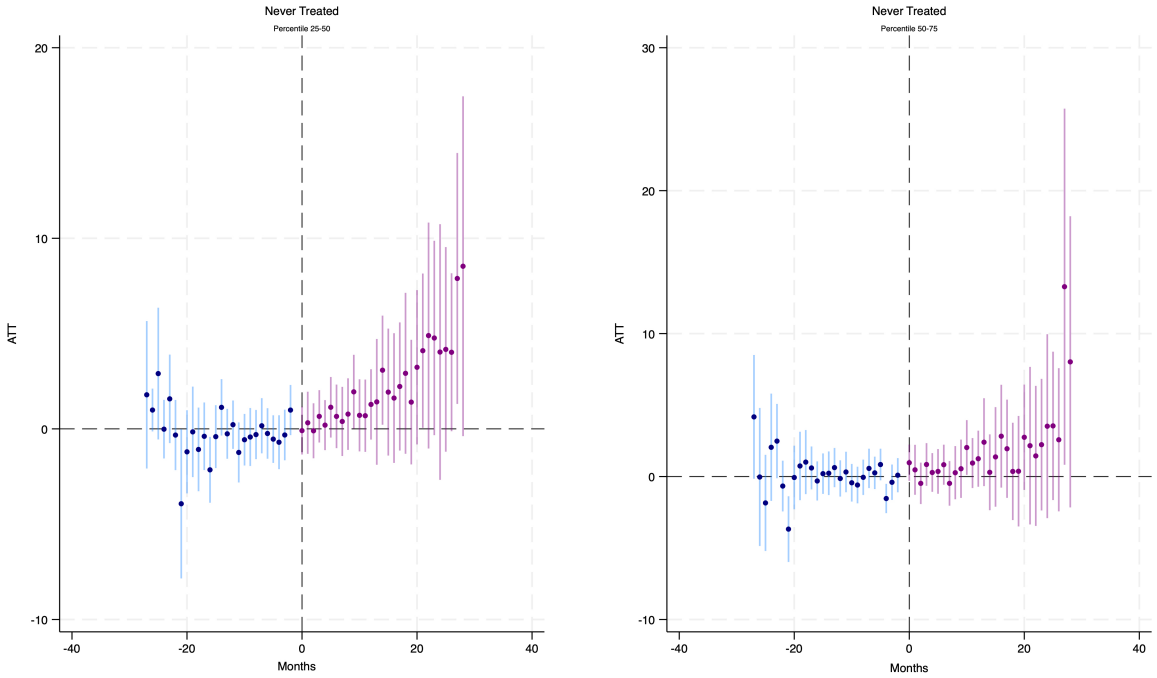
This robustness check examines the sensitivity of our main findings to alternative definitions of the treatment group based on walking time thresholds. Our primary analysis defined treatment as residing within a 31.9-minute walk (the 25th percentile) from the nearest *Care Block*, comparing changes in reported violence against women (VAW) calls between cadastral zones within this walking time (the treated group) and those beyond it or not yet exposed to the intervention (the control group). Here, I construct two placebo treatment groups: cadastral zones within the 25th to 50th percentile (32 to 48.95 minutes) and those within the 50th to 75th percentile (48.96 to 69.1 minutes) of a *Care Block*. Table 5 presents the results of these placebo regressions, using both the "Never Treated" and "Not Yet Treated" control groups. If the estimated effects in our main specification are genuinely attributable to the *Care Blocks* and not a correlated, time-varying confounder related to walking distance, we expect null effects in these placebo specifications, as these areas were not directly targeted by the intervention. The results largely conform to this expectation. While some individual coefficients are statistically significant (e.g., the coefficient at T+10 for the 50th-75th percentile group with the "Never Treated" control), there is no consistent pattern of statistically significant effects comparable to those observed in our main analysis. This absence of a systematic effect in the placebo specifications strengthens the causal interpretation of our primary finding that proximity to a *Care Block* affects reported VAW calls, suggesting that the observed effects are not simply driven by unobserved factors correlated with distance (Graphs 10, 11).

