ORIGINAL ARTICLE / *ARTIGO ORIGINAL*

The geography of femicide in Sergipe, Brazil: matriarchy, human development, and income distribution

A geografia do feminicídio em Sergipe, Brasil: matriarcado, desenvolvimento humano e distribuição de renda

Yamilla Ramos Carvalho de Sá[I] (ID), Paula Cristina Pedroso Moi[II] (ID), Noemi Dreyer Galvão[III] (ID), Ageo Mário Cândido da Silva[III] (ID), Gisele Pedroso Moi[I] (ID)

ABSTRACT: *Aim:* This research analyzed a joint spatial distribution and explored the possible associations between epidemiological aspects and feminicide rates, in towns of the Sergipe State in Northeastern Brazil. *Methodology:* An exploratory ecological study investigated the global spatial autocorrelation of epidemiological aspects with femicide rates from towns in Sergipe State, Brazil, (n = 75), in the 2013–2017 period, using the "global" and "local" Moran statistic method and a multiple spatial regression. The exposure variables included socioeconomic and demographic conditions, services and health condition, and femicide rates. We used the software Stata 11.0, SPSS 18.0 and GeoDa 0.95-i. *Results:* The spatial distribution of femicide rates was not random and showed high spatial autocorrelation and predominance of significant spatial groupings of towns with the highest mortality rates due to femicide in the central region of Sergipe State. In the multiple regression analysis, the percentage of women in charge of families and the Municipal Human Development Index were positively associated with the femicide rates in towns in Sergipe's municipalities in the studied period (p < 0.05). The opposite situation occurred between the Income Concentration Index (GINI) and the femicide rates. *Conclusion:* This is the first study that has analyzed the factors associated with the spatial clusters of femicide rates in a geographical space where there is a predominance of patriarchal culture. There was a femicide increase in locations with the lowest social inequality, the highest human development and authority exercised by women in the family environment.

Keywords: Homicide. Gender-based violence. Mortality. Epidemiology. Ecological studies. Spatial analysis.

[I]Department of Dentistry, Universidade Federal de Sergipe – Aracaju (SE), Brazil.

[II]Center for Postgraduate Studies in Administration, Universidade Federal da Bahia – Salvador (BA), Brazil.

[III]Institute of Collective Health, Universidade Federal de Mato Grosso – Cuiabá (MT), Brazil.

Corresponding author: Gisele Pedroso Moi. Rua Cláudio Batista, s/n, Cidade Nova, CEP: 49060-108, Aracaju, SE, Brazil. E-mail: gisele.pedroso.moi@gmail.com

1

RESUMO: *Objetivo:* Esta pesquisa analisou a distribuição espacial conjunta e explorou possíveis associações entre aspectos epidemiológicos e taxas de feminicídio, nos municípios do Estado de Sergipe, no nordeste brasileiro. *Métodos:* Um estudo ecológico exploratório investigou a autocorrelação espacial global de aspectos epidemiológicos com taxas de feminicídio em municípios do Estado de Sergipe, Brasil (n = 75), no período de 2013 a 2017, utilizando a estatística de Moran "global" e "local" e uma regressão espacial múltipla. As variáveis incluíram a condição socioeconômica, a situação demográfica, os serviços e estado de saúde e as taxas de feminicídio. Os softwares utilizados foram Stata 11.0, SPSS 18.0 e GeoDa 0.95-i. *Resultados:* A distribuição espacial das taxas de feminicídio não foi aleatória e apresentou elevada autocorrelação espacial e predomínio de agrupamentos espaciais significativos de municípios com as maiores taxas de mortalidade por feminicídio na região central do Estado de Sergipe. Na regressão múltipla, o percentual de mulheres chefes de família e o Índice de Desenvolvimento Humano Municipal associaram-se positivamente às taxas de feminicídio nos municípios sergipanos no período estudado (p < 0,05). Situação oposta ocorreu entre o Índice GINI e as taxas de feminicídio. *Conclusão:* Este é o primeiro estudo que analisou os fatores associados aos *clusters* espaciais das taxas de feminicídio em um espaço geográfico com predomínio da cultura patriarcal. Houve aumento do feminicídio em localidades em que há menor desigualdade social, maior desenvolvimento humano e maior autoridade exercida pelas mulheres no ambiente familiar.

