ERASMUS UNIVERSITY ROTTERDAM

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MASTER THESIS

The COVID-19 Lockdown and the Subsequent Effect on Different Types of Intimate Partner Violence in the Netherlands

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Abstract

Domestic abuse and intimate partner violence (IPV) are a prevalent global problem. With the outbreak of COVID-19 and the subsequent lockdowns, the context changed in a way that might have potentially lead to more IPV. With most literature focusing on the rise of domestic abuse and IPV in general, this thesis aims to shed more light on the effects on different types of IPV, being physical abuse, emotional/psychological abuse and abuse where both the types are present, during the first COVID-19 lockdown. Using data from the national domestic abuse agency in the Netherlands (*Veilig Thuis)*, I conducted a diffence-in-difference analysis. Estimates for each type of IPV are insignificant, after correcting for inadequacies in reporting. Robustness checks looking into different regions within the Netherlands were also insignificant. A potential explanation for the lack of a significant rise in IPV might be that the first lockdown was for some people a good experience initially, considering the closure of schools and reduced working hours, leading to more spare time.

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Table of Contents

1. Introduction

Domestic violence, and in particular intimate partner violence (IPV), is a frequently occurring and global problem in society. It is estimated that 30% of women have been subjected to intimate partner violence (WHO, 2021). The effects of such violence are wide-ranging and severe. Domestic violence has been shown to lead to an increased level of depression and lower levels of self-esteem (Cascardi & O'Leary, 1992; Sternberg et al., 1993; Levendosky & Graham-Bermann, 2001) and post-traumatic stress disorder (Jones et al, 2001.; Perez et al., 2012), while in the worst cases, it might even lead to death (Bouillon-Minois et al., 2020). Furthermore, the British Home Office estimates that the societal cost of domestic violence is over 34,000 British pounds per year, consisting of the physical and emotional harm, lost output and the use of health services (Oliver et al., 2019).

Meanwhile, the COVID-19 pandemic has led to significant changes in the lives of people around the globe. People lost their job or had the fear of losing their jobs, leading to financial distress and uncertainty, while many people started to shift from working on location to working remotely. School closings resulted in children spending more time at home, and the closure of restaurants, bars and activity centers diminished the possibility for people to go out. Changes in economic situations or uncertainty regarding such situations, as well as parents being more at home as a result of unemployment, have been shown to be a potential cause of domestic violence (Aizer, 2010; Anderberg et al., 2016).

For this reason, it has been of interest in the academic literature to determine whether the COVID-19 pandemic and the subsequent lockdowns have led to an increase of domestic violence. Results of these studies vary and are ambiguous. Furthermore, there seems to be a gap in the literature when it comes to different types of domestic abuse and the lockdown. While the lockdown itself and the effect on domestic violence and IPV has been intensively studied, a distinction between different types of abuse has rarely been made. To get a broader understanding, this thesis will therefore research the effect of the lockdown measures on different forms of intimate partner violence (IPV), which is a form of domestic abuse, on their own during the first lockdown in the Netherlands.

This thesis follows up on the findings of Coomans et al. (2022), who find no effect of the pandemic and lockdown on domestic violence in the Netherlands on aggregate, without looking at the different forms of violence, such as emotional or physical violence, or cases where both types occurred. The non-significant effect by Coomans et al. (2022) might have been driven by an increase in one form of abuse and a decrease in another form of abuse, while these effects are balanced out on the aggregate level. Therefore, it is important to look at the different types of violence on their own. Furthermore, Coomans et al. (2022) find an increase of non-professional reporters (neighbors, for example) while

the number of reports remained similar. This could imply that the lockdown did not just affect domestic violence, but also reporting behavior regarding domestic violence. It is safe to assume that physical abuse might be easier to spot for a neighbor than emotional abuse, and that therefore effects of the lockdown could differ with respect to different types of abuse.

Therefore, this thesis will look into the different forms of intimate partner violence (IPV), which is a form of domestic abuse, on their own during the first lockdown in the Netherlands. A distinction will be made between physical abuse, emotional/psychological abuse and abuse where both forms take place. I will make use of data from *Veilig Thuis* (Safe Home), which is the official domestic violence agency in the Netherlands. After filtering, the data covers 15 *veiligheidsregio's* (safety regions) in the country and covers all the reports of domestic violence in the Netherlands to *Veilig Thuis* between January 1st, 2019 up until December 13th, 2020. By using the trend of domestic violence in 2019 as a counterfactual for 2020, when the COVID-19 pandemic and the subsequent lockdowns hit, a conclusion can be drawn about the effect of the lockdowns on the different forms of IPV. A difference-in-difference design with fixed effects will be used, similar to Leslie & Wilson (2020) and Tanaka & Okamoto (2021), albeit that the dependent variable for the latter is different (they look into suicide rates instead of domestic violence). As the first lockdown was relatively unexpected for the majority of the Dutch population, anticipation-effects are no threat to identification, and a difference-in-difference design suits the framework.

The difference-in-difference model is used across 15 safety regions in the Netherlands, comparing IPV-cases before and after the lockdown measures were implemented, relative to 2019. No significant effects are found on the number of cases involving either emotional IPV, physical IPV or a mixture of the two, after accounting for inadequacies in reporting from the national domestic abuse agency (*Veilig Thuis)*. The number of reports for either type of IPV also showed no significant change after the implementation of lockdown measures. Zooming in into different regions both in terms of demography and geographical locations showed no significant effects for subsets of regions. This means that there is no evidence that the lockdown measures implemented in the first lockdown in the beginning of 2020 did lead to different trends in the different types of intimate partner violence.

I add to the broad literature surrounding the effects of the lockdown on domestic violence and intimate partner violence (among others, Piquero et al., 2020; Leslie & Wilson, 2020; Kourti et al., 2021) by providing a better understanding about the effects on IPV in the Netherlands. Most importantly, I add to Coomans et al. (2022), who found that there was no effect on domestic violence in the Netherlands. Whereas their focus was on domestic violence as a whole, I emphasized on IPV and more importantly, made a distinction between different types of violence. Earlier research trying to focus on

these different types of violence such as El-Nimr et al. (2021) and Mahmood et al. (2022) mostly use online questionnaire as a sample for their research, which might potentially suffer from survey bias and sampling bias. This thesis uses data from a national domestic violence agency and thereby will probably have a more unbiased sample. Therefore this thesis adds to the literature by providing a more solid found conclusion about the effects on different types of violence, while also providing the Dutch government insight on the effects of the imposed lockdown in regards of IPV cases.

This thesis will be structured as follows. Chapter 2 will provide a literature review about domestic violence and IPV. Furthermore, a brief overview of the unfolding of the first COVID-lockdown in the Netherlands will be presented. In Chapter 3, the data is described and in Chapter 4, the methodology will be presented. In Chapter 5, the results will be presented. Chapter 6 will present the robustness checks and Chapter 7 will serve as an conclusion.

2. Literature review

2.1 Risk factors for domestic abuse and intimate partner violence

To understand how COVID-19 and the subsequent lockdowns could have affected IPV and the different types of IPV, it is first relevant to understand what are risk factors for domestic abuse and intimate partner violence. Capaldi et al. (2012) provide a systemic review of earlier research on this topic and highlight a multitude of risk factors for domestic abuse and IPV, of which a couple are relevant to the period surrounding the COVID-19 outbreak and the lockdown. First of all, stress seems to be an important risk factor for IPV. In a variety of contexts, it has been proven that stress is related to more domestic violence and partner abuse (among others, Slep et al., 2010; Neff et al., 1995; Probst et al. (2008)). Stress is mostly associated with a higher likelihood of a person being a perpetrator of IPV. With the closings of businesses, shutdown of offices and the concurring financial risk for both companies and employees, increased stress levels are to be expected during the first COVID-lockdown. Research has also shown that stress levels did indeed increase during the first lockdown (Brooks et al., 2020; Roy et al., 2020).

Furthermore, Capaldi et al. (2012) also identify depression as a risk factor for domestic violence and IPV. Whereas stress was related to IPV on the perpetrators behalf, depression is related to both a higher likelihood of being a perpetrator of IPV (Capaldi & Crosby, 1997; Kim & Capaldi, 2004), but also related to a higher likelihood of being a victim of IPV (Lehrer et al., 2006; Kim et al., 2008). It has been shown that depressive symptoms of the Dutch population have risen during the period of the lockdown (Trimbos, 2021), and therefore one might expect an increase in intimate partner violence and potentially in the different types of IPV.

Lastly, Capaldi et al. (2012) present drugs and alcohol abuse as a risk factor for IPV. Whereas alcohol is more recognized as being a risk factor for perpetration of IPV due to its 'disinhibitory effect on aggression', the results for drug use are more mixed. Some papers find no effect of drug use on IPV (Ehrensaft et al., 2003), others found a significant effect on IPV (Feingold et al., 2008) and some found the effects of both substances to be significant only when both alcohol and other drugs were involved (Herrenkohl et al., 2007). However, most drugs and alcohol usage seemed to have decreased during the first lockdown in the Netherlands, with an exception of marihuana usage (NOS, 2021), so it is not expected that drugs and alcohol abuse will have an effect on intimate partner violence during the first lockdown.