Table 5: Robustness Check: Event Study Estimates for Placebo Treatment Groups (Walking Time Thresholds)

Total VAW Calls	Panel A: Never Treated		Panel B: Not Yet Treated	
	Percentile 25-50 (1)	Percentile 50-75 (2)	Percentile 25-50 (3)	Percentile 50-75 (4)
Pre-Treatment Average	-0.171	0.170	-0.120	0.216
	(0.496)	(0.561)	(0.497)	(0.561)
Post-Treatment Average	2.373	1.962	2.185	1.924
	(1.422)	(1.485)	(1.410)	(1.470))
T_{+1}	0.321	0.471	0.220	0.476
	(0.831)	(0.892)	(0.829)	(0.887)
T_{+5}	1.134	0.357	1.053	0.360
	(0.811)	(0.797)	(0.805)	(0.795)
T_{+10}	0.711	2.030*	0.6387	2.012*
	(0.965)	(0.976)	(0.957)	(0.971)
T_{+15}	1.931	1.372	1.772	1.354
	(1.699)	(1.777)	(1.682)	(1.764)
T_{+20}	3.232	2.745	3.235	2.812
	(2.064)	(1.879)	(2.053)	(1.867)
T_{+25}	4.171	3.543	3.947	3.669
	(2.738)	(2.648)	(2.709)	(2.590)
Cadastral and Month FE	X	X	X	X
Never treated	X	X		
Not Yet Treated			X	X
# of Observations	19,020	19,020	16,680	16,680
# of Controls	16,991	17,033	14,651	14,693
# of Treated Units	2,026	1,987	2,029	1,987

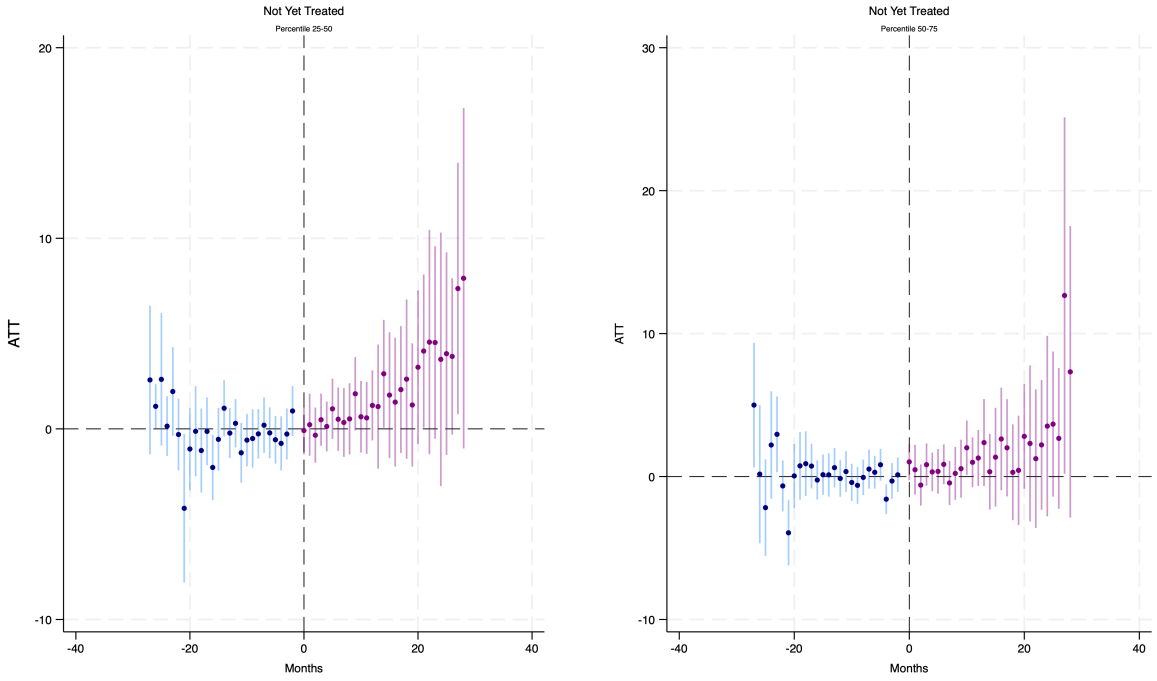
Notes: Placebo treatment groups are defined based on alternative walking time thresholds from the nearest *Care Block*. The primary analysis defines treatment as residing within 31.9 minutes (25th percentile) of a *Care Block*. Placebo groups are defined as residing within 32-48.95 minutes (25th-50th percentile) and 48.96-69.1 minutes (50th-75th percentile). "Never Treated" control groups include cadastral zones never within the primary treatment definition. "Not Yet Treated" control groups include cadastral zones within the primary treatment definition but before their treatment date. T+n represents n months after the opening of the *Care Block*. Standard errors are clustered at the cadastral zone level and presented in parentheses. Cadastral and month fixed effects are included in all specifications. The number of observations varies slightly across specifications due to differences in control group definitions. The number of controls and treated units also varies slightly across specifications due to the placebo definitions. Statistical significance is denoted as: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$.

