# A study on the Gender-based violence in the time of Covid-19: calls to the 1522 helpline and the possible determinants of their increase during the Pandemic

## Abstract

*This Paper discusses the effects that Covid-19 has had on domestic violence towards women. The analysis is carried out in two main steps: the first one is centred around the search for a relationship between unemployment, its control variables, some possible determinants of violence and the calls made by victims to 1522[1].*
*The second part of the project is focused more on the dynamics between the number of Covid-19 cases per day and the number of calls by the victims.*
*Although some results have been significant, others on the contrary have shown the need for further research to understand the real reasons for an increase in calls to 1522 and also the dynamics of Covid-19 which, having been very sudden and overwhelming, can be unclear.*

## INTRODUCTION AND RESEARCH QUESTION

The pandemic has certainly been one of the most unexpected events of recent decades.
It highlighted several shortcomings in today's society, putting not only the health system in difficulty, but also many other sectors, leaving many workers in precarious economic conditions. Due to the mortality rate and the inability of the healthcare system to react in an efficient way in such a short time, the most natural decision was to prevent the spread of the Covid-19 by forcing ourselves at home for a considerable period of time, at the mercy of the uncertainty and fear that one might have at the beginning, when little was known about this virus and the news was broadcasting harrowing images.
In this climate of uncertainty, tension and fear, one wonders how those people who are not happy at home, because they are victims of violence, have gone through it.
The aim of this research is to clarify this aspect: to understand if Covid-19 has in any way influenced domestic and gender-based violence, to understand what may be the determining causes of these crimes.
We will use regional data collected from the beginning of 2018 to the end of 2020 for the first part of the analysis, which focuses on the interactions among the victims' calls to 1522, the unemployment, its main control variables (such as interest rate, harmonised index of consumer prices and inflation) and some of the indexes which could influence a more likely violent environment. As regards the second part the main aim is to look carefully through a linear regression at the relationship among ICU Covid-19 patients, the number of certified Covid-19 cases per day and the daily number of calls from the victims of abuse, so the period under analysis is restricted from the beginning of the Covid-19 outbreak (31 January 2020) to the end of march 2021.

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[1] 1522: toll-free helpline for gender-based violence and stalking. All helpline operators are women. They can be contacted by phone calls or by using the 1522 mobile app for messages and chat.

## PREVIOUS LITERATURE

Although it has not been possible to find many studies regarding gender-based violence during the pandemic, given the scarcity and time required to process data and conduct studies, the data that were used in this research comes from a study conducted by the istat (www.istat.it). This reference study is called "Gender-based violence in the time of Covid-19".
In fact this article has reported that, during the lockdown there were 5,031 valid calls to 1522, +73% over the same period in 2019. A total of 2,013 victims asked for help (+59%). Among the victims, 40% of callers were women in 97% of cases of different age groups and mostly married, a sign that calls for help arose from some kind of intimate partner violence. Based on what victims told the 1522 operators, it emerged that most of them did not report to the Police the violence they suffered because it mostly occurred within the family. The reasons for not filing a report included the negative consequences that could arise within the family: general fear, fear of the offender's reaction, uncertainty about the future, lack of trust in the police forces or these latter advising against reporting. Among the survivors, 2.8% withdrew the report and more than one in three (40.4%) returned to the abuser.
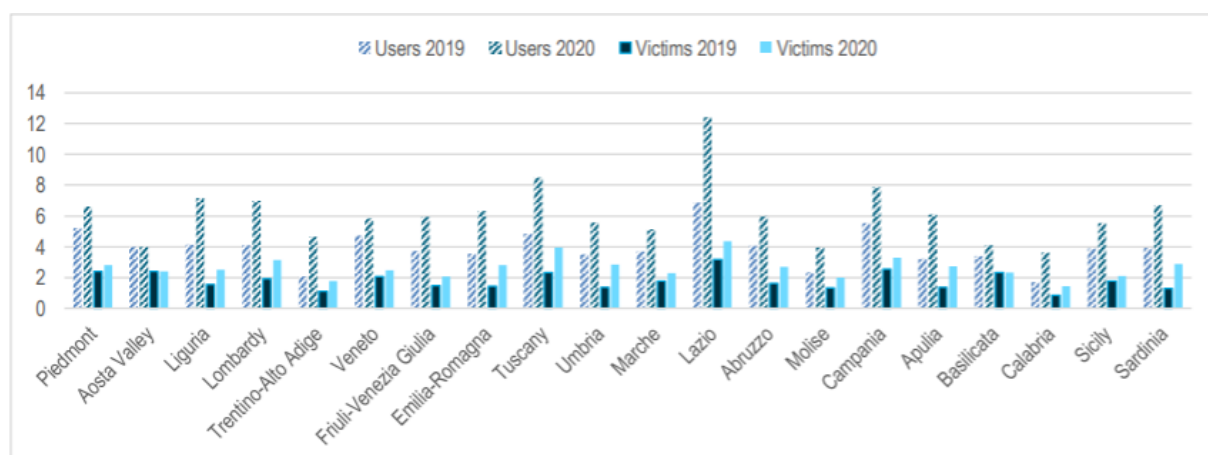