However, there are more risk factors for intimate partner violence. Changes in economic situations or uncertainty regarding such situations, as well as parents being more at home as a result of unemployment have been identified as a risk factor (Aizer, 2010; Anderberg et al., 2016; Schneider et al., 2016). Furthermore, it has been shown that in times of crisis, domestic violence increases (Otero-García et al., 2018; Leroux et al., 2019). Card & Dahl (2011) find that negative, unexpected emotional cues are a cause of domestic violence. These mentioned risk factors were all present in the first COVID-lockdown, which came out of the blue for most people and led to uncertainty regarding jobs, income and life all together. Therefore, one would expect an increase in IPV and in the different types. However, one must consider that for some, the first weeks of lockdown were a pleasant experience. School closures led to more free time and work hours were reduced in some cases. Tanaka & Okamoto (2021) argue that this might be the reason why suicides rates declined during the first part of the lockdown, but when these pleasant experiences wore out, suicide rates increased. The same case might be for intimate partner violence; having more free times to spend with one's significant other might be a great thing at first, but after a couple weeks this effect might wear off and other risk factors, as described earlier, might dominate.

2.2 Earlier research on domestic abuse and IPV and the COVID-19 lockdowns in general

The effects of COVID-19 lockdowns on domestic abuse and IPV have been studied intensively, with ambiguous results. Kourti et al. (2021) provide a systemic review and present varying varying results. Brülhart & Lalive (2020) and Stiegler & Bouchad (2020) find a negative relationship between domestic violence and the lockdowns. However, among others, Boserup et al. (2020) and Pfitzner et al. (2020) find a positive relationship between the lockdown and domestic violence. Silverio-Murillo et al. (2020) find no significant effect. It is important to note, however, that numerous papers in the systemic review of Kourti et al. (2021) do not have a solid methodology and do mostly rely on correlations, rather than strong causal relationships.

Therefore I deem it necessary to discuss some of the papers about COVID-19 lockdowns and domestic abuse that do have a stronger methodological approach, and to discuss their findings. First, Coomans et al. (2022) present a paper on the relationship between domestic violence and the COVID-19 lockdowns in the Netherlands. They use a 'Seasonal Auto-Regressive Integrated Moving Average with eXogenous variables (SARIMAX)'-model, to predict the domestic violence trend during the first 80 days of the first lockdown in the Netherlands. As these trends are based on data from 2019 and the first 2.5 months of 2020 (before the lockdown started), they would serve as a counterfactual to the lockdown. They also account for the seasonality of domestic violence. They find no significant effect of the COVID-lockdown on domestic violence, based on the national data from domestic abuse-centers (*Veilig Thuis)*. It is noteworthy that this is the same dataset that will be used in this thesis.

Leslie & Wilson (2020) use a difference-in-difference approach to find the effects of the lockdown on domestic violence in the United States. They use the trend in police calls for domestic violence in 2019 as a counterfactual for 2020, as simply comparing the trend before the lockdown in 2020 and after the lockdown in 2020 would suffer from seasonality bias, as there is a seasonal trend in domestic violence. They find a 7.5% increase in domestic violence as a result of the lockdown, which was mostly driven by the extensive margin, meaning that the increase can mostly be attributed to households where domestic violence had not taken place before the lockdown. A similar methodological approach will be used in this paper.

Piquero et al. (2020) use a number of different models, among which an Auto-Regressive Integrated Moving Average (ARIMA)-model, to estimate the effect of the stay-at-home orders on domestic violence in Dallas, USA, based on the number of police calls about domestic violence. They find a spike in domestic violence in the first two weeks of the lockdown, but a gradual decrease thereafter, to the point where there is no significant effect anymore. These three papers, with solid methodological approaches, display the ambiguity in the literature surrounding the effects on domestic violence.

2.3 Earlier research on the effect of COVID-lockdowns and the types of domestic abuse/intimate partner violence

Since the topic of this thesis revolves around the effect of lockdowns on the different types of violence it is important to review the literature on how the lockdowns affected the types of domestic abuse and IPV as well. Jetelina et al. (2021) find that for IPV in the United States, victims facing physical abuse were more at risk of facing more severe abuse than victims facing emotional abuse. Smyth et al. (2021) argue that the conditions of the COVID-lockdowns pave the way for more 'coercive'-control, which is more of emotional nature, rather than for more physical violence. El-Nimr et al. (2021) find that the rise in physical abuse is almost exactly the same as the rise in emotional abuse for women in Saudi-

Arabia in the first lockdown (6.2% vs. 6.1% increase). Mahmood et al. (2022) find similar results in Iraq, where the increase in physical domestic abuse is about the same as the increase in emotional domestic abuse. Fawole et al. (2021) and Sanz-Barbero et al. (2023) find that there is mostly an increase in the severity of domestic abuse in respectively Nigeria and Spain during the lockdown, but not an increase in the number of cases. These papers draw varying conclusions about the different types of intimate partner violence and domestic abuse during the lockdown and therefore, it is hard to hypothesize the answer to the central question in this paper. Considering the aforementioned papers, it is important to note that most of these papers came out early in the pandemic, which meant that the authors conducted mostly online surveys, which might suffer from survey bias, and most of them are not built on strong methodological approaches. Apart from Sanz-Barbero et al. (2023), who use data from the ministry in Spain, all of the aforementioned papers are based on online surveys or have a very small number of observations. This shows that there is a gap in the academic literature on the relationship between the COVID-lockdowns and the type of domestic violence.

2.4 The development of COVID-19 and the subsequent lockdown in the Netherlands

After COVID-19 originated in Wuhan in November 2019, it spread out and reached Europe in the beginning of 2020. On the 27th of February 2020, the first case of COVID-19 was identified in the Netherlands. In the first week of March, more COVID-19 patients got identified in the Netherlands, mostly in the Southern region of Noord-Brabant. On the 6th of March, the first COVID-19 patient died because of the virus. From then on, the virus spread and held the country of the Netherlands in its grip firmly.

The government started imposing measures against the virus rapidly after these events occurred. On the 8th of March, schools in the region of Noord-Brabant were closed due to the spread of the virus. On the 9th of March, large events were forbidden in the region of Noord-Brabant, which was extended to the entire country on the 12th of March. On this day, the government urged people to start working remotely as well. On the 16th of March, a large set of new measures were implemented. Schools throughout the entire country were closed, sports facilities had to close and bars and restaurants were no longer allowed to stay open. Social distancing had to become the norm, and in an effort to keep up the spirits of the Dutch population, the prime minister held a speech on national television about the risks of COVID-19, the measures that were taken, and the need to fight this pandemic together as a society. All of these measures remained in place up until the 11th of May, when there was a relaxation of some measures. Primary schools reopened and exercising outside was once again allowed, as long as the social distancing was maintained. The weeks hereafter saw some more relaxations of the measures (Rijksoverheid, n.d.).

3. Data

This thesis uses data from *Veilig Thuis*, which is the official domestic violence agency in the Netherlands. Upon contact with a reporter on domestic violence, whether that is the victim, perpetrator or a bystander, employees of this agency are obliged to report this contact. Employees from *Veilig Thuis* are required to provide advice and, if necessary, provide support to every individual that stands in connection with domestic abuse or child abuse, if asked for (Veilig Thuis, n.d.). The agency has the right to start an investigation upon these reports, and if deemed necessary, can take measures to protect victims of domestic violence. Regardless of the severity, assessment or nature of the report, *Veilig Thuis* is obliged to file a report and put these in a database.

The data used in this thesis contains all the reports that *Veilig Thuis* received in 2019 and 2020 in the 26 distinct regions, which are the so called '*veiligheidsregio's'* in the Netherlands. A map of the regions can be found in figure 4 in Appendix A. Some reporters report the same case of domestic violence, meaning that multiple reports show up in the database for a single case. Therefore, a unique marker is added to every case of domestic violence, to differentiate between the number of cases and the number of reports. In this thesis, I will make use of unique cases, rather than the number of reports, since the central question revolves around the prevalence of different types of IPV, rather than the amounts it was reported. A minor caveat of this approach is that when multiple instances of IPV occur in a single household over time, *Veilig Thuis* still views this as being one case, despite the violence occurring multiple times over time. This means that an increase in prevalence of domestic violence within a household that already witnessed domestic violence would not immediately show up when one is looking at unique cases. However, the amount of such households, with multiple instances of domestic violence over time is relatively small. This does mean that this paper looks at the extensive margin (households where IPV has not taken place before). However, to provide some insight about the internal margin (households where IPV has taken place before), regressions were also run on the number of reports over time.

Veilig Thuis divides cases of domestic violence into six categories: IPV and Child Maltreatment, Child Maltreatment, IPV, Violence against parents, Violence against the elderly, and other problems. The aim of this thesis is to look into the effect on intimate partner violence, and therefore only cases from the first and third category are being used. Within these categories for intimate partner violence, the nature of the violence is also divided into categories, being: Physical abuse, Emotional/Psychological abuse, Sexual abuse, Stalking, Financial abuse and other forms of IPV. Physical abuse and Emotional/Psychological abuse are the largest categories of IPV, and are also the two forms that are focused on in this thesis. Whereas some cases were only subject to one of these types of IPV, a

substantial amount of cases contained a multitude of natures of violence. A distinction was made between three types of nature of IPV in this paper. If a case was classified with physical abuse solely, or in combination with sexual abuse, stalking, financial abuse and/or other forms of IPV, it was classified as a 'physical abuse-case'. If a case was classified with emotional/psychological abuse solely, or in combination with sexual abuse, stalking, financial abuse and/or other forms of IPV, it was classified as a 'emotional abuse-case'. If a case contained both physical abuse emotional/psychological abuse, it was classified as a 'mixed-case'. If the nature of the violence did not contain either of physical abuse or emotional/psychological abuse, it was left out of the analysis. The latter group did only constitute for about 3% of cases, and therefore dropping these cases is not that impactful.