Figure 10: Placebo Event Study: Impact of *Care Blocks* on VAW Calls (Never Treated Control)



Notes: This figure presents event study estimates of the impact of *Care Blocks* on reported VAW calls for placebo treatment groups, using a "Never Treated" control group. Placebo treatment groups are defined as cadastral zones residing within 32-48.95 minutes (25th-50th percentile) and 48.96-69.1 minutes (50th-75th percentile) of a *Care Block*. The "Never Treated" control group consists of cadastral zones never located within 31.9 minutes (the primary treatment definition) of a Care Block. Estimates are obtained using the Callaway and Sant'Anna (2021) estimator, with cadastral and month fixed effects included. Standard errors are clustered at the cadastral level. The omitted period is t-1, representing the period immediately preceding the placebo treatment assignment. Each event window spans 20 months.

Figure 11: Placebo Event Study: Impact of *Care Blocks* on VAW Calls (Not Yet Treated Control)



Notes: This figure presents event study estimates of the impact of *Care Blocks* on reported VAW calls for placebo treatment groups, using a "Not Yet Treated" control group. Placebo treatment groups are defined as cadastral zones residing within 32-48.95 minutes (25th-50th percentile) and 48.96-69.1 minutes (50th-75th percentile) of a *Care Block*. The "Not Yet Treated" control group consists of cadastral zones located within 31.9 minutes (the primary treatment definition) of a *Care Block*, but before their respective treatment dates. Estimates are obtained using the Callaway and Sant'Anna (2021) estimator, with cadastral and month fixed effects included. Standard errors are clustered at the cadastral level. The omitted period is t-1, representing the period immediately preceding the placebo treatment assignment. Each event window spans 20 months.

5.2 Discussion of Potential Mechanisms

The findings in the previous section demonstrate that *Care Blocks* increase the frequency of VAW-related calls, raising an important question: what constraints are these care facilities alleviating? I hypothesize that the observed effects operate through two primary mechanisms.

First, by alleviating the burden of unpaid care work, *Care Blocks* enable women to reallocate time and resources toward personal and professional development. These facilities provide on-site access to job training, education on sexual and reproductive rights, healthcare, and legal literacy (Table 1). This empowerment, coupled with improved access to reporting channels and protection mechanisms through psycho-legal teams, likely increases the likelihood of reporting domestic violence.

Second, *Care Blocks* serve as dedicated public infrastructure that fosters a supportive environment for caregivers—primarily women—while simultaneously challenging entrenched gender norms that perpetuate violence against women. By raising community awareness and promoting collective responsibility, these spaces may help catalyze cultural shifts that encourage reporting. Increased visibility of care services within neighborhoods, combined with heightened community engagement, may contribute to greater utilization of formal reporting channels, such as the 123 National Emergency Line.

The patterns observed in VAW-related calls suggest that both mechanisms are at play. The progressive increase in call volumes over time supports the hypothesis that *Care Blocks* facilitate greater engagement with institutional support systems, gradually lowering barriers to reporting. The eventual stabilization of call growth may indicate that initial gains were driven by heightened awareness and improved access to reporting mechanisms, while sustaining these effects over the long term may require complementary interventions, such as targeted outreach or expanded service offerings.

For high-risk domestic violence reports, however, the findings suggest a different pattern. Given that these calls often originate from within the home, the lack of a significant effect implies

that while *Care Blocks* enhance access to reporting mechanisms, additional structural or psychological barriers may delay or inhibit disclosures in severe cases. Fear of retaliation, lack of trust in the legal system, or emotional and economic dependence on perpetrators may limit the immediate impact of these interventions on high-risk reporting.

While this paper evaluates the overall effect of *Care Blocks* on VAW reporting, data limitations prevent a precise disentanglement of the relative contributions of each mechanism or the identification of specific program components driving these effects. However, the findings provide suggestive evidence in support of the proposed mechanisms, offering a foundation for future research to explore the causal pathways in greater detail. Understanding these dynamics more fully will be critical for designing policies that not only improve reporting rates but also enhance protection and support for women facing high-risk domestic violence situations.

6 Conclusions

This study provides empirical evidence that *Care Blocks* significantly increase the total number of domestic violence reports, suggesting that access to care infrastructure plays a crucial role in reducing barriers to reporting violence against women (VAW). The observed rise in total VAW-related calls highlights the potential of *Care Blocks* as effective mechanisms for facilitating victim identification, increasing engagement with support services, and promoting institutional trust. However, the findings also reveal a notable divergence in reporting patterns: while total call volume rises significantly, there is no consistent effect on high-risk VAW reports, with the exception of a temporary decrease observed at T+20 months. This suggests that *Care Blocks* primarily enhance reporting of emerging or moderate-severity cases rather than incidents involving imminent danger. An alternative explanation is that these spaces may play a preventative role, mitigating escalation into high-risk situations over time.