*Image 1: Distribution of users and victims divided by regions.*
*(Reference period 1 March-16 April 2019-2020, rates of usage per 100,000 residents, absolute values)*

However, reports received by the Police forces between 1 and 22 March 2020 for maltreatments, injuries and battery dropped compared to the same period in 2019.

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## METHODS

The objective of this research is to analyse and try to understand in which way Covid-19 has influenced the Gender-based violence using two different approaches:

### 1. Quarterly Regional 1522 calls, the unemployment level, Covid-19 and other indexes

Focusing on gender-based violence, and more particularly on domestic violence, one wonders what are the causes of these phenomena, and whether it is possible to verify their effective correlation through data research. Domestic violence, as all the other crimes accomplished by human beings cannot have a single cause, but rather it has many linked causes, often very personal and difficult to analyse objectively due to the lack of usable data on the subject.
In fact, the most well-known causes of domestic violence are: the inability to accept disappointments, failures, and to properly manage conflicts and emotions, being influenced by a patriarchal culture. Also, a low level of education, having suffered violence as a child, having witnessed scenes of family violence, alcohol abuse, accepting violence as a cultural fact, gender inequality can all be considered as potential determinants of violent behaviours.
Therefore, the research has been based on a quarterly analysis of the relationship between the ICU hospitalisations, unemployment and the 1522's calls through a Fixed effect analysis[2] using Panel data: fixed-effects models are designed to study the causes of changes within an entity, in this case we take into account the quarterly data for each Italian region.
Therefore, the first regression focuses on the "primary" possible determinants of violence: the poverty index and the level of education, two determining causes of a higher level of crime; the level of satisfaction with life in general, given that personal dissatisfaction and frustration are also components that predispose to violence; and finally the number of patients in intensive care, given that the pandemic, especially in 2020, has put a strain on the sanity of many, being housebound and subjected to great stress, not only psychologically but also financially. On top of that, the number of ICU patients also indicates, as the government relied on this data, lockdown periods. Finally, unemployment among family members is used to show the percentage of families without occupied people. Sexual abuse was also included, to determine if there was any correlation between that particular crime and the calls for help to 1522.
In the subsequent regressions two variables are analysed separately: inflation and interest rate. Ultimately, a last regression is run combining all these variables together
These two variables can be defined as broad causes if we want, of a climate favourable to violence because, in general an increase in these variables usually signals an overall impoverishment. In fact, as inflation increases, the purchasing power of the currency decreases, and as interest increases, prices increase.

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[2] The Fixed effect estimation explores the relationship between predictor and outcome variables within a region. Each region has its own individual characteristics that may or may not influence the predictor variables.Unlike dealing with the linear regression, when we use FE we assume that something within the individual may impact or bias the predictor or outcome variables and we need to control for this.

| Variable | Frequency and geographical origin | Assumption made to use the data |
|---|---|---|
| Victims' Calls | Quarterly, regional data | |
| Poverty Index | Annual, regional data | The data are equal for each quarter |
| Intensive Care Patients | Daily, regional data | Averaging between two days of the month (the 15th and the last day of each month) and using this monthly data to make an additional average between months to get a quarterly figure |
| Un_Families | Annual, regional data | The data are equal for each quarter |
| Inflation | Quarterly, national data | The data are equal for each region |
| Interest rate | Quarterly, national data | The data are equal for each region |
| Instruction Level | Annual, regional data | The data are equal for each quarter |
| Average Satisfaction level | Annual, regional data | The data are equal for each quarter |
| Beatings (subsequently excluded from the analysis because it was too much correlated with Sexual violence's cases) | Annual, regional data | The data are equal for each quarter |
| Sexual violence | Annual, regional data | The data are equal for each quarter |

*Table 1: Variables' frequencies, geographical specification and assumptions made to use them in the research.*

## 2. National 1522 daily calls and the Covid-19

A national focus on the 2020 up to the first months of 2021 to capture the interrelationship between the Covid's ICU hospitalisation and the 1522 victims' calls using a linear regression through the OLS method.