The dataset does suffer from some limitations. Since the administration policy of *Veilig Thuis* was changed in 2019, data prior to this year is not present. Furthermore, with the implementation of the new administration policy being so recent, it is notable that some regions were not adapt to the change immediately. This led to reporting mistakes on behalf of *Veilig Thuis.* Of the 26 regions that *Veilig Thuis* has in the Netherlands, 15 regions reported the cases of IPV properly, including the nature of the violence. These 15 regions can be found in Table 7 in Appendix A. Only these regions are therefore eligible to be used in the analysis. The data that is used contains the first 18 weeks of both 2019 and 2020, as the lockdown started in week 10 with the measures in the region of Noord-Brabant and relaxation of the measures started in week 18 with the re-opening of primary schools throughout the country. The weeks used in this thesis might not precisely correspond to the calendar weeks of these years, as even-sized weeks were created for 2019 and 2020 starting from January 1st, in order to optimally compare the two. For the first 18 weeks in the year of 2019, there were a total of 1868 emotional-abuse cases, 1397 physical-abuse cases and 1466 mixed-cases. For the first 18 weeks in the year of 2020, there were a total of 2688 emotional-abuse cases, 1336 physical-abuse cases and 1976 mixed-cases. The average number of weekly reports per type of abuse per region can be seen in Table 1.

Table 1: *The average number of abuse cases per week per region, split between the different types of IPV.*

Region	Emotional Abuse		Physical Abuse		Mixed Abuse	
	2019	**2020**	**2019**	**2020**	**2019**	**2020**
Flevoland	7.167	9.944	4.333	3.667	5.5	7.5
Haaglanden	18.444	28.889	9.389	5.5	20.111	28.833
Kennemerland	2.778	3.944	5.333	4.222	1.833	3.333
Gooi- en Vechtstreek	0.667	1.333	0.667	1.556	0.5	2.333
Zeeland	3.667	1.5	3.389	3	2.056	1.444
Brabant Noordoost	4.556	7.389	4.056	3.778	5.278	4.611
Noord- en Midden-Limburg	1.778	3.667	1.833	3.667	1.778	3.5
Hollands Midden	9.556	13.333	7.722	3.5	6.944	10.833
Utrecht	15.222	22.778	8.056	8.222	11.222	13.833
Midden-Brabant	7	7.667	7.5	4.556	3.389	4.778
Amsterdam Amstelland	18.944	30.611	12.944	19.278	10.5	14.278
Zaanstreek Waterland	5.222	4.556	2.667	2	4.5	4.167
Zuidoost Brabant	3.222	6.222	3.278	5.111	2.222	3.778
IJsselland	3.056	3.056	3.111	3.5	2.944	3.833
Zuid-Holland Zuid	2.5	4.444	3.333	2.667	2.667	2.722

In Figure 1,2 and 3 the development of the number of cases for each type of intimate partner violence is shown. It is important to note that with the new administration policy of Veilig Thuis, which only started in 2019, some regions had issues with adequately reporting some of the cases. Therefore, for the first month (the first four weeks), some data is missing. When the graph jumps at week 5 in 2019, this is no sign of a sudden rise in IPV-cases, but rather some regions catching up with the new administration policy.

Figure 1: The development of physical abuse cases over the years 2019 and 2020. The lockdown started in week 10 in 2020.

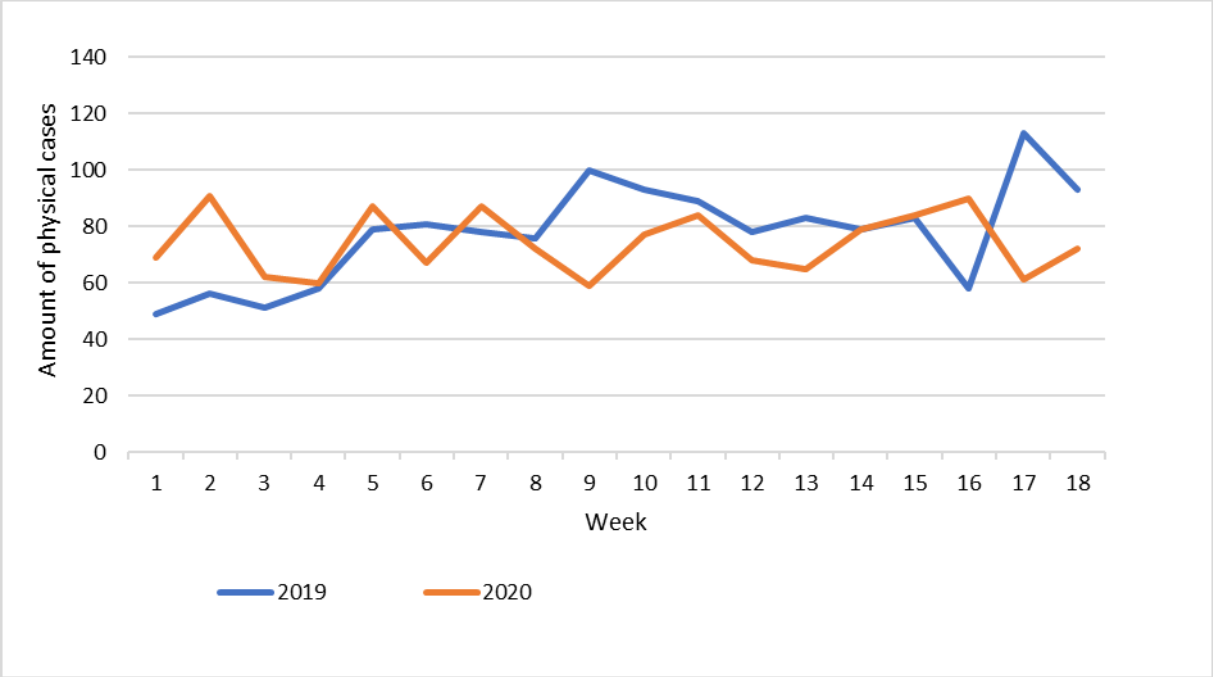


Figure 2*: The development of emotional/psychological abuse cases over the years 2019 and 2020. The lockdown started in week 10 in 2020.*

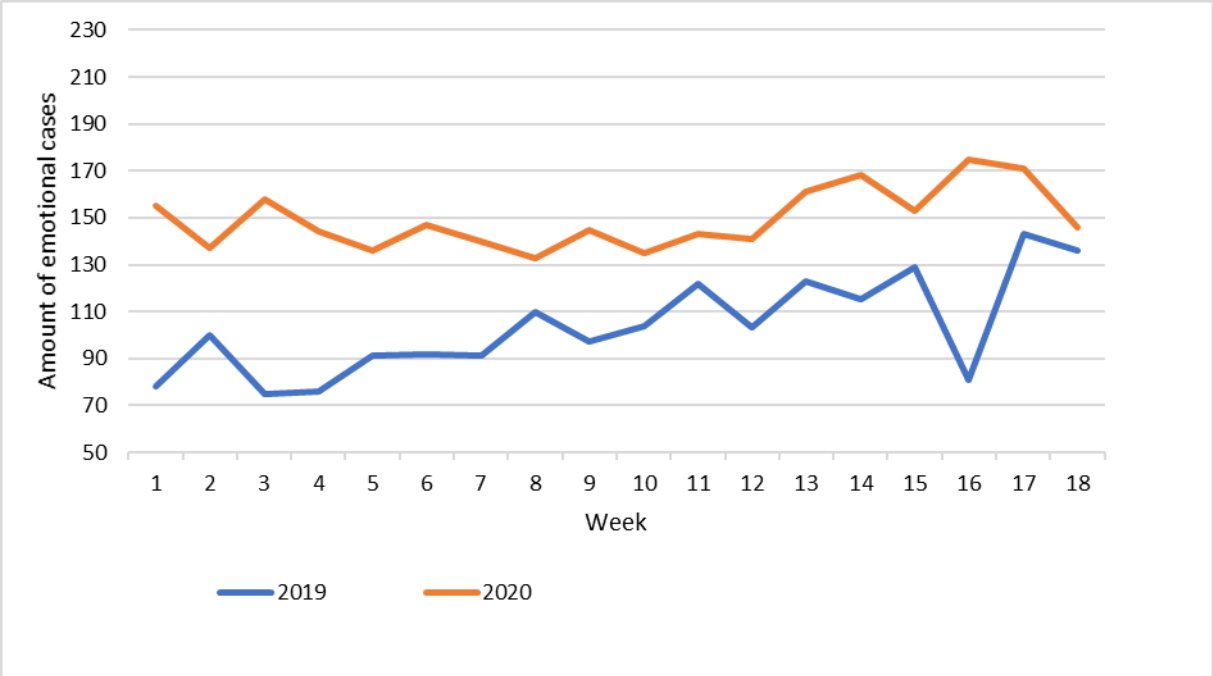
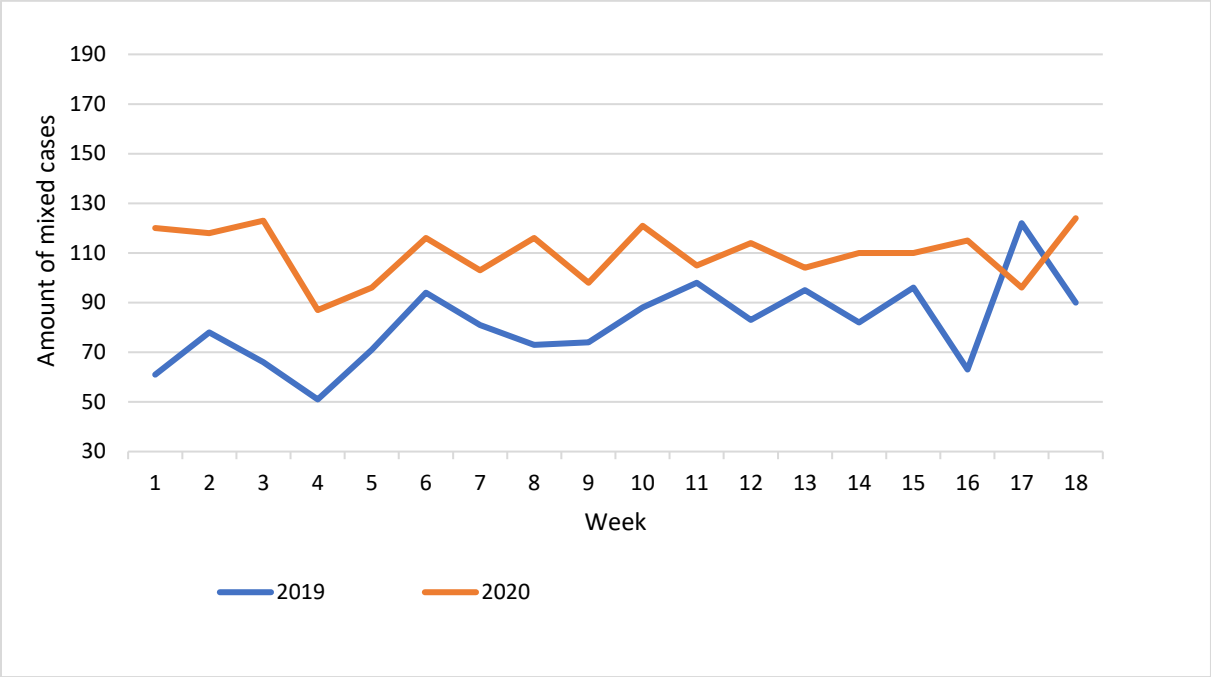