The policy implications of these findings are twofold. First, they underscore the importance of integrating *Care Blocks* or similar care-oriented public infrastructure into broader VAW prevention and response strategies. By reducing the burden of unpaid care work, these centers empower women to seek support, access resources, and engage with reporting mechanisms. Governments and policymakers should consider scaling up and institutionalizing these initiatives, ensuring their accessibility across urban and rural areas, particularly in communities with historically low reporting rates.

Second, the limited impact on high-risk calls signals the need for complementary interventions tailored to severe cases of VAW. While *Care Blocks* improve access to institutional support, structural and psychological constraints may still inhibit disclosures of life-threatening violence. To address this gap, policymakers should consider (i) strengthening the link between *Care Blocks* and law enforcement, (ii) enhancing outreach and awareness campaigns, and (iii) expanding mobile and digital reporting options. First, establishing formal referral pathways between *Care Blocks* and police units or judicial courts (Comisarías de Familia) specializing in gender-based violence

can enhance victim safety. Second, community engagement initiatives should explicitly target the underreporting of high-risk incidents by emphasizing confidentiality and protection mechanisms, while campaigns addressing fear of retaliation and distrust in law enforcement can help reduce psychological barriers to reporting. Finally, introducing mobile-based reporting mechanisms, such as encrypted apps or SMS helplines, could provide a safer, more discreet alternative for victims unable to physically visit *Care Blocks*.

