

Where are the Victims? Mapping as a Knowledge Tool for Spatial Analysis of Gender Violence in Toluca, State of Mexico, 2009.

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Abstract

In Mexico, gender violence is considered to be a public health and insecurity problem. National statistics indicate that 47% of women over 15 reported to have had at least one incident of violence. To do the study in the municipality of Toluca, which houses the capital of Mexico's most populous state, it was chosen a method based on mapping from official records of violence against women in 2009, correlating them against the demographic variables disaggregated by Municipal Delegations. The result of the study is a compendium of maps of Toluca which contains gender violence facts and rates, which sets the basis for developing new integrated models to do a spatial analysis, contributing to provide a timely response to victims and allowing the targeting of information and awareness campaigns.

Key Words: Gender Violence, Spatial Analysis, Toluca, Mexico.

Introduction

Geographers as spatial analysts and experts understand that the territory is the base of the performance for the majority of human activities which are not only related to environmental elements and factors but also to a great variety of different social issues that are not captured by the spatial scientist's eye, and which have been neglected by researchers who are not interested in Geography. Nevertheless, by the end of the first decade of the XXI century, Geography supported by the geotechnological development can focus its attention on very specific and limited lines to do quantitative analysis of social and economic problems which can be treated according to their attributes to understand their spatial distribution.

Modern geographers face new situations, so they must contribute with a solution by using their knowledge, experience and abilities to build a diagnostic base to support any spatial decision without considering the disciplinary approach (De Castro, 2008). In this scenery, the modern geographer must be competent enough to develop ahead new models of attention that put forward, from a theoretical and methodological point of view, a new useful, innovative, efficient and congruent model with real solution alternatives, which could satisfy the vast majority of the society's urgent needs, specifically, one of the most delicate and ingrained problems: gender violence.

In this research, the technology of the Geographic Information System (GIS) is applied, as it is considered to be an efficient tool due to the results obtained in the first cartographic study. These results gave elements to characterize and analyze the space. Thus, in the future they will be useful for the tracing, control and prevention of violence so as to reduce the social, economic, legal or working consequences.

Delimiting the territory of the application is imperative in any research; so this study is limited to one municipality¹ since this entity and its authority, the government staff, are the nearest platform for the different social sectors and it is the one which receives the requirements and demands of the inhabitants.

Background

According to the violence maps, there is not enough information in the world related to violence. The European countries, particularly, France and England, are the pioneers in the development of these techniques of representation due to the fact that they have cartographic records of violent facts for almost half a century. However, these studies or work were developed to assist violence in general, which came up as a result of the postwar, not for gender violence as in the present research.

In the American Continent, the United States and Brazil were the first to carry out cartographic representations of violence although they had the same situation as the Europeans; their focus was not on gender violence but on violence in general, specifically to represent the homicide and delinquency indexes, priming racist behavior.

Countries like Peru, Uruguay and Colombia have done an important effort to solve problems that arose from political violence. Their studies have centered on the representation of violent events caused by guerrillas and paramilitary groups such as the death squadron and diverse political circumstances which have unchained sharp social reactions.

There have been found some studies and graphic representations of the delinquency and violence, as the only finding in violence modeling, carried out by the Mexican Attorney General (hereinafter PGR) (2002-2004), The Special Commission of Inquiry into the Murder of Women in Mexico (2002-2004) and by the National Commission on Human Rights (2004). All these studies were directed by the federal deputy Marcela Lagarde y de los Ríos from the LIX session of the legislature, Deputy Chamber of the Honorable Congress of the Union, but the data was very poor and lacked of truth so they do not display the authentic reality, according to Notimex, “además de pobres en contenidos, sus datos no son del todo verídicos, por lo que no manifiestan la auténtica realidad” (Notimex, 2004).

A few years ago the graphics of the maps lacked of spatial attributes, the incidence of violent events have been surveyed until recently, especially with the diffusion of the femicide wave in the north of Mexico, particularly in Ciudad Juárez, Chihuahua also known as “the most dangerous city in the world.” This was achieved thanks to the persistence of no-governmental organizations in favor of women’s rights, civil associations and the growing pressure of some foreign governments who have invested in that state. In the past, there was not any state in Mexico that used the GIS exclusively to study or represent the violence in general, not even for the violence against women. However, with Geography reappearance supported by geotechnologies, new applications spring up every day to try to solve the problem from the spatial point of view.

¹ The attention in this sector is preventive concerning security, health as well as family integration; it does not have legal competence but administrative ones, Furthermore, it does not have enough economic resources to manage and solve conflicts like The United States or European countries; however, this sector is the most appropriate.

Violence

To talk about violence is to interpret a social process that has spread quickly in the last few years because of the opening of the freedom of expression and the value of accusation in mass media. Nevertheless, comparing the proportion of the total of the population and the number of violent cases from 50 years to today's total population and the index of violence registered lately, it is possible to state that family violence increase slightly every year, so it is becoming a national public health problem.

Violence is classified as a problem without solution and even when several institutions and government dependences, public or private, have tried to solve, finish it off or prevent it, none of them have succeeded not even controlled its causes and consequences. Violence does not distinguish age, socioeconomic status, instruction, culture, language or religion and is accentuated when some adverse conditions such as poverty, are presented in the people and their families' environment since they cannot access to the necessary ways to fight it.

Domestic violence can be defined as the actions that happen between members of the family affecting one of them because of the other's power or hierarchy given by their culture, gender or the family itself.

Acciones u omisiones que desarrollan entre integrantes de la familia, en la que uno de ellos, utilizando la posición jerárquica y el poder, otorgados por la cultura, el género, y la propia familia, impone sobre otro de los integrantes su voluntad para que éste realice actos que de una u otra forma no serían llevados a cabo, y que le causan un serio daño físico y psíquico. (Álvarez y Guitte, 2006).

These authors cited Fromm who talked about the different types of violence, which can be destructive or non-destructive regarding the level of gravity. The destructive one leaves a trace since it is based on the destructive instincts. As a consequence, it destroys not only the ones who generate it but also others, due to the fact that it generalizes from one generation to another, its conscious or unconscious objective is to destroy. Here it is found the impulsion towards the total absolute control over any being, animal or human.