Figure 3: *The development of mixed abuse cases over the years 2019 and 2020. The lockdown started in week 10 in 2020*



4. Methodology

In order to estimate the effects of the COVID-19 pandemic and the subsequent lockdowns, a difference-in-difference model is used. A basic comparison of cases of intimate partner violence in the weeks before and after the lockdown would be imprecise, since there is seasonality in domestic violence trends (Piquero et al., 2021). Estimates show that not accounting for this seasonality could potentially lead to an overestimation of the effect twice the size of the actual effect (Leslie & Wilson, 2020). In order to account for this seasonality, 2019 will be used as a counterfactual to 2020, since 2019 had no measures like school closings and social distancing. A similar approach is used by Leslie and Wilson (2020) as well as Tanaka and Okamoto (2021) when trying to establish the effect of COVID-19 and the lockdowns on respectively domestic violence calls in the United States and suicide rates in Japan. As explained earlier, the first COVID-measures were taken in the region of Noord-Brabant, on the 8th of March. This corresponds to the 10th week in the year in the dataset (as stated: there might be a small discrepancy with calendar weeks as a result of evening out the weeks). Therefore, week 10 is used as the threshold as to when the COVID-measures were taken.

As mentioned, there is some seasonality in domestic abuse cases, and therefore one cannot compare the cases of IPV in the weeks before the lockdown with the first weeks of the lockdown. To determine whether such seasonality is also present in this dataset, the following regressions was ran.

$$AbuseCases_{rw} = \alpha + \beta_1 * Lockdown_w + \phi_r + \varepsilon_{rw} \quad (1)$$

This regression will be used for the year 2019 and 2020 separately. The dependent variable is the number of a singular type of abuse cases in *Veilig Thuis*-region *r* in week *w.* $Lockdown_w$ is a dummy-variable that takes on the value of 1 for weeks 10 until week 18, which is the period when the first lockdown was in place, and 0 otherwise. ϕ_r captures region-specific fixed effects, since that are structural differences between the regions. For example, the regions of Haaglanden, Utrecht and Amsterdam Amstelland, experience much more cases of IPV than regions like Gooi- en Vechtstreek and Zeeland. ε_{rw} is the error-term.

However, due to seasonality, this regression is not appropriate to estimate the effects of the lockdown. A comparison of 2019 with 2020 is appropriate and overcomes the problem of seasonality, and is therefore capable of estimating a causal effect. Using both years leads to the following regression.

$$AbuseCases_{rwy} = \alpha + \beta_1 * Lockdown_w + \beta_2 * Year2020_y + \beta_3 * Lockdown_w\#Year2020_y + \phi_r + \varepsilon_{rwy} \quad (2)$$

Here, the dependent variable is the number of a singular type of abuse cases in *Veilig Thuis*-region *r* in week *w* in year *y.* $Lockdown_w$ is a dummy-variable that takes on the value of 1 for weeks 10 until week 18, which is the period when the first lockdown was in place. $Year2020_y$ is dummy-variable that takes on the value 1 for cases that took place in the year 2020. $Lockdown_w\#Year2020_y$ is an interaction-variable between the two aforementioned variables, and its coefficient is the variable of interest and will show whether the lockdown did or did not have an effect on the amount of intimate partner violence cases for each type of abuse during the lockdown. ϕ_r captures region-specific fixed effects. ε_{rwy} is the error-term. This model was also estimated with the natural logarithm of the dependent variable. Since some weeks saw 0 abuse cases, a one was added, to avoid observations with a natural logarithm of zero, as it is not defined.

If one wants to use a difference-in-difference model to obtain causal effects, there is one identifying assumption that needs to be satisfied, which is the common trend assumption. The trends should follow a similar path up until the cutoff point, which is week 10 in this case, in order to establish that 2019 serves as a solid counterfactual for 2020. Figure 2 and figure 3 show quite a similar trend in the first 9 weeks of the year, so the assumption is satisfied for emotional/psychological and mixed cases right away. For physical abuse cases, one can see in figure 1 that the trends are not completely similar, but there is case to be made. As mentioned before in this thesis, due to the new administration policy of *Veilig Thuis,* the first 4 weeks were not reported adequately in some of the regions. This had the largest effect on physical abuse cases, so the difference there is easily explained. Furthermore, from week 5 until week 10, the trends in the line seem to differ a lot, but that is mostly due to the volatility in the 2020 graph. If one looks at the datapoints for week 5 and week 10 on their own, 2019 only sees a small increase, where 2020 just decreases. There's not much divergence, so a difference-in-

difference design should still be applicable. However, for physical abuse cases, this is a weakness in the analysis.

Furthermore, when using a difference-in-difference model, it is important that there are no anticipation effects. If individuals know that there is about to be a policy change, one could adapt his or her behavior pre-intervention, and thereby influencing the jump in the graph after the policy change has happened. In this context, it means that people should not have anticipated a lockdown to be implemented. If that were the case, people might have gotten stress before the actual implementation and as a result, this could have influenced the number of intimate partner violence cases before the actual lockdown started. However, looking at how unexpected the global pandemic and actual lockdown measurements were at the time and how fast they were rolled out, no anticipation effects are to be expected in this setting.

To take the inadequacy of the reporting of cases into account, multiple different regressions were run. First, the first 4 weeks were dropped. Second, the regions that suffered from these inadequacies were dropped, and all weeks were included. To get a better understanding of whether reporting patterns changed during the lockdown, regressions were also run with the number of reports as the dependent variable. Furthermore, some robustness checks were performed. First, the cutoff-point for the weeks of the lockdown was one week later. Whereas week 10 witnessed the first lockdown-measures, the first serious measures (closure of schools and restaurants for example), were implemented in week 11. Second, numerous robustness checks were performed in order to establish differences in effects between regions.

Lastly, it was desired to do a placebo-test, where 2018 could be used as a counterfactual to 2019. Since both years did not experience the COVID-outbreak and the subsequent measures, this could have been used to show that 2019 is a good counterfactual for 2020. However, since the new administration policy of *Veilig Thuis* was only implemented in 2019, such a placebo-test can not be performed. However, as comparing these years to estimate the effects of the lockdown has been done before (Leslie & Wilson, 2020, Tanaka & Okmoto, 2021; Coomans et al., 2022), it can be assumed that 2019 serves as a good counterfactual for 2020.

5. Results

This section will serve as a presentation of the results. First, regression results for both years will be presented separately, to display whether a seasonal trend was present. Second, regression results for the entire sample will be presented, which serve as the main answer for the central question in this thesis. Hereafter I will drop the first four weeks from the analysis, considering the fact that there are

some inadequacies in reporting in these weeks. Lastly, I will provide insight on reporting behavior before and after the lockdown.