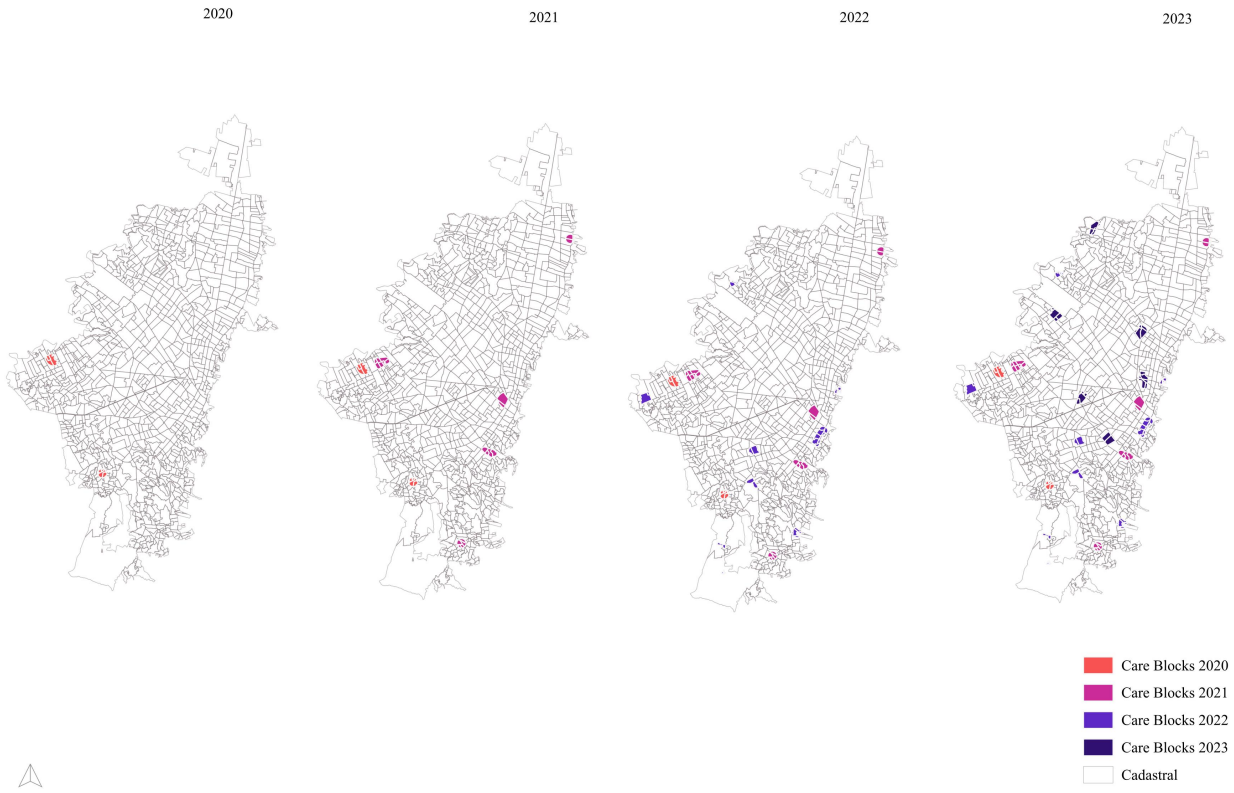
7 Ethics

Due to the sensitive nature of the data utilized in this research, which includes potentially identifiable information such as geolocated coordinates (longitude and latitude) and call transcripts, the data cannot be made publicly available. The research was conducted under strict ethical guidelines, as reviewed and approved by the SEED University of Manchester ethics committee (reference number: 2024-19553-34123). This approval was contingent upon signed confidentiality agreements from all participating parties, ensuring the protection of participant privacy. Therefore, the data cannot be shared beyond the research team and authorized collaborators.

8 Appendixes

Appendix A

Figure 12: Distribution and growth of the *Care Blocks* by year - Bogotá (2020-2023)



Appendix B

Subsequent analysis using data from the Potential Beneficiary Identification System (Sisbén IV) revealed a concerning misalignment between these initial estimates and the actual distribution of need. Sisbén IV, which classifies the Colombian population according to their living conditions and income and serves as the primary instrument for targeting social investment, provided a different perspective on care dependency ratios and multidimensional poverty. Our findings from the Sisbén IV data reveal distinct spatial distributions across these measures. As illustrated in 13 and 14, the northwestern area of the city exhibits a more critical care dependency ratio. This indicates that the relationship between individuals requiring care and those of caregiving age is more pronounced in this region. Notably, the multidimensional poverty indicator demonstrates a similar spatial concentration. This misalignment between the Mayor Office's initial aggregate index and the Sisbén IV data raises significant concerns about the efficiency of resource allocation. Given these spatial patterns, it is highly probable that the current allocation of care facilities to certain areas of the city, such as the eastern corridor, may be suboptimal.

Figure 13: Distribution of Households with Children Under 5 and People with Disabilities by Number of Caregivers Across Cadastral Sectors

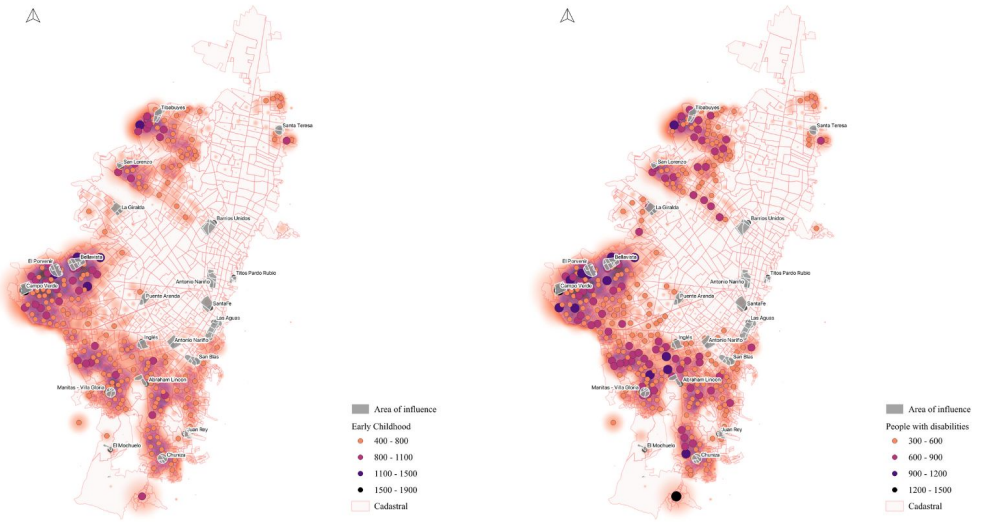
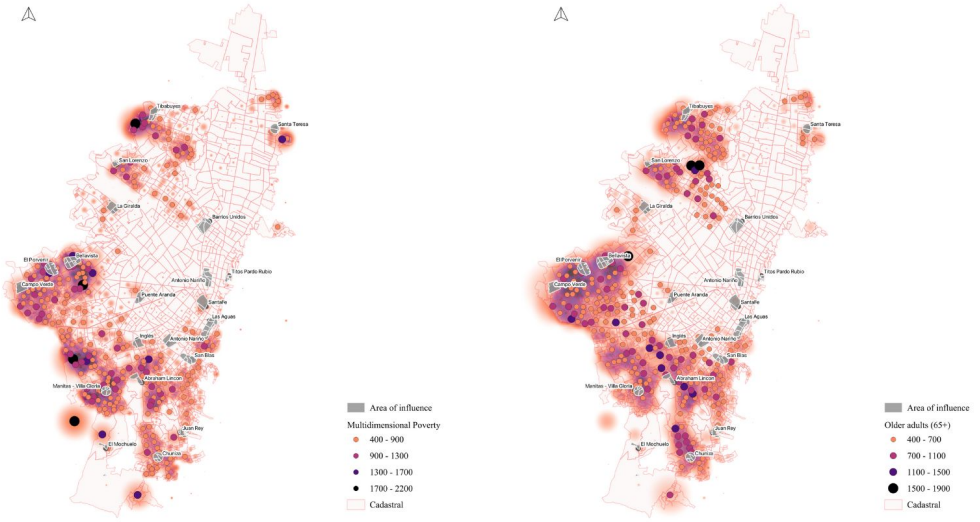