The violence is the essence of sadism because one person wants to have the absolute domination of another person to make them a disable object and do whenever they wanted. Humiliating and subjugating a person are some of the ways to get that and the most radical purpose is making the person suffer due to the fact that the only way to show domination is by making them stand the suffering without impeding it to happen. Then, living loses its quality, freedom. In this sense, violence, especially the one against women, is a serious humankind problem. It is a multi-generative phenomenon of social problems and high spending for the government because the latter, especially in Latin American countries, feels the obligation of repairing the damage and attending its consequences. However, this could be solved or avoided by putting into practice well planned actions and plans (SEDESOL, 2005; ICESI, 2005).

The vast majority of social and political actors do not recognize that the violence problem in general and what is more violence against women, is a serious conflict which sharpens every day and which brings about several incidents of different magnitude; but the most serious problem of all is that the society itself looks indifferent, it does nothing in this respect, it looks like living involved in violence and being preys of these criminal or violent acts is part of our new way of living. It seems that it is getting accustomed to it or, sadly, giving up.

In Mexico, it has not been propitiated, at any governmental level or social status, a culture against the violence; it lacks of a culture of conciliation and pacific resolution of conflicts, and the faint efforts of some nongovernmental organizations are being dejected by the endless aggression attitudes in which the main political and party figures take part in. Furthermore, it is generally believed that the violence, although an everyday fact, is a secret that has to be made visible because "the problems are solved at home" and the only responsible for that are the people involved (ICESI, 2005).

However, nowadays new generations consider that violence should not be only a family's problem, but the whole society's and most importantly the government actors' problem because of the seriousness of the impact on the individual's physical and psychological health; on the economic, material and human resources that have to be assigned for its attention; apart from the implications on the productive activities and finally, because of the sheer line that divides domestic violence from delinquency. These reasons are enough to reflect and foster anybody who would like to have better conditions of life. That is why human beings as members of a society, and in this particular case, as a geographer, we are trying to participate and contribute with a useful, functional and effective tool to manage an spatial analysis of violence, and if possible, decrease the rates of violence so that in the future, not very far from now, a reversion or eradication of this phenomenon is achieved.

To start with, according to the World Health Organization (WHO) violence is defined as the intentional use of the force as a threat against oneself, another person, group or community which can cause injuries, death, psychological damage or developmental disorders (WHO, 2000). Then, it is possible to point out that violence has different types: self-infringed violence, which involves behavior in which people cause self-injuries or suicide; the interpersonal, which is domestic violence (couple violence, children, disable and elderly people's abuses, and so forth; community violence, involving youth violence and assaults; collective violence like genocide, terrorist acts, guerrillas and wars (SEDESOL, 2005). In this research the focus is interpersonal violence that will be called "domestic violence."

INEGI (2004) states that a family is the basic unit of any society since it is shaped by people who share blood ties and affection like parents, siblings, cousins, uncles or aunts, grandparents (relatives) and by individuals who do not have the same blood such as parents in-law, brothers or sisters in-law, step parents or step children. People who are members of a family could be from different ages and have different roles, interest, needs or projects, but who share the same history, forms of life, feelings, problems, resources and expectations, which give to these groups wealth and complementarity.

There is not an only type of family but compositions and diverse arrangements that structure according to the members' needs, interests and possibilities. Nevertheless, not considering the number of the members and the structure that they have, people gather in a private place, establish norms and customs, assume their own values, define their forms to administrate resources and distribute the household chores and set up specific mechanisms to solve everyday problems and react to difficulties. As a family, they have their first experiences, build their knowledge and assume values and behavior that use in other social places like schools, workplaces, the community and relationship with other people. Thus, we can say that each person is what they live as a family, that is why it is very important to establish social relations (INEGI, 2004).

Based on these ideas, it is confirmed that families are essential groups with basic relations for the human interaction, and they are not exempt to having differences and conflicts between their members which risk their resources and strategies to solve them. When the family tries to solve their problems by talking to each other respectfully, discussing and negotiating, it is possible to form integral, harmonic and self-confident beings which can develop fully skills and capabilities.

According to SEDESOL (2005), violence can occur frequently in families due to multiple conditions, some of them are:

- Lack of mechanisms to control and channel the family stress because of the different stages it goes through like the setting-up, family expansion for the children's birth, children's leaving the family and empty nest; social and economic pressure.
- The presence of conflicts among the family members along with the lack of mechanisms of solutions based on the negotiation, discussion and respect.

- Age and sex differences, instead of being perceived as a wealth and complementarity, they cause distance between the members, above all, with the presence of the weak that are perceived as a charge: elderly people, children and disable people.
- Verticality and rigidity of the family structure based on obedience and punishment instead of horizontal and democratic relationships.
- Concealed ways of violence that happen in the family, but which are not recognized as problems.
- Isolation and lack of communication.
- The culture and mass media influence on the people's attitudes and behavior.

Domestic violence was concealed for a long time due to the fact that it was considered private and intimate. It was not until the 1930s, thanks for the work and the impetus from women's organizations and groups, the violence reflection and analysis came from the specialized areas to public discussion, which made it be recognized as a legal and health problem. Thus, it was an advance on the legislation in respond to this problem. In the last decade, laws were passed in order to prevent, respond and treat violence en 25 states in México, and some bills have been proposed in other three states (SEDESOL, 2005).

The creation of the Official Mexican Norm NOM-190-SSA in 1999 represents development. In this, it is presented the criteria for the medical attention from domestic violence in health centers. According to this Norm, domestic violence is "el acto u omisión único o repetitivo, cometido por un miembro de la familia, en relación de poder- en función del sexo, edad o condición física- contra otros u otros integrantes de la misma, sin importar el espacio donde ocurra el maltrato físico, psicológico, sexual o abandono" (SSA, 1999), that is to say, the only or repetitive physical, psychological, sexual or abandon act caused by any member of the family because of their power, age or physical condition against any member of it without taking into account the place where it takes place.