5.1 Results for before-after comparisons for the years 2019 and 2020

Table 2 presents difference-in-difference results for the years 2019 and 2020 being used separately. These estimates were expected to show seasonality, and the results provide evidence for this hypothesis. For 2019, the coefficient for physical abuse is significant at the 5%-level, while the coefficients for emotional abuse and mixed abuse are significant at the 1%-level. These results indicate that there is an increase over time in IPV. This would imply a seasonal trend in IPV. However, it is noteworthy that some of this effect might be driven be the inadequate reporting in the first weeks of 2019. In 2020, only the coefficient for emotional abuse is significant at the 10%-level; the others are insignificant. The lack of a significant coefficient in 2020 does lead to an expectation that the lockdown did not have a significant effect on IPV-cases, neither does it showcase a seasonal trend.

Table 2*: Before-after estimates of the effect of the lockdown period on each different type of IPV for 2019 and 2020.*

	2019	2020
Outcome: Emotional abuse		
Lockdown	1.807***	0.726*
	(0.560)	(0.396)
Constant	6.263***	9.581***
	(0.811)	(0.871)
Mean dep. var.	6.919	9.956
R-Squared	0.6334	0.8979
Outcome: Physical abuse		
Lockdown	1.044**	0.178
	(0.411)	(0.292)
Constant	3.811***	3.578***
	(0.475)	0.498
Mean dep. var.	5.174	4.948
R-Squared	0.4935	0.7585
Outcome: Mixed abuse		
Lockdown	1.244***	0.163
	(0.371)	(0.358)
Constant	4.878***	7.419***
	(0.733)	0.759
Mean dep. var.	5.430	7.319
R-Squared	0.7400	0.8561
Number of obs.	270	270
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. Column 1 represent 2020, whereas column 2 represents 2020.

5.2 Main results, which account for seasonality

Whereas the seasonality displayed a positive coefficient for IPV in 2019, the result for the appropriate regression show a negative coefficient mostly. In the first model, with the absolute dependent variable, only for mixed abuse a significant negative coefficient is found. However, in the model with the logarithmic dependent variable, both mixed abuse and physical abuse show a negative coefficient significant effect at the 5%-level, while for emotional abuse the negative coefficient is significant at the 10%-level. This would mean that the lockdown led to a decrease in IPV-cases, mostly for the physical abuse and mixed abuse.

Table 3: *Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV, using 2019 as the counterfactual.*

	Absolute dependent variable	Logarithmic dependent variable
Outcome: Emotional abuse		
Lockdown	1.807**	0.212***
	(0.600)	(0.072)
Year2020	3.578***	0.387***
	(0.568)	(0.068)
Lockdown#Year2020	-1.081	-0.151*
	(0.754)	(0.088)
Constant	6.133***	1.928***
	(0.689)	(0.074)
Mean dep. var.	8.437	1.850
R-squared	0.7630	0.6903
Outcome: Physical abuse		
Lockdown	1.044**	0.184**
	(0.433)	(0.075)
Year2020	0.207	0.093
	(.419)	(0.075)
Lockdown#Year2020	-0.867	-0.195**
	(0.542)	(0.097)
Constant	3.591***	1.440***
	(0.420)	(0.086)
Mean dep. var.	5.061	1.545
R-Squared	0.5602	0.4267
Outcome: Mixed abuse		
Lockdown	1.244***	0.214***
	(0.393)	(0.069)
Year2020	2.430***	0.392***
	(0.392)	(0.068)
Lockdown#Year2020	-1.081**	-0.204**
	(0.546)	(0.088)
Constant	4.933***	1.670***
	(0.563)	(0.090)
Mean dep. var.	6.374	1.644
R-Squared	0.7883	0.6499
Number of obs.	540	540
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset.

However, one should keep in mind that there was inadequacy in reporting in the first weeks of 2019, and that his might lead to the negative coefficient that is found. In order to test this, the first 4 weeks

were dropped from the analysis. The results can be found in Table 4. After dropping the first 4 weeks, for all types of IPV, the coefficient for the interaction-variable becomes insignificant, both for the model with the absolute dependent variable as for the model with the logarithmic dependent variable. It shows that the significant result in the previous table was indeed driven be the inadequate reports and that there in fact is no significant effect of the lockdown on the different types of intimate partner violence. A difference approach to test whether the significant results were driven by the inadequate reporting was to exclude the regions that suffered from the inadequacies, being Zuidoost-Brabant, Amsterdam Amstelland and Gooi- en Vechtstreek. Doing so also leads to all coefficients becoming insignificant. The results for this alternate approach can be found in Appendix B in Table 6.

Table 4: *Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV, with the first four weeks being dropped.*

	Absolute dependent variable	Logarithmic dependent variable
Outcome: Emotional abuse		
Lockdown	1.382**	0.096
	(0.631)	(0.070)
Year2020	2.907***	0.223***
	(0.658)	(0.074)
Lockdown#Year2020	-0.410	0.013
	(0.823)	(0.092)
Constant	6.576***	2.028***
	(0.841)	(0.086)
Mean dep. var.	8.650	1.882
R-Squared	0.8064	0.7500
Outcome: Physical abuse		
Lockdown	0.176	0.007
	(0.450)	(0.069)
Year2020	-0.533	-0.052
	(0.465)	(0.076)
Lockdown#Year2020	-0.126	-0.050
	(0.574)	(0.098)
Constant	4.230***	1.578***
	(0.472)	(0.092)
Mean dep. var.	5.326	1.595
R-Squared	0.6756	0.5608
Outcome: Mixed abuse		
Lockdown	0.811*	0.079
	(0.440)	(0.069)
Year2020	1.813***	0.276***
	(0.476)	(0.074)
Lockdown#Year2020	-0.465	-0.088
	(0.607)	(0.092)
Constant	5.221***	1.776***
	(0.613)	(0.090)

Mean dep. var.	6.519	1.687
R-Squared	0.8097	0.7035
Number of obs.	420	420
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset.

5.3 Results for the effect on reporting behavior

Lastly, I used the number of reports as the dependent variable. Coomans et al. (2022) find that non-professional reports (by neighbours, for example) increased significantly during the lockdown. If total reports for IPV increased while IPV cases did not change significantly, it might be that there is less underreporting during the lockdown and that therefore the found effect for IPV cases is overestimated. Table 5 shows the results for the regression on the number of reports. A negative significant coefficient was found, showcasing that there is less reporting during the lockdown. However, like with cases, dropping the first four weeks leads to insignificant results, as can be seen in Table 6. Furthermore, no significant coefficient is found if one differentiates between professional and non-professional reporters, as can be seen in Table 9 in Appendix B.

Table 5*: Difference-in-difference estimates for the effect of the lockdown measures on reports for each type of IPV.*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	8.793***	0.315***
	(2.688)	(0.105)
Year2020	19.956***	0.642***
	(2.557)	(0.096)
Lockdown#Year2020	-7.237**	-0.329***
	(3.440)	(0.124)
Constant	32.519 ***	3.345***
	(3.290)	(0.097)
Mean dep. var.	37.357	3.045
R-Squared	0.7639	0.6713
Outcome: Physical abuse		
Lockdown	3.622**	0.306***
	(1.661)	(0.109)
Year2020	3.170*	0.334***
	(1.704)	(0.110)
Lockdown#Year2020	-4.585**	-0.393***
	(2.173)	(0.139)
Constant	16.028***	2.635***
	(1.663)	(0.114)
Mean dep. var.	19.583	2.607
R-Squared	0.5622	0.3974
Outcome: Mixed abuse		
Lockdown	5.200***	0.294***
	(1.946)	(0.105)
Year2020	13.704***	0.667***
	(1.961)	(0.105)
Lockdown#Year2020	-5.2*	-0.332**
	(2.690)	(0.134)
Constant	22.293***	2.908***
	(2.655)	(0.125)
Mean dep. var.	29.967	2.722
R-Squared	0.7662	0.6104
Number of obs.	540	540
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset.

Table 6*: Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV, after excluding the first four weeks.*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	6.785**	0.144
	(2.964)	(0.010)
Year2020	16.467***	0.442***
	(2.944)	(0.099)
Lockdown#Year2020	-3.748	-0.129
	(3.732)	(0.125)
Constant	35.538***	3.509***
	(4.039)	(0.109)
Mean dep. var.	38.190	3.091
R-Squared	0.8010	0.7437
Outcome: Physical abuse		
Lockdown	0.129	0.036
	(1.719)	(0.101)
Year2020	0.453	0.112
	(2.004)	(0.111)
Lockdown#Year2020	-1.868	-0.171
	(2.409)	(0.140)
Constant	19.255***	2.859***
	(1.897)	(0.123)
Mean dep. var.	20.536	2.679
R-Squared	0.6598	0.5177
Outcome: Mixed abuse		
Lockdown	3.201	0.043
	(2.336)	(0.102)
Year2020	11.080***	0.414***
	(2.575)	(0.114)
Lockdown#Year2020	-2.576	-0.079
	(3.151)	(0.141)
Constant	24.301***	3.152***
	(2.951)	(0.114)
Mean dep. var.	27.583	2.785
R-Squared	0.7885	0.6669
Number of obs.	420	420
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset.

6. Robustness checks

It was determined that week 10 was the start of the lockdown, as the first measures were taken in Noord-Brabant in that week. However, the more severe lockdown measures, such as the closure of schools and restaurants and bars, were being put in place a week later. As a robustness check, I determined the cutoff point for the lockdown to be week 11, to see whether the more severe lockdown measures might have had a different effect than just the installment of the lockdown measures in Noord-Brabant. The results can be found in Appendix B in Table 10. The results are insignificant for both physical and emotional abuse, but a significant negative effect is found for mixed abuse cases. However, after dropping the first four weeks from the analysis, this coefficient for mixed abuse is insignificant.