Figure 14: Distribution of Households with Older Adults (65+) by Number of Caregivers, and Multidimensional Poverty Households Across Cadastral Sectors



Appendix C

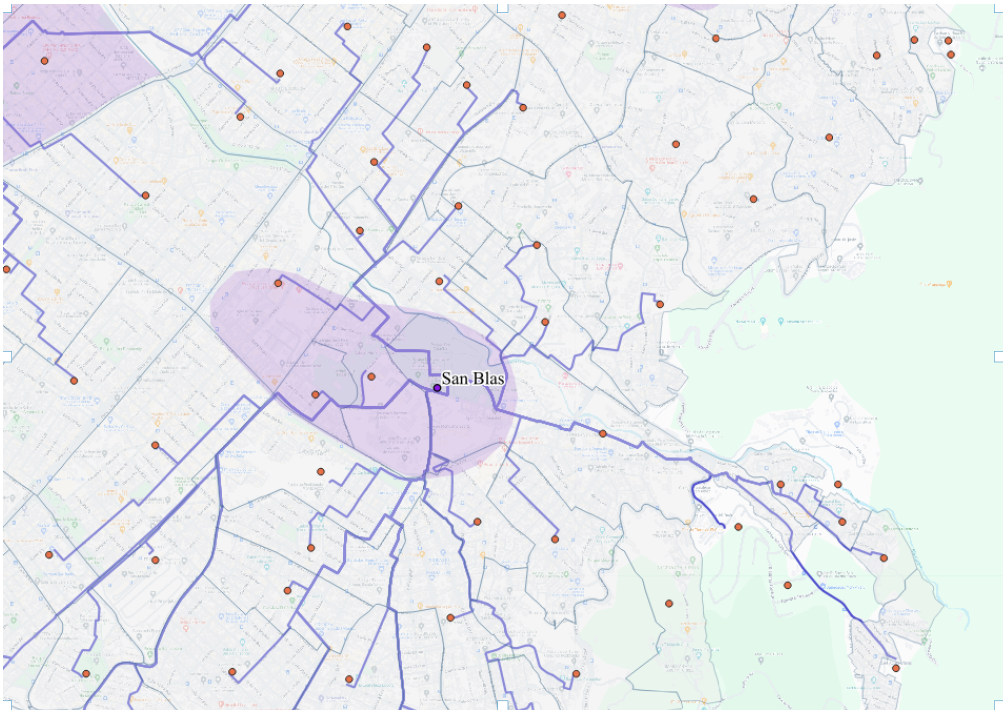
Table 6: *Care Blocks* Opening Dates and Prioritization Scores

Care Blocks	Score	Opening Day
Ciudad Bolívar - Manitas*	83.3	October 27, 2020
Bosa - Porvenir*	83.3	November 09, 2020
San Cristóbal - San Blas*	100.0	March 08, 2021
Usme - Chuniza*	83.3	May 05, 2021
Los Mártires - Santa Fe*	29.2	June 16, 2021
Kennedy - Bellavista	83.3	July 22, 2021
Usaquén - Santa Teresa	54.2	September 24, 2021
Santa Fe - La Candelaria	37.5	February 28, 2022
Engativá - San Lorenzo	62.5	March 30, 2022
Rafael Uribe Uribe - Barrio Inglés	83.3	June 02, 2022
Ciudad Bolívar - Mochuelo	83.3	September 08, 2022
Bosa - Campo Verde	83.3	October 31, 2022
Tunjuelito - Abraham Lincoln	58.3	November 22, 2022
San Cristóbal - Juan Rey	100.0	November 22, 2022
Chapinero - Pardo Rubio	8.3	December 09, 2022
Fontibón - La Giralda	16.7	February 27, 2023
Suba - Tibabuyes	54.2	March 29, 2023
Puente Aranda	16.7	May 08, 2023
Teusaquillo	8.3	May 23, 2023
Antonio Nariño	25.0	September 11, 2023
Barrios Unidos	25.0	December 19, 2023

Note: To mitigate potential biases arising from pre-existing program exposure, the analysis excludes Care Blocks that were operational before the study period commenced on July 1, 2021. These five Care Blocks are indicated with an asterisk (*).