In the State of Mexico, the best reference to know about the different kinds of violence is the Law on Women's Access to a Life Free of Violence of the State of Mexico (Ley de Acceso a las Mujeres a una Vida Libre de Violencia del Estado de Mexico); First Title Corresponding to General Dispositions, whose unique chapter the following is cited:

Article 3. - For the effects of this Law, it is understood that:

1. Gender Violence: the set of threats, insults, abuse, injury and damage associated with exclusion, subordination, discrimination and exploitation of women and girls which is consubstantial to gender oppression in all its forms. Gender violence against women and girls involves both individuals and society in its various forms apart from organizations, communities, relationships, social practices and institutions and the State which allows that due to the fact that it does not ensure equality since it perpetuates legal and judicial forms, androcentric policies and gender hierarchy which do not give security guarantees to women. Gender violence is exercised both in the private and the public scope manifesting itself in different types and modalities such as in the family, community, institution, occupation, education and femicide in an enunciate but not limited form.
2. Sexual Violence: Non-consensual artificial insemination, prenatal sex selection, induced sterilization, rape, child pornography and trafficking for sexual exploitation, denigration of women in the media as sex objects, trafficking of women and girls, molestation and sexual harassment, lewd touching without consent, sexual terrorism;
3. Occupational and Educational violence: The derivative of gender status, the prohibition to start or continue with school or work activities, the discrimination in the educational and occupational system, the required proof of pregnancy in the workplace, the demand of a certain height and body size as a job selection criteria, imposition on the way of wearing clothes, exclusion of certain charges due to gender and age, vocational imposition at the school level, stigma and sexism to choose and pursue careers not

stereotyped by the gender, women's stereotyped images in sexist content in textbooks or in advertisements and publications in the workplace, molestation and sexual harassment at school and work.

4. Educational Violence: The derivative from the gender condition, insensitivity to pain, or no attention to women's diseases by health centers; gender stereotypes in the fields of justice and law, in the media or in the development and assistance programs; dereliction and impunity in the administration and delivery of justice when it comes to the presumption of crimes against women; inclusion of women in programs for vulnerable groups and women's death due to preventable causes such as maternal mortality, cervical cancer and breast cancer.
5. Femicide violence: The women's homicide by strangers or acquaintances, spouse, ex-spouse concubine or ex-concubine, boyfriend or ex-boyfriend, who has or has had a de facto relationship with the victim, regardless the family relationship.

Study Development

According to the agreement to create the Institutional Board to coordinate prevention and care activities as well as the family violence against women, public policies aimed at strengthening the actions taken to reduce violence in the family, are divided into seven sub-works:

1. Prevention
2. Attention
3. Detection
4. Communication and broadcasting
5. Information and evaluation
6. Regulations
7. Coordination and liaison

These sub-works give this research of a framework of action to set up a methodology that allows not only characterization, but also the spatial analysis of Gender Violence, linking diverse methodological schemes. Firstly, a conceptual schema was developed, which considers few determined criteria established by governmental dependencies to obtain the data, as the INEGI, SEDESOL, INMUJERES and the SSA (Spanish acronym) have done with their national surveys on the relationship in their houses, sensibility models and violence prevention, and expedition of official norms for health. However, none of the many dependencies has worked to establish a unique methodology that favors the analysis of violence in two main ways: first, to create indicators for study and the second, the approval of a geographical basis.

In this regard, the approval of the geographical base turns out to be the most complicate due to official bodies such as the INEGI, which is nationwide, and IIIGECM at a state level, do not produce cartographic products with the same technical parameters, political or administrative, resulting in, many of the cases, that the information concerning a graphical entity (state, city or town) is represented as two distinct when entered into a geographic information system in spite of the metadata they contain.

An additional drawback is the current models of attention to violence by the bodies responsible for such tasks. In the particular case of the State Council of Women and Social Welfare of the State of Mexico, information is collected based on three types of service modules.

The most modern is the line of non-violence, which bases its operation on a call center that records through a cover of typing by magnetic media, details and data reported from violence acts so a database is fed using the software MICROSOFT ACCESS. The second type is the typing of data through the Pre-consultation Format. It consists of a printed questionnaire filled in by the victim when they come to a care module to

seek advice whether legal or psychological, and the third type of service is one that gathers information about the victim when they have already been sent to a shelter for victims of violence, where their physical integrity and their children's are taken care of. The latter information cannot be accessed for academic purposes due to strict confidentiality.

The cartographic information was obtained from digital files generated by the Urban Development Department of Toluca, updated to 2009, which covers all the towns of the State of Mexico and their integration as delegations. The attribute of the delegation will link the graphical entity with violence databases from official sources as well as their link with socio-demographic variables.

Finally, the population density per delegation was estimated using the database as well as the violence indicators taking into account the total female population over 15 years old and the total of official records of violence. The results were formulated by comparing contingency tables with the SPAW v18 Statistics software whose usefulness facilitates a descriptive analysis of the data, giving the possibility to confront the socio-demographic variables of the population count against the attributes of the records of violence.

Quantitative Analysis

The database provided by the State Council of Women and Social Welfare, corresponding to gender violence in 2009 in Toluca, reached 242 records from which 237 were female and 5 male. That is to say, the proportion of complaints by women reaches 47.4 in a man's case in this specific aspect. Due to this overwhelming ratio -98 percent vs. percent-, this study focuses on the analysis of the proportion of the female sex, since it is by far the most unprotected and violated social sector. Then, the main aspects derived from the databases are described, taking into consideration that these were provided by the Legal and Psychological Care Area of the State Council of Women and Social Welfare of the State of Mexico during 2009.

Territorial Integration

The municipality of Toluca is located in the central zone of the State of Mexico. Its coordinates range from 18°59' to 19°27' north latitude and from 99° 31' to 99°46' east latitude. So the average latitude is 2,600 meters above sea level although it gets over 4,000 msnm near the Nevado de Toluca Volcano.

Gender Violence

According to the data, some diachronic research can be done on this topic for the municipality of Toluca. AS a consequence, this results in the basis for future studies in different municipalities belonging to the State of Mexico. In the following table, the most outstanding results are presented.