This is done by running a simple regression, and not anymore a fixed effect regression since the subject now is Italy as a whole and therefore does not have to take into account multiple regions across the time horizon.

| Variable | Frequency and geographical origin | Assumption made to use the data |
|---|---|---|
| Calls per date | Daily, national data | |
| ICU Covid patients | Daily, national data | |
| Total Cases | Cumulated Covid-19 cases since the 31$^{st}$ January | Used in the graph for giving a better idea of the relationship among the two main variables |
| New Covid Cases | Daily, national data | |
| Cumulated calls | Cumulated 1522's calls cases since the 31$^{st}$ January | Used in the graph for giving a better idea of the relationship among the two main variables |

*Table 2: Variables' frequencies, geographical specification and assumptions made to use them in the research.*

After having imported the Excel file, we regress the 1522's number of calls per day against the daily number of Covid cases and the daily number of patients recovered in intensive care due to Covid-19.

## RESULTS

### 1. Quarterly Regional 1522 calls, the unemployment level, Covid-19 and other indexes

In this first table, we can see the coefficients and the associated p-value of every variable that resulted to be statistically significant in the regressions, therefore displaying a P-value lower than 0.05.

| Coefficient of statistically significant statistics | Un_Families | Average_Intensive_ Care_Patients | Sexual_violence | Average_S atisfaction _Level | Interest_R ate | Inflation |
|---|---|---|---|---|---|---|
| Regression n°1 | 1.346515 ([3]0.036) | .3404439 (0.000) | -.4756777 ( 0.004 ) | - | #[4] | # |
| Regression n°2 | -[5] | .3379283 ( 0.000) | -.3798313 (0.023) | - | # | -18.68514 (0.021 ) |
| Regression n°3 | 1.440825 (0.024) | .3580341 (0.000) | -.5212742 (0.002 ) | # | 10.55244 (0.038) | # |
| Regression n°4 | .4497388 (0.000) | .5241816 (0.000) | .1615982 (0.008) | -70.42549 (0.039) | 72.07879 (0.000) | -112.8772 (0.000) |

*Table 3: Coefficients displayed for every statistically significant variable*

The first regression run is a fixed effect regression containing what we consider as the "primary" causes of domestic violence: the level of unemployment, the number of intensive care patients, the level of poverty, the instruction level, the average satisfaction in life and the number of sexual violence's cases. The results show, as expected, that there is a positive relationship with the calls to 1522 and the level of unemployment across family members, as well as the intensive care patients (due to Covid-19). As regards the cases of sexual violence, it gives a ambigous negative relationship with the 1522's calls, that appears to be counterintuitive.

Then, we proceed to analyse separately the effect of more broad possible variables on domestic violence. Firstable, we took into account inflation: we would expect a positive relationship, since usually inflation is associated with an increase in the prices, therefore making life more expensive. We have obtained the opposite result: it is negatively correlated with the victims' calls. The opposite is for the interest rate, which displays a positive relationship with 1522's calls.

Ultimately, we proceed to perform a regression containing all the variables together:

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[3] *(): Associated P-value*
[4] *#: variables were not included in that regression*
[5] *-: statistically insignificant variables*

All the relationships are kept the same, except for sexual violence, which turns out to have a positive relationship with the 1522's calls and the average satisfaction level becomes statistically significant and negatively correlated, as we would expect.

Therefore the instruction level and the poverty index do not show any kind of relevant relationship with 1522's calls.
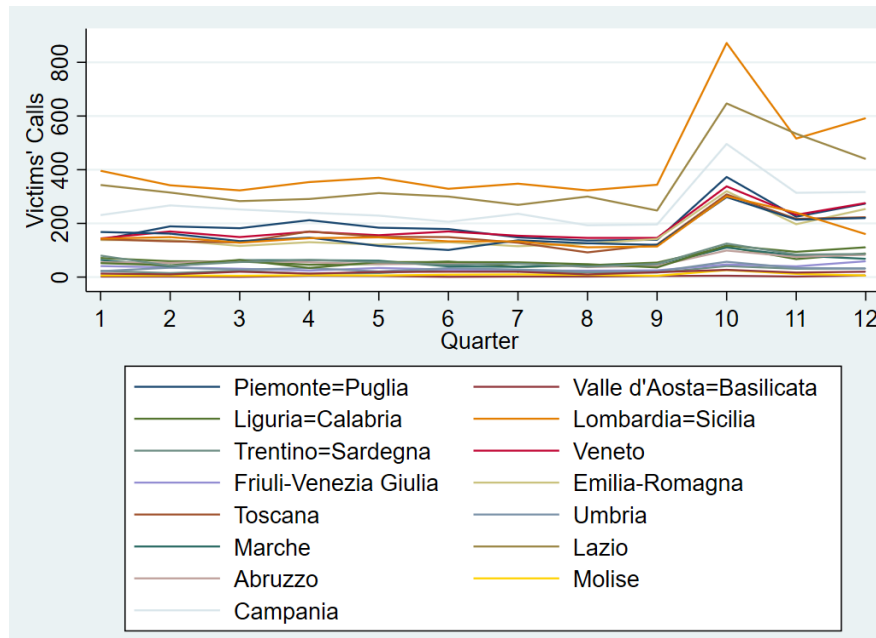