Appendix D

Figure 15: Walking Distance to the Nearest *Care Block*



Notes: This map illustrates the estimated walking distances from the centroids of each cadastral sector to the *San Blas Care Block*. Walking distances were calculated in QGIS using the "Open Route Service" plugin, with the shortest route to the *Care Block* determined based on the Google Road layer. These distances are used to define treatment and control groups in the analysis.

Appendix E

Table 7: Distribution of Treated and Untreated Cadastrals by Care Block

Care Block	No Treated	Treated	Total
6	974	406	1,380
7	999	171	1,170
8	1,287	243	1,530
9	813	147	960
10	1,109	91	1,200
11	667	143	810
12	1,370	100	1,470
13	1,716	84	1,800
14	1,350	90	1,440
15	825	105	930
16	1,023	117	1,140
17	998	112	1,110
18	1,002	48	1,050
19	42	48	90
20	314	286	600
21	2,340	0	2,340
Total	16,829	2,191	19,020

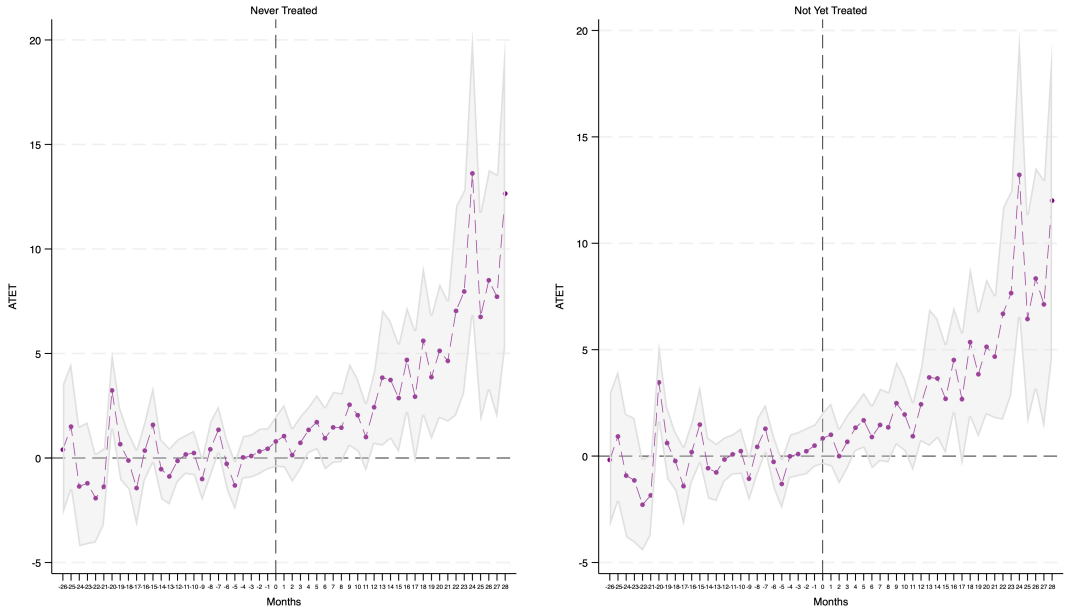
Appendix F

Table 8: Effects of Care Blocks on Domestic VAW Reports

dC&DH's 2020 Total VAW Calls	Panel A: Never Treated		Panel B: Not Yet Treated	
	(1)	P$>|z|$	(2)	P$>|z|$
T_{+1}	1.047	0.172	1.002	0.186
T_{+5}	1.713**	0.010	1.68**	0.011
T_{+10}	2.046**	0.022	1.954**	0.027
T_{+15}	2.867**	0.032	2.692**	0.041
T_{+20}	5.127***	0.002	5.136***	0.002
T_{+25}	6.752***	0.009	6.441***	0.011
# of Observations	19,020		16,680	
Cadastral and Month FE	X		X	
Pre-Treatment Mean	10.11		10.91	
# of Observations	19,020		16,680	
# of Controls	16,829		14,489	
# of Treated Units	2,191		2,191	

Notes: This table presents difference-in-differences estimates from Eq. 1 using different estimators, comparing cadastral sectors that are close to the Care Block with those that are over 31.9 minutes walking distance as a control group. Columns (1) and (2) in Panel A assess total and high-risk VAW call effects for never-treated sectors. Columns (3) and (4) in Panel B estimate these effects for not-yet-treated sectors. All regressions include cadastral sector and month fixed effects. Significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Standard errors are clustered at the cadastral level.