In an overwhelming 48.9% of the cases that gave their address, a residence from a colony or neighborhood is located in this county seat; whereas the 51.1 % of the cases reported their address as part of the delegations (villages) of this municipality. The most remarkable delegation is San Antonio Buenavista, Santiago Tlaxomulco and San Martin Toltepec, which do not have any record during 2009. On the other hand, the delegations with the most cases reported are San Pablo Autopan (7.53%) and San Lorenzo Tepaltitlan (5.38%).

From the 237 cases registered, 43 cases reported and unknown residence, which means that the fifth part of the victims did not want their address to be known. It would be ideal to have everybody's location to mark priorities so that punctual attention would be given to the most affected colonies or delegations such as legal and psychological attention, prevention campaigns, policies and resources directed to them.

Total of Reported Cases Per Delegation

Table 1. Total of reported cases per Residence Delegation (Own Work Based on CEMYBS Data, 2009).

Delegation/ County Seat	Frequency	Gross percentage	Valid percentage	Cumulative percentage
San juan tilapa	1	0.42	0.54	0.54
Santiago tlacotepec	4	1.69	2.15	2.69
Cacalomacan	2	0.84	1.08	3.76
San felipe talmimiloolpan	5	2.11	2.69	6.45
San antonio buenavista	0	0.00	0.00	6.45
Capoultitlan	6	2.53	3.23	9.68
San lorenzo tepaltitlan	10	4.22	5.38	15.05
Santiago miltepec	1	0.42	0.54	15.59
San marcos yachihuacaltepec	1	0.42	0.54	16.13
Santiago tlaxomulco	0	0.00	0.00	16.13
Toluca de lerdo	91	38.40	48.92	65.05
Santa cruz atzacapotzaltongo	3	1.27	1.61	66.67
Calixtlahuaca	5	2.11	2.69	69.35
Tecaxic	4	1.69	2.15	71.51
San martin totoltepec	0	0.00	0.00	71.51
San mateo oxtotitlan	2	0.84	1.08	72.58
San Buenaventura	9	3.80	4.84	77.42
Tlachaloya	1	0.42	0.54	77.96
San andres cuexcontitlan	1	0.42	0.54	78.49
San cristobal huichochitlan	4	1.69	2.15	80.65
San pablo autopan	14	5.91	7.53	88.17
San pedro totoltepec	8	3.38	4.30	92.47
San mateo otzacatipan	8	3.38	4.30	96.77
Santa ana tlpaltitlan	4	1.69	2.15	98.92
Santa maria totoltepec	2	0.84	1.08	100.00
Another municipality	8	3.38		
Without given data	43	18.14		
Total	237.00	100.00	100.00	

It would be great to relate the social composition of the colonies against the delegations or villages, which at first we might think that they bring together traditional residents, while the colonies are integrated by people who may come from different places, both from the county seat or other municipalities and neighboring entities.

Type of Place in Which the Plaintiff Inhabits

Table 2. Type of plaintiffs' residence (Own Work based on the data by the CEMYBS, 2009).

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
RURAL	9	3.80	4.21	4.21
URBAN	205	86.50	95.75	100.00
WITHOUT DATA	23	9.70		
TOTAL	237.00	100.00	100.00	

In the urban area, the risk of experiencing violence is bigger. The 95.75 % of the women's cases who live in this area denunciate, whereas the women from rural areas only do it 4.21 % of the cases.

Age Groups of the Plaintiffs

Table. 3. Range of age of the plaintiffs (Own Work Based on CEMYBS Data, 2009).

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
10 to 14	1	0.42	0.43	0.43
15 to 19	8	3.38	3.43	3.86
20 to 24	32	13.50	13.73	17.60
25 to 29	47	19.83	20.17	37.77
30 to 34	36	15.19	15.45	53.22
35 to 39	33	13.92	14.16	67.38
40 to 44	30	12.66	12.88	80.26
45 to 49	12	5.06	5.15	85.41
50 to 54	17	7.17	7.30	92.70
55 to 59	6	2.53	2.58	95.28
60 to 64	3	1.27	1.29	96.57
65 to 69	1	0.42	0.43	97.00
Over 70	7	2.95	3.00	100.00
Without Data	4	1.69		
Total	237.00	100.00	100.00	

One of the most important quality attributes collected through the complaints recorded is the one corresponding to the age group of the victims. This information along with the characterization of the violence itself helps to identify the sort of information and sensitization campaigns that should be carried out. The classification of the range of age begins from 10 to 70 years old, identifying an only case in the youngest range and seven over 70. Based on these data, more cases were found in the range of 25 to 29 with the 20.17% of the total. Nevertheless, the rest of the records, ranging from 20 to 44 years old, have a homogeneous result, which means more than three quarters of the cases, that is to say, an impressive 76.39% of the total.

Plaintiffs' studies

Table 4. Plaintiff's Level of Studies (Own Work Based on CEMYBS Data, 2009).

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
Any studies	10	4.22	6.80	6.80
Primary	22	9.28	14.97	21.77
Secondary	43	18.14	29.25	51.02
High school	20	8.44	13.61	64.63
Technical studies	24	10.13	16.33	80.95
University	28	11.81	19.05	100.00
Posgraduate studies	0	0.00	0.00	100.00
Without data	20	37.97		
Total	237.00	100.00	100.00	

The victims' level of studies that denunciate violence acts portrays that more than the half of them (51.02% of the valid percentage) have no more than nine years of studies and less than the fifth part of them have a

professional formation (19.05%). A third part of the victims (29.25%) have secondary studies, so there is a great difference between the records before and after, doubling the latter percentage.

Plaintiff's jobs or Occupations

Table 5. Plaintiffs' Occupations (Own Work Based on CEMYBS Data, 2009).

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
Housewife	115	48.52	49.15	49.15
Employee	65	27.43	27.78	76.92
Merchant	25	10.55	10.68	87.61
Student	9	3.80	3.85	91.45
Profession				
Independent	5	2.11	2.14	93.59
Retired	1	0.42	0.43	94.02
Housekeeper	1	0.42	0.43	94.44
Unemployee	13	5.49	5.56	100.00
Without data	3	1.27		
Total	237.00	100.00	100.00	

Almost half of requests for assistance, the 49.15%, are filed by the housewives, resulting in the most affected category, which is related to the statistics again, since 47 women out of 100 who live with their partner claim to have suffered some aggression. Near the third of part of the cases, 27.78% were recorded by employees and the tenth by merchants. Unemployed women who experienced violence account for 5.56%, while the students from any level only are about 4%.