*Image 2: 1522's quarterly calls per Region*

In the graph above, we report the graph of the victims' calls, to give a visual idea of how much the calls have increased during Covid-19 (1 is the first quarter of 2018 and 12 is the last quarter of 2020). The peak has been reached around march 2020, which coincides precisely with the lockdown period, and it has diminished during the summer (in which the population was not restrained at home) and then it has grown again in the fall, in coincidence with regional lockdowns.
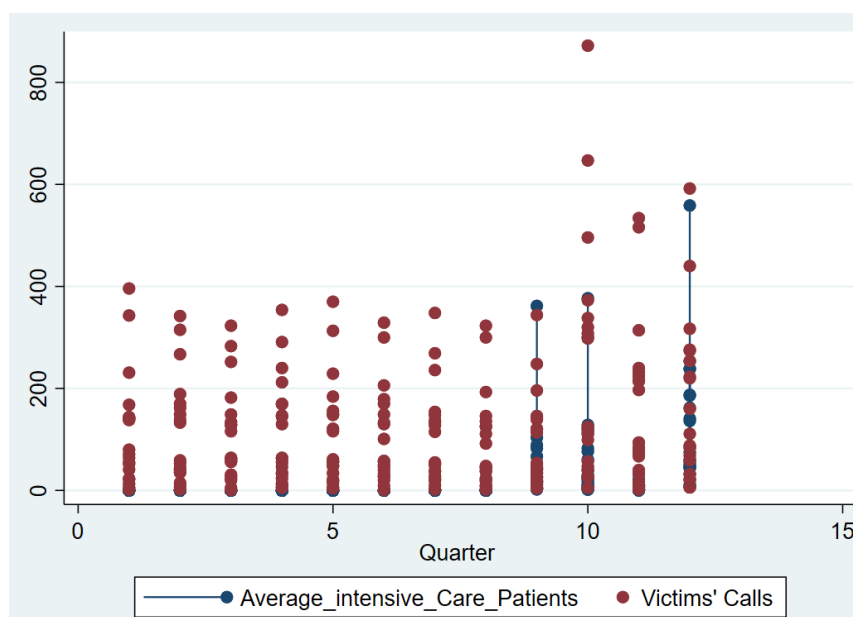


*Image 3: Covid-19 intensive care patients and the 1522's calls*

Furthermore, it is also relevant to show the relationship between the average number of intensive care patients and the quarterly number of calls (keeping in mind that Covid-19 started at the end of the first quarter 2020, therefore previous data did not exist)
It is evident that also here the Covid-19 had an influence on the rate of domestic violence experienced: indeed, the peak of calls coincide precisely with the lockdown period and then it proceed to behave exactly like the intensive care hospitailization's curve, by lowering in the summer and increasing again in the autumn 2020.

**2. National 1522 daily calls and the Covid-19**
The second part of this research shows a simple linear regression among the daily calls to 1522 and the daily new Covid-19 cases and the daily intensive care hospitalisation due to Covid-19.

| Variables' Name | Coefficient | P-Value |
|---|---|---|
| New_Covid_Cases | .0005942 | 0.044 |
| Icu_Covid_Patients | -.0084665 | 0.000 |