Furthermore, I looked upon geographical differences in effects. The list of regions that are in this thesis was split into Northern and Southern regions, and individual regressions were ran for the two. Northern regions were Flevoland, Kennemerland, Gooi- en Vechtstreek, Amsterdam Amstelland, Zaanstreek Waterland, IJselland. Southern regions were Zeeland, Brabant Noordoost, Noord- en Midden-Limburg, Midden-Brabant, Zuidoost Brabant, Zuid-Holland Zuid. Utrecht, Hollands-Midden en Haaglanden are all on the same geographical line and cannot be grouped into one of the two groups, and are therefore excluded from this test. Regression results for Nothern regions can be found in Table 11 in Appendix C; Results for the Southern Regions can be found in Table 12 in Appendix C. For the Southern regions, none of the coefficients are significant. For the Northern regions, only the coefficient for physical abuse cases in the logarithmic model is significant on the 10%-level. However, this is most likely caused by the inadequate reporting, as dropping the first four weeks leads to insignificance.

Next, I compared the Western regions to the Eastern regions. An arbitrary line was drawn through the middle of the country, leaving eight Eastern regions and seven Western regions. The Eastern regions were Flevoland, Gooi- en Vechtstreek, Brabant Noordoost, Noord- en Midden-Limburg, Utrecht, Midden-Brabant, Zuidoost Brabant, IJsselland. The Western regions were Haaglanden, Kennemerland, Zeeland, Hollands-Midden, Amsterdam Amstelland, Zaanstreek Waterland, Zuid Holland Zuid. Regression result for Eastern regions can be found in Table 13 in Appendix C, while the results for Western regions can be found in Table 14 in Appendix C. For Western regions, the coefficient is insignificant in almost all cases, with the exception that the coefficient in the logarithmic model for physical abuse is significant at the 10%-level. However, one can safely assume that this significance will drop once the first four weeks are dropped. For Eastern regions, the coefficient for mixed abuse is significant in both models at the 5%-level, and shows a negative sign. However, Table 15 in Appendix C shows the result for Eastern regions after dropping the first four weeks, and the coefficients for

mixed abuse all become insignificant. There seem to be no significant effects of the lockdown on different types of IPV for either the Northern, Southern, Eastern or Western part of the country.

Next, regions with more inhabitants were compared with regions with fewer inhabitants. Data from CBS (2020) about the adult population for each region was used. Regions with more than 500.000 inhabitants were classified as large. Those were Utrecht, Midden-Brabant, Haaglanden, Amsterdam Amstelland, Hollands midden, Zuidoost Brabant and Brabant Noordoost. Regions with less than 500.000 inhabitants were classified as small. Those were Kennemerland, Noord- en Midden-Limburg, IJsselland, Zuid-Holland Zuid, Flevoland, Zeeland, Zaanstreek Waterland, Gooi- en Vechtstreek. Regression results for large regions can be found in Table 16 in Appendix D; results for small regions can be found in Table 17 in Appendix D. For the small regions, the coefficient for every type of IPV in both the absolute as the logarithmic model are insignificant. For large regions, mixed abuse and emotional abuse both show negative significant coefficients on the 1%-level in the logarithmic model. Furthermore, for physical abuse, the coefficient in the logarithmic model is significant and negative on the 10%-level. Also in the absolute model, there is evidence to be found for a decline in the different types of IPV as a result of the lockdown. To determine to which extent this effect was driven be the inadequacy of reporting in the first four weeks, the first four weeks were excluded. Those results can be found in Table 18 in Appendix D. After dropping the first four weeks, the significance is no longer present. The significance found in Table 16 is driven by the inadequate reporting, and does not reflect an effect of the lockdown.

Lastly, I looked into differences between regions with more and less abuse per inhabitant. In order to do so, the total number of all cases per region was added, and then divided by the number of inhabitants. In relative terms, the regions Haaglanden, Amsterdam Amstelland, Flevoland, Zaanstreek Waterland, Hollands Midden, Utrecht and Brabant Noordoost face higher IPV rates than the regions Zuid-Holland Zuid, Kennemerland, Zeeland, IJsselland, Midden-Brabant, Noord- en Midden-Limburg, Zuidoost Brabant and Gooi- en Vechtstreek. For both groups, regressions were run. Regression results for regions with higher abuse rates can be found in Table 19 in Appendix D; regression results for regions with lower abuse rates can be found in Table 20 in Appendix D. For regions with higher abuse rates, almost no coefficients were found to be significant. For regions with lower abuse rates, there is some evidence that there is a decrease in IPV with mixed abuse. However, as can be seen in Table 21 in Appendix D, dropping the first four weeks results in insignificant coefficients. With all robustness checks being insignificant, this shows that there is no differentiated effect of the first lockdown on IPV in the Netherlands.

7. Conclusion

The first lockdown in the Netherlands that was subsequent to the outbreak of COVID-19 in early 2020 did not have an effect on the number of cases involving emotional/psychological abuse and physical abuse on their own, as well as cases involving both types of abuse. This finding is in line with Coomans et al. (2022), who find no effect on aggregate on domestic abuse as part of the lockdowns. Robustness checks aimed at finding differences in effects across different regions in the Netherlands were all insignificant as well, with no effect being found for either of the distinct subsamples as described in the previous section.

However, finding a non-significant result is also a contribution to the scientific and public field, especially in this context. It is important to understand how COVID-19 and the subsequent lockdowns affected IPV, and the nature of IPV. If a certain type of intimate partner violence had increased, the policy response of the government should have adapted to tackle the issue appropriately. Vice versa, if no singular type had increased, this would mean that the necessity for a different policy response is lower. Considering the finding that no singular type of IPV increased or decreased in the Netherlands, alongside the insignificant findings of Coomans et al. (2022), I would argue that there is no indication that the policy response of the government and *Veilig Thuis* should necessarily adapt. A key remark here is that this finding is solely based on the first lockdown, and for intimate partner violence only. The results found in this thesis can not be extended to lockdowns that happened later on, or other forms of domestic violence such as child abuse or elderly abuse. Since sentiments were different across the different lockdowns, as is proven by Tanaka and Okamoto (2021), effects of other lockdowns might differ as well. Moreover, severity of intimate partner violence might have increased, while the number of cases remained stable, as was found in their contexts by Fawole et al. (2021) and Sanz-Barbero et al. (2023). If this is also the case in the Netherlands, a different policy response is desired, but since this is beyond the scope of this thesis, remarks about the severity can not be made.

These results also cannot be extended to different countries without looking at the context in those countries. Lockdown measures differed across countries, and so do domestic violence and IPV trends. Reporting agencies might be more or less easily available, especially during the lockdown. If one were to extend the results of this thesis to the global scale, it is simply a piece of the puzzle in understanding the effects of the lockdown on domestic abuse and IPV, rather than a building block. For the Netherlands however, this thesis does paint a representative picture about the effects.

There are however a few limitations for the findings presented in this paper. First of all, for the number of physical abuse cases, the common trend assumption is subject to some critique. The commend trends assumption for physical abuse was not perfectly satisfied. However, considering the findings for

other forms of IPV in this paper, it is still safe to assume that there was no increase or decrease in physical abuse cases for IPV as well. Second, this thesis only looks at the extensive margin. Since *Veilig Thuis* considers every report on a household to be one and the same case, multiple instances of intimate partner violence in one household are registered as a single case. Only reports about households that have not experienced earlier domestic violence are seen as new cases, which means that these results do not take into account that IPV could have become more prevalent in households that were already experiencing IPV. However, analysis on the number of reports shows that there is no significant change during the lockdown, implying that an increase prevalence in such households is not to be expected. Lastly, there might be underreporting during the lockdown. It is well-established in the literature that not all cases of domestic abuse/IPV are reported to the police or official agencies by victims. If this amount of underreporting was the same during the lockdown as in the year before, this does not affect the results. However, considering the fact that people that lived together spent much more time at home during the lockdown as a result of school closings, working remotely and leisure activities being shut down, victims of IPV might have been more scared to report the abuse, which would lead to more underreporting during the lockdown. If this is the case, the coefficients are underestimated in this paper and there might be more IPV during the lockdown. So far, there is no evidence for the argument that underreporting was a larger concern during the lockdown, but it is important to be aware of such claims and the effects it would have on the findings in the paper.

To construct a more elaborate picture of the lockdowns and how they affected the types of IPV in the Netherlands, further research should focus on the second and third lockdown. The first lockdown was unique, in the sense that people did not see it coming, and was for some met with positive responses, as average working hours dropped and schools shut down, leading to more spare time. However, when it became clear that the lockdown was there to stay for a longer period of time, the sentiment changed and people became more pessimistic about the measures. It is most likely the reason why Tanaka and Okamoto (2021) find that the suicide rates in Japan declined during the first lockdown, but increased in the second lockdown, when it became clear that the lockdown was there to stay for a period of time. Furthermore, a potential increase in underreporting during the lockdown could be looked upon. As mentioned, an increase in underreporting would lead to an underestimation of the effect. Severity of intimate partner violence is also not included in this thesis, but could shed a more elaborate light on IPV during the lockdown. Lastly, a different source could be used for the dependent variable, like police reports or calls. These would not suffer from the problem that multiple instances of IPV in the same household would be labeled as the same cases, but as distinct instances. It is important to get the clearest picture on the effects of the lockdown, in the unfortunate case that one will come by in our lifetime again.