Plaintiffs' Marital Status

Table 6. Plaintiffs' Marital Status and Ways of Living (Own Work Based on CEMYBS Data, 2009).

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
Married	150	63.29	63.56	63.56
Divorced	6	2.53	2.54	66.10
Separate	4	1.69	1.69	67.80
Single	52	21.94	22.03	89.83
Free union	20	8.44	8.47	98.31
Widow	4	1.69	1.69	100.00
Without data	1	0.42		
Total	237.00	100.00	100.00	

Although marital status, in theory, seems to give legal certainty to those who marry, the data show that being married is a serious risk of being a victim of violence. According to these figures, married women are nearly three times more likely to be a victim of violence than single women, or almost eight times more than women who live with a partner without being married, and even though the separation or divorce may be a solution to the problem, divorced women (2.54%) or separate women (1.69%) do not think so. On the other hand, 1.69 % of plaintiffs who are widows are prone to be attacked by relatives.

Plaintiffs' Dwelling Property, 2009.

Table 7. Own Work Based on CEMYBS Data, 2009.

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
Own House	75	31.65	31.65	31.65
Not Own House	162	68.35	68.35	100.00
Without Data	0	0.00	0.00	
Total	237.00	100.00	100.00	

Plaintiffs' Dwelling Condition, 2009.

According to the records regarding the property of the dwelling, the vast majority of the plaintiffs stated not to live in their own house and just the third part of them live in their own houses. However, the same number of plaintiffs (27) says they live in a rented house and 210 of them live in another way if living which was not stated.

Table 8. Own Work Based on CEMYBS Data, 2009.

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
Rented House	27	11.39	11.39	11.39
Not Rented House	210	88.61	88.61	100.00
Without Data	0	0.00	0.00	
Total	237.00	100.00	100.00	

Violence Profile

The phenomenon of gender violence is multidimensional because its causes, consequences and implications can be found in the public and private sector; what is more, it affects both the direct victims of violence and their beloved ones. In Mexico there have been a lot of effort to quantify it, but it was not until the National Survey on the Dynamics of Household Relationships 2003 (ENDIREH for its acronym in Spanish) that an approximation of the magnitude of this phenomenon at national level was done, both in the rural and urban areas and in some states of the country.

According to the World Health Organization, if the number of abused women reaches over 35% out of the total of the women population, it shows a high level of violence against these people. In this sense, the municipality of Toluca is above countries like Serbia, Montenegro, Namibia and Brazil, although below Peru, Ethiopia, Thailand and Bangladesh.

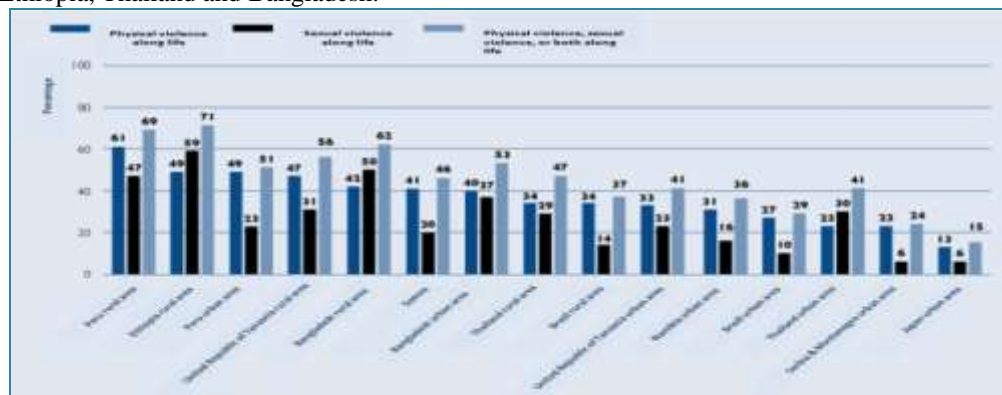


Figure 1. Source:

<http://www.inegi.gob.mx/inegi/contenidos/espanol/prensa/Contenidos/estadisticas/2005/violencia05.pdf>.

Compared to the rest of the country and taking into consideration that the surveys from the INEGI only refers to couple or husband, the violence against women in this municipality (36.1%) is less than the national average, since it is estimated that “47 out of 100 women from 15 years old or more who live with their couple go through economic, psychological, physical or sexual violence from their couple or husband.” However, the National Survey on the Dynamics of Household Relationships 2003 and 2006 states that the vast majority of the types of violence, there is a decline except for the physical violence which increases almost a point in the percentage.

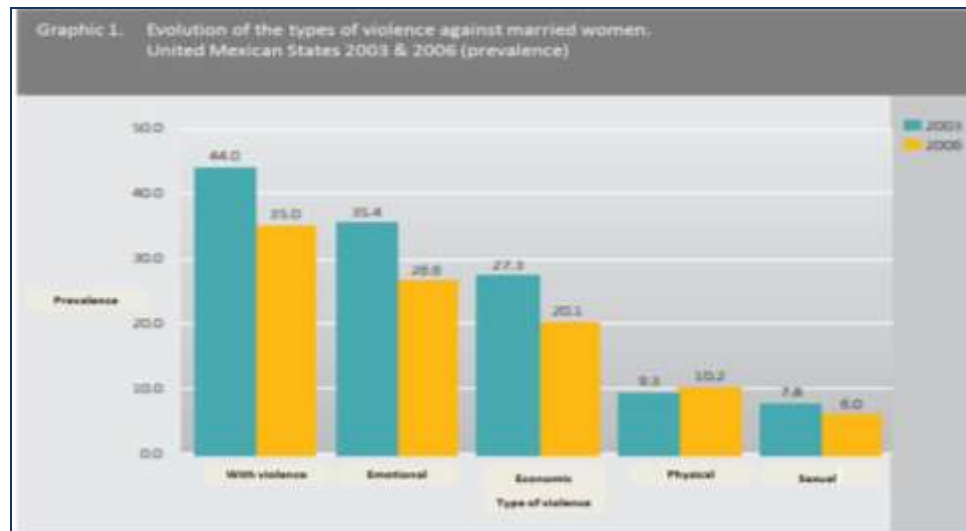


Figure 2. Source: http://cedoc.inmujeres.gob.mx/documentos_download/100924.pdf

The records corresponding to Toluca during the year 2009 allow to complement the information according to the one pointed in the Access Law for Women to be Free of Violence in the State of Mexico, which states the types of violence in: psychological, physical, economic, patrimonial, sexual and sex trafficking, which may have the different forms: familiar, institutional, occupational, educational and community.