The calls to 1522 appear to be positively related to the daily new cases of Covid-19 but negatively related to the ICU hospitalisations due to Covid-19.
Since the last relationship is in contrast also with the previous findings in the first part of the research, we focus more on the first result by displaying the relationship between 1522's daily calls and the Nationally new Covid cases per day.
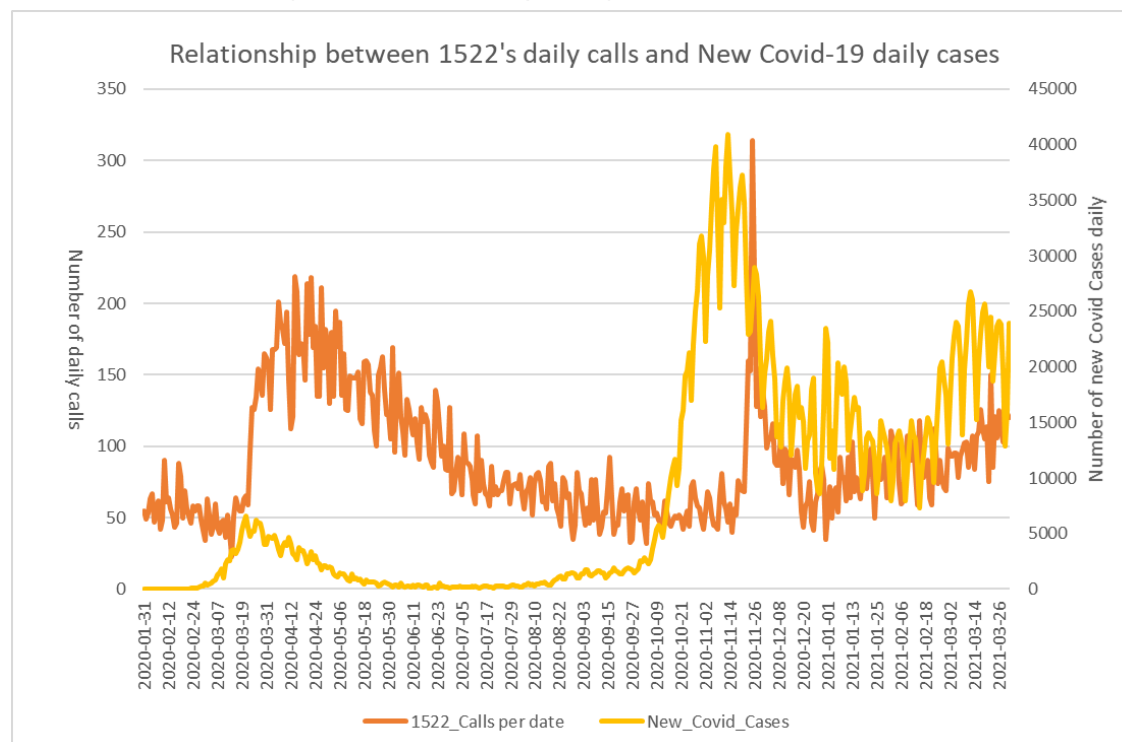


*Image 4: Relationship between 1522's daily calls and New Covid-19 daily cases*

## CONCLUSIONS

As regards the first part of the research, even though the results show that the victims' calls are somewhat related to some of the variables taken into account, not all of them are and also some of them are related in an illogical way to each other. For example, I would have expected a negative relationship between the calls and the level of instruction and a positive relationship between sexual violence cases and  the victims' calls instead the first variable does not show a significant correlation, while the second one is ambiguously negatively correlated at first and then  it  becomes positively correlated in the last regression.

Similarly, the second part of the research shows contrasting signs: the 1522's calls have a positive relationship with the new cases per day but in the meanwhile it has also a negative relationship with the ICU patients hospitalised in that period, which seems to be a counterproductive result.

One of the reasons for which the research shows such ambiguous results can be attributed to the fact that these types of violence, usually related to familiar people and loved ones, as we already mentioned before, are not always reported.

Furthermore, it is true that requests for help registered a marked increase in respect to the pre-Covid period, although it is not possible to determine whether this actually corresponded to a rise in violence against women. This upsurge has certainly been influenced by the intensification of information campaigns on the subject, in that they raised women's awareness of the need to get free from pressing and cogent violence, and strengthened their ability to use tools for seeking help.

Moreover, on one hand it is true that violence should increase if the time spent at home is higher, if we focus just on domestic violence. Therefore, we shall consider other types of violences such as stalking, which has been overall lower since during lockdowns people were not allowed to go outside their homes.

Ultimately, 1522 helpline is one of many ways a woman can ask for help in fact there are several authorities on which it is possible to rely on, some of them are mentioned below:

- ❖ 112
- ❖ App YouPol
- ❖ Emergency room (ER)
- ❖ Map of consultants in Italy
- ❖ Anti-violence centres on the website of the Department of Equal Opportunities
- ❖ AIDS toll-free telephone and IST 800 861061
- ❖ Outpatient Clinic of the National Institute for the Promotion of the Health of Migrant Populations and the Fighting of Poverty Illnesses (INMP)

Therefore, focusing on just one of the main helpline options could have contributed to obtaining results that are not too clear or that have a misleading correlation with the variable of interest, which leaves implications for further research.