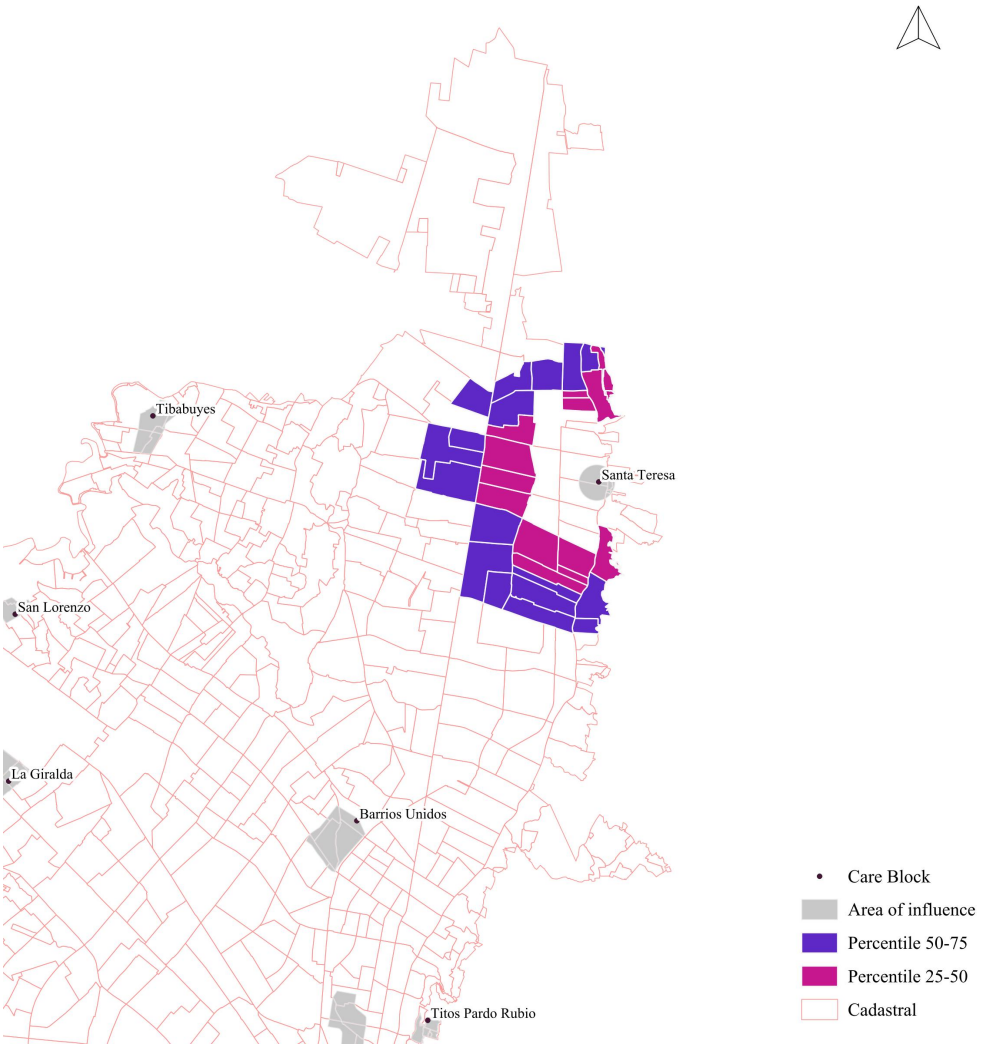
Figure 16: Impact of Care Blocks on Domestic VAW Calls



Notes: These figures display the estimated coefficients and 95% confidence intervals from Equation 1 using De Chaisemartin and D'Haultfœuille (2020) estimator, illustrating the impact of Care Blocks on total VAW calls at the cadastral zone level. The left panel uses never-treated zones as the control group, while the right panel uses not-yet-treated zones. The estimation includes cadastral and month fixed effects, with standard errors clustered at the cadastral level. Each period spans twenty months, with period -1 omitted from the analysis.

Appendix G

Figure 17: Placebo Treatment Groups (Walking Time Thresholds)



Notes: This map visualizes the placebo treatment groups used to assess the robustness of the Santa Teresa Care Block analysis. The primary treatment group is defined as cadastral sectors within 31.9 minutes (25th percentile). For placebo tests, fuccia areas denote sectors within the 25th-50th percentile walking time (32-48.95 minutes), and purple areas denote sectors within the 50th-75th percentile (48.96-69.1 minutes).

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