Types of violence

Table 9. Own Work Based on CEMYBS Data, 2009.

	Frequency	Gross percentage
Psychological	152	64.14
Physical	91	38.40
Patrimonial	23	9.70
Economic	97	40.93
Sexual	18	7.59
Sex trafficking	0	0.00
Total of cases	237	

In this sense, the victims could have been attacked in more than one type of violence although the vast majority only reported one type. So analyzing this relationship, it is known that the third part of the cases, 64.14% of the women victims, underwent at least a psychological violence incident; around the third part, 38.4%, stated to have been victims of physical violence; about the tenth part, 9.70%, declared they had been victims against their properties; 40.93% had been economically attacked; and, 7.59% had been victims of a sexual attack, sex-trafficking was not reported though.

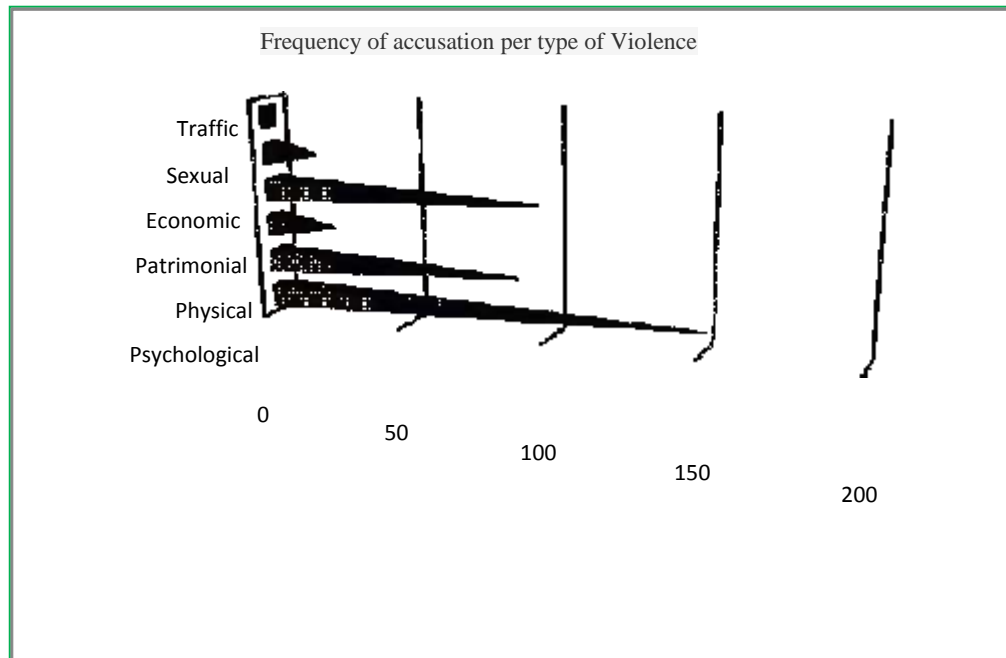


Figure 3. Own Work Based on CEMYBS Data, 2009.

INEGI reports that in Mexico, nine out of 100 women are attacked physically, 8 out of 100 have had sexual abuse and 38 and 29 out of 100 have experienced emotional or economic violence respectively.

As it can be seen in the types of violence, some aspects the records on violence against women surpass the national average with 29.4 percent. The emotional violence is 26.14 over the mean as well as the economic one, which has 11.93 percent. On the other hand, sexual violence is 0.41 points below the mean.

Violence Mode

Table 10. Own Work Based on CEMYBS Data, 2009.

	Frequency	Gross percentage
Familiar	199	83.97
Institutional	0	0.00
Occupational	1	0.42
Educational	1	0.42
Community	7	2.95
Total of cases	239	

In this case, the data of the kind of violence is consistent again with national statistics; most of the plaintiffs were victims of aggression in their own family, reported by 84 out of 100 women who requested help; while the occupational and educational violence only has one case each, 7 cases for community and none for the institutional.

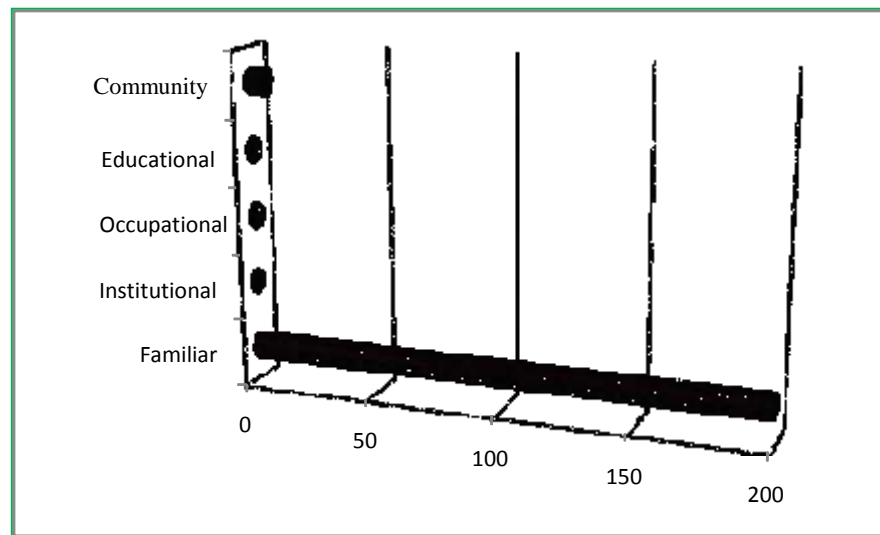


Figure 4. Frequency of denounces per violence mode. Own Work Based on CEMYBS Data, 2009.