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Appendix

Appendix A: Description of the regions

Figure 4: *A map of the distinct regions in the Netherlands*

Table 7: *List of regions of Veilig Thuis, divided by whether they reported every case appropriately, including the nature of intimate partner violence*

Did report appropriately	Did not report appropriately
Flevoland	Noord Holland Noord
Haaglanden	Friesland
Kennemerland	Zuid Limburg
Gooi- en Vechtstreek	Rotterdam Rijnmond
Zeeland	Drenthe
Brabant Noordoost	Groningen
Noord- en Midden-Limburg	Twente
Hollands-Midden	Gelderland
Utrecht	Noord Oost Gelderland
Midden-Brabant	Gelderland Zuid
Amsterdam Amstelland	West Brabant
Zaanstreek Waterland	
Zuidoost Brabant	
IJsselland	
Zuid Holland Zuid	

Note: *Regions that did report appropriately are included in this thesis. Regions that did not report appropriately are excluded.*

Appendix B: Validity checks for the main results

Table 8*: Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV, after excluding regions with inadequate reporting*

	Absolute dependent variable	Logarithmic dependent variable
Outcome: Emotional abuse		
Lockdown	1.157**	0.082
	(0.539)	(0.064)
Year2020	2.639***	0.231***
	(0.497)	(0.057)
Lockdown#Year2020	-0.241	-0.018
	(0.736)	(0.086)
Constant	6.718***	2.038***
	(0.645)	(0.067)
Mean dep. var.	8.005	1.888
R-Squared	0.7610	0.6957
Outcome: Physical abuse		
Lockdown	0.528	0.090
	(0.393)	(0.071)
Year2020	-0.861**	-0.096
	(0.356)	(0.070)
Lockdown#Year2020	-0.352	-0.085
	(0.500)	(0.098)
Constant	4.255***	1.554***
	(0.384)	(0.080)
Mean dep. var.	4.542	1.546
R-Squared	4.255***	0.3217
Outcome: Mixed abuse		
Lockdown	0.963**	0.095
	(0.408)	(0.067)
Year2020	2.185***	0.252***
	(0.417)	(0.065)
Lockdown#Year2020	-0.843	-0.096
	(0.596)	(0.090)
Constant	5.137***	1.772***
	(0.562)	(0.087)
Mean dep. var.	6.567	1.698
R-Squared	0.8075	0.6696
Number of obs.	432	432
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset. Zuidoost-Brabant, Amsterdam Amstelland and Gooi-en Vechtstreek were dropped from the analysis.

Table 9: *Difference-in-difference estimates for the effect of the lockdown measures on IPV reports for each type of IPV, distinguished between professional and non-professional reporters*

	Professional	Non-professional
Outcome: Emotional abuse		
Lockdown	6.321**	0.464
	(2.858)	(0.428)
Year2020	14.560***	1.907***
	(2.873)	(0.541)
Lockdown#Year2020	-3.249	-0.499
	(3.599)	(0.716)
Constant	33.272***	2.266**
	(3.744)	(0.897)
Mean dep. var.	35.593	2.598
R-Squared	0.8078	0.1618
Outcome: Physical abuse		
Lockdown	0.321	-0.193
	(1.693)	(0.247)
Year2020	0.547	-0.093
	(1.950)	(0.298)
Lockdown#Year2020	-2.176	0.308
	(2.354)	(0.361)
Constant	18.898***	0.357
	(1.834)	(0.286)
Mean dep. var.	19.807	0.728
R-Squared	0.6638	0.0734
Outcome: Mixed abuse		
Lockdown	3.400	-0.199
	(2.252)	(0.401)
Year2020	11.173***	-0.093
	(2.465)	(0.453)
Lockdown#Year2020	-3.759	1.182**
	(3.047)	(0.589)
Constant	22.043***	2.259***
	(3.013)	(0.630)
Mean dep. var.	25.498	2.086
R-Squared	0.7872	0.1366
Number of obs.	420	420
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the results for professional reporters are listed, while in column 2, the results for non-professional reporters are listed. The first four weeks of the year were dropped due to inadequate reporting.

Table 10*: Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV, with the cutoff-point of the lockdown being week 11*

	All observations	Exclusion of first weeks
Outcome: Emotional abuse		
Lockdown	1.407**	1.026**
	(0.514)	(0.518)
Year2020	3.178***	2.449***
	(0.489)	(0.510)
Interaction-variable for robustness check	-0.317	0.339
	(0.653)	(0.645)
Constant	6.333***	6.805***
	(0.660)	(0.795)
Mean dep. var.	8.437	8.650
R-Squared	0.7622	0.8064
Outcome: Physical abuse		
Lockdown	0.916*	0.170
	(0.370)	(0.372)
Year2020	0.079	-0.541
	(0.359)	(0.366)
Interaction-variable for robustness check	-0.686	-0.128
	(0.457)	(0.446)
Constant	3.655***	4.233***
	(0.400)	(0.442)
Mean dep. var.	5.061	5.326
R-Squared	0.5596	0.6756
Outcome: Mixed abuse		
Lockdown	1.175*	0.853**
	(0.354)	(0.385)
Year2020	2.360***	1.867***
	(0.354)	(0.404)
Interaction-variable for robustness check	-1.061**	-0.617
	(0.508)	(0.534)
Constant	4.968***	5.194***
	(0.557)	(0.602)
Mean dep. var.	6.374	6.519
R-Squared	0.7885	0.8100
Number of obs.	540	420
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, all weeks were included, whereas in column 2, the first four weeks were dropped due to inadequate reporting.

Appendix C: Results for geographically distinct regions

Table 11*: Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for the Northern regions.*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	1.944*	0.228*
	(1.122)	(0.135)
Year2020	3.111***	0.339**
	(1.078)	(0.130)
Lockdown#Year2020	-1.019	-0.090
	(1.318)	(0.160)
Constant	6.282***	1.929***
	(0.933)	(0.108)
Mean dep. var.	7.606	1.676
R-Squared	0.7473	0.6441
Outcome: Physical abuse		
Lockdown	1.944**	0.304**
	(0.758)	(0.128)
Year2020	1.593**	0.251**
	(0.747)	(0.127)
Lockdown#Year2020	-1.463	-0.268*
	(0.924)	(0.162)
Constant	2.597***	1.320***
	(0.625)	(0.113)
Mean dep. var.	5.273	1.545
R-Squared	0.6981	0.5433
Outcome: Mixed abuse		
Lockdown	0.852	0.265**
	(0.637)	(0.127)
Year2020	1.685***	0.474***
	(0.621)	(0.125)
Lockdown#Year2020	-0.148	-0.164
	(0.826)	(0.154)
Constant	5.269***	1.593***
	(0.644)	(0.118)
Mean dep. var.	5.102	1.644
R-Squared	0.6111	0.5244
Number of obs.	216	216
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset

Table 12: *Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for the Southern regions.*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	0.9444**	0.208*
	(0.412)	(0.108)
Year2020	1.815***	0.388***
	(0.388)	(0.101)
Lockdown#Year2020	-0.907	-0.223
	(0.5913)	(0.138)
Constant	1.431***	0.884***
	(0.434)	(0.122)
Mean dep. var.	4.468	1.533
R-Squared	0.4429	0.3760
Outcome: Physical abuse		
Lockdown	-0.426	0.010
	(0.491)	(0.116)
Year2020	-0.111	0.105
	(0.531)	(0.118)
Lockdown#Year2020	0.019	-0.126
	(0.696)	(0.156)
Constant	3.458	1.292
Mean dep. var.	3.847	1.412
R-Squared	0.1666	0.1433
Outcome: Mixed abuse		
Lockdown	0.389	0.160
	(0.367)	(0.110)
Year2020	0.870**	0.269**
	(0.390)	(0.110)
Lockdown#Year2020	-0.593	-0.192
	(0.532)	(0.147)
Constant	1.269***	0.692***
	(0.368)	(0.129)
Mean dep. var.	3.185	1.271
R-Squared	0.2458	0.2366
Number of obs.	216	216
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset

Table 13: *Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for Eastern regions*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	0.944*	0.120
	(0.492)	(0.084)
Year2020	2.486***	0.389***
	(0.421)	(0.078)
Lockdown#Year2020	-0.125	-0.057
	(0.734)	(0.107)
Constant	6.872***	1.949***
	(0.612)	(0.078)
Mean dep. var.	6.545	1.706
R-Squared	0.7583	0.7137
Outcome: Physical abuse		
Lockdown	0.431	0.095
	(0.428)	(0.096)
Year2020	0.417	0.209**
	(0.428)	(0.094)
Lockdown#Year2020	-0.528	-0.176
	(0.584)	(0.129)
Constant	3.708***	1.422***
	(0.409)	(0.094)
Mean dep. var.	4.181	1.434
R-Squared	0.4012	0.4074
Outcome: Mixed abuse		
Lockdown	0.736*	0.219**
	(0.375)	(0.086)
Year2020	2.000***	0.470***
	(0.394)	(0.086)
Lockdown#Year2020	-1.167**	-0.260**
	(0.559)	(0.117)
Constant	5.424***	1.642***
	(0.543)	(0.097)
Mean dep. var.	4.813	1.511
R-Squared	0.6732	0.5725
Number of obs.	288	288
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset

Table 14: *Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for the Western regions*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	2.794**	0.317 **
	(1.152)	(0.122)
Year2020	4.825***	0.386***
	(1.109)	(0.116)
Lockdown#Year2020	-2.175	-0.259*
	(1.376)	(0.145)
Constant	20.401***	2.837***
	(1.592)	(0.106)
Mean dep. var.	10.599	2.015
R-Squared	0.7508	0.6573
Outcome: Physical abuse		
Lockdown	1.746**	0.284**
	(0.785)	(0.116)
Year2020	-0.032	-0.039
	(0.754)	(0.120)
Lockdown#Year2020	-1.254	-0.217
	(0.948)	(0.146)
Constant	6.901***	1.922***
	(0.981)	(0.137)
Mean dep. var.	6.067	1.672
R-Squared	0.5954	0.4388
Outcome: Mixed abuse		
Lockdown	1.825**	0.209*
	(0.720)	(0.111)
Year2020	2.921***	0.302***
	(0.707)	(0.108)
Lockdown#Year2020	-0.984	-0.139
	(0.974)	(0.135)
Constant	22.435***	2.972***
	(1.238)	(0.086)
Mean dep. var.	8.159	1.796
R-Squared	0.8051	0.6905
Number of obs.	252	252
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset

Table 15*: Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for mixed abuse for the Eastern regions after the exclusion of the first 4 weeks*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Mixed abuse		
Lockdown	1.600***	0.349***
	(0.503)	(0.104)
Year2020	0.597	0.115
	(0.432)	(0.093)
Lockdown#Year2020	-0.767	-0.139
	(0.640)	(0.129)
Constant	5.563***	1.733***
	(0.593)	(0.100)
Mean dep. var.	4.813	1.539
R-Squared	0.6701	0.5671
Number of obs.	224	224
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset. The first 4 weeks were dropped as a result of inadequate reporting.

Appendix D: Regression results for robustness checks on inhabitants and relative abuse rates

Table 16: *Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for large regions.*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	3.571***	0.442***
	(1.159)	(0.115)
Year2020	7.047***	0.696***
	(1.078)	(0.109)
Lockdown#Year2020	-2.683*	-0.405***
	(1.416)	(0.127)
Constant	19.028***	2.656***
	(1.511)	(0.103)
Mean dep. var.	13.845	2.426
R-Squared	0.7040	0.6242
Outcome: Physical abuse		
Lockdown	1.794**	0.320***
	(0.850)	(0.122)
Year2020	0.143	0.095
	(0.822)	(0.125)
Lockdown#Year2020	-1.143	-0.281*
	(1.033)	(0.150)
Constant	6.762***	1.854***
	(1.013)	(0.142)
Mean dep. var.	7.349	1.890
R-Squared	0.4875	0.3085
Outcome: Mixed abuse		
Lockdown	2.508***	0.335***
	(0.738)	(0.104)
Year2020	4.460***	0.544***
	(0.713)	(0.010)
Lockdown#Year2020	-2.841***	-0.438***
	(1.011)	(0.124)
Constant	21.698***	2.863***
	(1.113)	(0.081)
Mean dep. var.	10.044	2.111
R-Squared	0.7659	0.6524
Number of obs.	252	252
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset.

Table 17: *Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for the small regions*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	0.264	0.011
	(0.354)	(0.086)
Year2020	0.542*	0.118
	(0.311)	(0.078)
Lockdown#Year2020	0.319	0.071
	(0.522)	(0.118)
Constant	8.073***	2.108***
	(0.601)	(0.074)
Mean dep. var.	3.705	1.346
R-Squared	0.4912	0.4455
Outcome: Physical abuse		
Lockdown	0.389	0.064
	(0.323)	(0.091)
Year2020	0.264	0.092
	(0.316)	(0.090)
Lockdown#Year2020	-0.625	-0.120
	(0.462)	(0.127)
Constant	3.830***	1.482***
	(0.358)	(0.087)
Mean dep. var.	3.060	1.235
R-Squared	0.2244	0.2615
Outcome: Mixed abuse		
Lockdown	0.139	0.109
	(0.306)	(0.092)
Year2020	0.653**	0.259***
	(0.324)	(0.092)
Lockdown#Year2020	0.458	0.001
	(0.469)	(0.125)
Constant	5.990***	1.738***
	(0.520)	(0.096)
Mean dep. var.	3.163	1.235
R-Squared	0.4008	0.3650
Number of obs.	252	288
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset.

Table 18*: Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for large regions after excluding the first four weeks*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	2.778**	0.233**
	(1.170)	(0.094)
Year2020	6.057***	0.456***
	(1.219)	(0.091)
Lockdown#Year2020	-1.692	-0.165
	(1.526)	(0.109)
Constant	19.444***	2.793***
	(1.755)	(0.105)
Mean dep. var.	14.270	2.492
R-Squared	0.7584	0.7539
Outcome: Physical abuse		
Lockdown	0.117	-0.014
	(0.864)	(0.090)
Year2020	-1.143	-0.145
	(0.877)	(0.099)
Lockdown#Year2020	0.143	-0.041
	(1.069)	(0.128)
Constant	8.664***	2.202***
	(1.150)	(0.110)
Mean dep. var.	7.893	2.002
R-Squared	0.6271	0.5115
Outcome: Mixed abuse		
Lockdown	1.863**	0.142*
	(0.827)	(0.077)
Year2020	3.343***	0.319***
	(0.880)	(0.084)
Lockdown#Year2020	-1.724	-0.212*
	(1.132)	(0.110)
Constant	22.470***	3.026***
	(1.474)	(0.076)
Mean dep. var.	10.230	2.156
R-Squared	0.7844	0.7554
Number of obs.	196	196
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset. The first 4 weeks were dropped as a result of inadequate reporting.

Table 19*16: Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for regions with higher rates of abuse.*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	3.079**	0.292***
	(1.186)	(0.112)
Year2020	6.286***	0.497***
	(1.111)	(0.105)
Lockdown#Year2020	-1.603	-0.196
	(1.460)	(0.127)
Constant	4.274***	1.844***
	(1.005)	(0.098)
Mean dep. var.	14.044	2.458
R-Squared	0.6807	0.5789
Outcome: Physical abuse		
Lockdown	2.302***	0.366***
	(0.789)	(0.110)
Year2020	0.238	0.009
	(0.757)	(0.115)
Lockdown#Year2020	-1.397	-0.238*
	(0.951)	(0.139)
Constant	3.079***	1.403***
	(0.618)	(0.105)
Mean dep. var.	6.794	1.804
R-Squared	0.5796	0.4498
Outcome: Mixed abuse		
Lockdown	2.111***	0.217**
	(0.766)	(0.102)
Year2020	3.571***	0.309***
	(0.756)	(0.101)
Lockdown#Year2020	-1.429	-0.126
	(1.054)	(0.121)
Constant	4.016***	1.690***
	(0.735)	(0.105)
Mean dep. var.	10.579	2.220
R-Squared	0.7244	0.5647
Number of obs.	252	252
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset.

Table 20*: Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for each type of IPV for regions with lower abuse rates.*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Emotional abuse		
Lockdown	0.694**	0.142
	(0.328)	(0.094)
Year2020	1.208***	0.291***
	(0.311)	(0.088)
Lockdown#Year2020	-0.625	-0.112
	(0.462)	(0.123)
Constant	2.566***	1.174***
	(0.333)	(0.093)
Mean dep. var.	3.531	1.318
R-Squared	0.4695	0.3994
Outcome: Physical abuse		
Lockdown	-0.056	0.024
	(0.410)	(0.100)
Year2020	0.181	0.168*
	(0.415)	(0.098)
Lockdown#Year2020	-0.403	-0.157
	(0.566)	(0.134)
Constant	4.816***	1.641***
	(0.402)	(0.084)
Mean dep. var.	3.545	1.318
R-Squared	0.2569	0.2931
Outcome: Mixed abuse		
Lockdown	0.486*	0.211**
	(0.275)	(0.094)
Year2020	1.431***	0.465***
	(0.293)	(0.092)
Lockdown#Year2020	-0.778*	-0.272**
	(0.414)	(0.128)
Constant	1.819***	0.860***
	(0.312)	(0.108)
Mean dep. var.	2.694	1.140
R-Squared	0.2407	0.2518
Number of obs.	288	288
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset.

Table 21: *Difference-in-difference estimates for the effect of the lockdown measures on the number of cases for mixed abuse for the lower abuse regions after the exclusion of the first 4 weeks*

	Absolute dependent variable	Logaritmic dependent variable
Outcome: Mixed abuse		
Lockdown	0.392	0.125
	(0.304)	(0.108)
Year2020	1.350***	0.426***
	(0.353)	(0.113)
Lockdown#Year2020	-0.697	-0.233
	(0.455)	(0.143)
Constant	1.869***	0.907***
	(0.366)	(0.132)
Mean dep. var.	2.728	1.175
R-Squared	0.1985	0.2183
Number of obs.	224	224
Fixed effects	Yes	Yes

Note: This table shows all coefficients for the independent variables in the model. Robust standard errors are denoted in brackets below the coefficients. Asterisks denote significance; 3 asterisks denotes significance at the 1%-level, 2 asterisks denote significance at the 5%-level and 1 asterisk denotes significance at the 10%-level. In column 1, the dependent variable was taken in absolute terms, whereas the natural logarithm was taken as the dependent variable in column 2. In order to do so, one was added to all observations in the dataset. The first 4 weeks were dropped as a result of inadequate reporting.