Attacker

Table 11. Own Work Based on CEMYBS Data, 2009.

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
Known person	7	2.95	3.03	3.03
Unknown person	3	1.27	1.30	4.33
Husband	189	79.75	81.82	86.15
Brother	4	4	1.69	1.73
Son	2	2	0.84	86.15
Mother	2	2	0.84	87.88
Boss	1	0.42	0.43	90.04
Boyfriend	5	2.11	2.16	92.21
Father	17	7.17	7.36	99.57
Uncle	1	0.42	0.43	
Without data	6	2.53		
Total	237	100.00	100.00	

By analyzing the database by type of attacker, it is highlighted the fact that most women from Toluca who reported abuse are victims by their family or partner, because 93.08% of them said so.

Incredibly, the 81.82% of the attackers are husbands or partners of the victims, at a much lower percentage -7.36% - the aggressor is the victim's father, the groom 2.16%, 1.73% a brother or mother or a son 0.87%. The remaining 6.49% of women were attacked by any other people, and only 0.43% was by the boss or employer.

Violence Time

Curiously, violence is manifested in different ways throughout the year and a close relationship was not found between schedule and records of violence. Days of payment, which could be interpreted as key days at home due to the availability of money that would be thought up as an excuse for the generation of conflict, do not represent the highest incidence.

Table 12. Own Work Based on CEMYBS Data, 2009.

	Frequency	Gross percentage	Valid percentage	Cumulative percentage
January	11	4.64	4.64	4.64
February	35	14.77	14.77	19.41
March	31	13.08	13.08	32.49
April	12	5.06	5.06	37.55
May	17	7.17	7.17	44.73
June	32	13.50	13.50	58.23
July	12	5.06	5.06	63.29
August	1	0.42	0.42	63.71
September	26	10.97	10.97	74.68
October	38	16.03	16.03	90.72
November	3	1.27	1.27	91.98
December	19	8.02	8.02	100.00
Without data	0	0.00		
	237.00	100.00	100.00	

October, February and June stand out over the other months with 16%, 14% and 13% respectively. The calmest month of records was August since it only has a case recorded.

Socio-Demographic Variables Correlation

The diversity of the municipal territory requires a sociodemographic diagnosis to identify the background of the manifesting gender violence problem. Considering the behavior of these social variables, it can be defined a guideline that will give birth to new government policies and municipal or state actions for caring and following up cases of gender violence. Since the municipal offices are not contemplated as a geostatistical unit by INEGI, various analysis procedures were considered to quantify census variables and grouping them at a delegation level. In order to know the data as close as possible, databases acquired from INEGI, called IRIS Scince 2005 as well as the ITER 2005 locations Catalog were used.

Thus, the processes involved from queries from territorial units in the program IRIS Scince 2005 to export from the attribute tables to spreadsheet formats to access online information concerning the ITER2005 for villages in the State of Mexico and clear it up so that only the cases related to Toluca was worked on, and with that create the basis of geographical attributes for each village in the municipality.

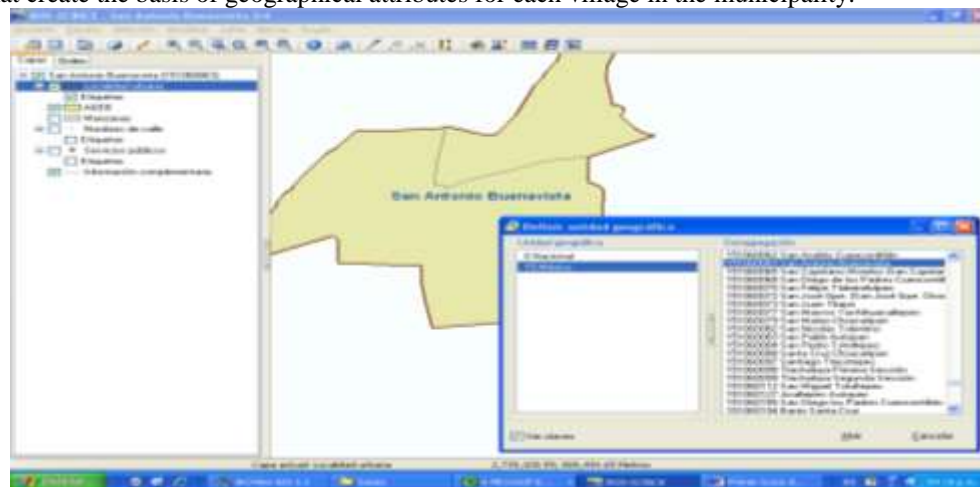


Figure 4. View of the program IRIS Scince 2005 from INEGI. Source: Own design and build-up.

The INEGI's information itself complicated more these processes since the ITER has a system of geodesic geographic coordinates; whereas the IRIS Scince uses the Lambert Conformal Conic projection (LCC), along with the way the information is compiled, that is to say, the coverage of the delegations and the municipality borders, media, and the urban equipment—provided by the Public Works Municipal Department of Toluca—corresponds to a cartographic projection with Universal Transverse Mercator (UTM), for the North Zone 14. To go on with the processes of variables conformation of the municipality, the three sources of cartographic information were standardized and homologated in only one reference and cartographic projection resulted in as a base the UTM for WGS84.

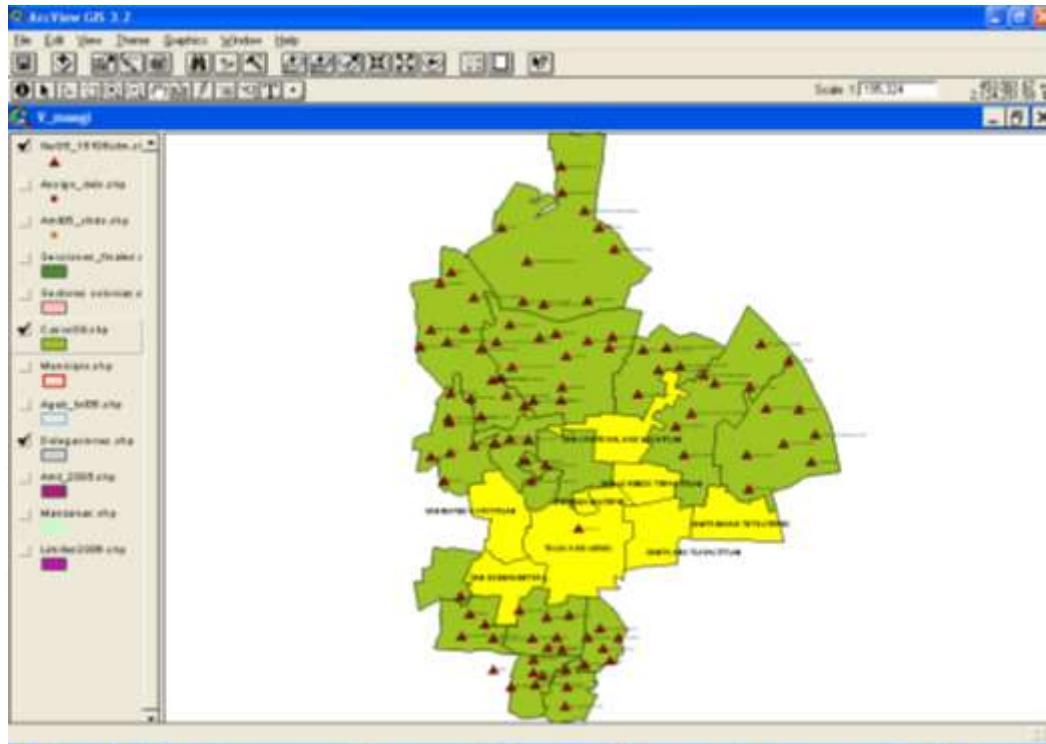


Figure 6. Picture of the villages from the ITER 2005. Own design and build-up.

There was carried out a first crossing of the information between the layers of the municipal delegations in the Basic GeoStatistics Areas (AGEB, acronym in Spanish, whose objective is to give spatial reference of the information gathered in the census of population), calculating the centroids for both layers of information. By using the tool “selection by position” of the Arc View GISTTM, it was conceded to the AGEB the attributes of the respective delegation, that is to say, the ones that its centroids coincided spatially with them. After the selection by location was done, it was used the extension of “geoprocessing,” specifically the tool “assignment by location.”

The conformation procedure of the sociodemographic attributes was to be done this way because the ITER 2005 for Toluca did not allow to group the data for the delegation of Toluca, San Buenaventura, San Mateo Oxtotitlan, Santiago Miltepec, Santa Ana Tlapaltitlan, Santa Maria Totoltepec, San Lorenzo Tlapaltitlan and San Cristobal Huichochitlan, which are administratively concentrated in one location, the county seat - known as Toluca. As a result, this did not prove to be helpful.

Continuing with the crossings of the information to integrate the database with the right information for each delegation, layers of information generated by centroids were used so that via “summary” statistics processes, definite attribute tables were obtained per delegation.

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Table 13. Selection of variables to correlate.

Key	Socio-demographic variables
P_TOTAL	Total of the population
P_MAS	Masculine population
P_FEM	Feminine population
P_15YMAS	Population over 15 years old
P_15YMAS_M	Masculine Population over 15 years old
P_15YMAS_F	Feminine Population over 15 years old
REL_H_M	Men and Women relationship
P_OE2000	Population over 5 years of residence in another city in October 2000
P_M_OE2000	Masculine Population over 5 years of residence in another city in October 2000
P_F_OE2000	Feminine Population over 5 years of residence in another city in October 2000
P_SINDER	Population without medical insurance
P_15MAAN	Illiterate Population over 15 years old
P_M_15MAAN	Illiterate Masculine Population over 15 years old
P_F_15MAAN	Illiterate Feminine Population over 15 years old
P15YMASE	Population over 15 years old without studies
PM_15YMASE	Masculine Population over 15 years old without studies
PF_15YMASE	Feminine Population over 15 years old without studies
GRAPROES	Average grade of studies
GRADOES_M	Masculine Population average grade of studies
GRADOES_F	Feminine Population Average grade of studies
P5YMAHLI	Population over 5 years old who speaks an indigenous language
P5YMAHLI_M	Masculine population over 5 years old who speaks an indigenous language
P5YMAHLI_F	Feminine population over 5 years old who speaks an indigenous language
HOG_IND	Indigenous homes
HOGAR_JM	Home with a masculine leader
HOGAR_JF	Home with a feminine leader
PRO_C_VP	Average of the number of inhabitants per room
VPH_DREE	Inhabited private houses with public piped water system, drainage and electricity
VPH_NADE	Inhabited private houses without public piped water system, drainage and electricity
VPH_TV	Inhabited private houses with television
AREA	Delegation surface area
IDV_POB	Index of the cases out of 100
IDV_KM2	Index of cases per square kilometer

Based on the previous variables, it was obtained a table with the variables whose association was very representative, directly or indirectly proportional, to the violence facts, describing the following behavior:

Table 14. Variables with a representative association.

		Socio-demographic variables	Correlation
1	P_15ymas_f	Feminine population over 15 years old	.943
2	Rel_h_m	Men and women relationship	-.499
3	P_f_oe2000	Feminine population over 5 years of residence in another city in october 2000	.610
4	P_sinder	Population without medical insurance	.854
5	Pf_15ymase	Feminine population over 15 years old without studies	.563
6	Hogar_jf	Home with a feminine leader	.967
7	Vph_dree	Inhabited private houses with public piped water system, drainage and electricity	.928
8	Vph_tv	Inhabited private houses with television	.925
9	Idv_km2	Index of cases per square kilometer	.820

The order in which the information is shown in the table obeys to the order listed by INEGI to locate them easily. With this nine resulting variables along with other indices that could derive from holistic approaches and the focused areas in the women's aspect, a new model of spatial analysis for the gender violence is put forward, which contributes to size the problem according to fixed parameters that focus on its seriousness in any political-administrative territorial unit.

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