Palavras-chave: Homicídio. Violência de gênero. Mortalidade. Epidemiologia. Estudos ecológicos. Análise espacial.

INTRODUCTION

Femicide is rooted in gender inequality and contributes to perpetuate the subordinate position of women in society at the legal, social, and economic levels. It is considered a serious public health issue that was described by the World Health Organization over 30 years ago[1,2].

Brazil ranks 5th on the world scale of femicide, preceded only by El Salvador, Colombia, Guatemala, and Russia[3]. The Map of Violence in Brazil (2015) has already illustrated the rising rates of female deaths due to aggression in the 1980–2013 period and the rising mortality rates in the period ranging from 2.3/100,000 — 4.8/100,000 women, respectively[4]. This trend has remained over time, as described in the latest edition of the 2019 Atlas on Violence in Brazil, which showed upward results in 2017, about 13 deaths by aggression per day — making a total of 4,936 women murdered by aggression in this year, which is the highest rate recorded since 2007[5]. There was an increase of 30.7% in the number of women murdered by aggression during the years 2007 to 2017, with an increase of 6.3% between 2016 and 2017. The Northeastern region of the country stood out for presenting expressive rates of women murdered by aggression in 2017: Rio Grande do Norte (67.4/100,000 women), followed by Ceará (64.0/100,000 women), Pernambuco (62.3/100,000 women), Sergipe (58.9/100,000 women), Bahia (55.3/100,000 women), Alagoas (53.9/100,000 women), Paraíba (33.9/100,000 women), Maranhão (31.9/100,000 women), and Piauí (20.9/100,000 women)[5]. Among Brazilian states, Sergipe draws attention for presenting the highest increase in the femicide rate per 100 thousand women (163.9%) between the years 2017 and 2018[5].

Despite the promulgation of what is known as the *"Maria da Penha* Law", which aimed to create mechanisms to curb domestic and family violence against women, female mortality from aggression in Brazil has increased more than twice in the last 30 years (*Maria da Penha* Law, Law n. 11.340, August 7th, 2006)[6]. It is not known for sure whether the increase in police records of femicide reflects an increase in the number of cases or a decrease in underreporting, considering that the *"Maria da Penha* Law" is relatively new, so that there may be an ongoing learning process by the judicial authorities[5,7]. Nevertheless, this can have happened because this device allows retaliations that often culminated in femicide[8,9]. In order to change this sad Brazilian reality, another important law called the "Femicide Law" was implemented with the purpose of being even more rigorous in coercing aggressors and making this phenomenon still visible. With the amendment of article 121 of the Brazilian Penal Code, femicide becomes qualified in the list of heinous crimes (Femicide Law, Law n. 13.104, March 9th, 2015)[10,11].

Studies have shown an increase in femicides in capitals and in large Brazilian cities, in the three-year periods of 2007–2009 and 2011–2013, mainly among young, poor, black, single and low-educated women[3]. Paradoxically, some studies on femicide have pointed out that poor women are more affected, because they observed a positive association between poverty and female deaths[12,13]. The contexts of women's homicides are diverse and obey distinct social dynamics and peculiarities to the geographic context of origin, in which the gender marker is always present[3].

In addition, the Northeastern society, especially that of the State of Sergipe, culturally preserves provincial habits and traditions in a peculiar way, whose valorization of families with surnames, titles and economic possessions is an indelible mark in the history of the patriarchy present in the Brazilian Northeast[14,15]. Hence, there is evidence that points to an increase in this type of violence in places where patriarchal culture is still perpetuated[16], because in more conservative communities, gender norms are more rigid and women remain submissive, strictly fulfilling and supporting for long periods the roles assigned to them by culture[3].

Thus, the present study aimed to analyze the joint spatial distribution and explore possible associations between epidemiological aspects and femicide rates, in the 2013–2017 period, in towns of the State of Sergipe in Northeastern Brazil.

METHODS

This exploratory ecological study was approved by the Ethics Committee of the Universidade Federal de Sergipe (CAEE 17504319.0.0000.5546), including secondary data from the Sergipe population, which is freely available in Brazilian databases.

Sergipe is the smallest Brazilian state and sixth least populous in the country, with a geographical area of 21,926.908 km² and a population of 2,068,017 people. It is divided into eight territories (Agreste Central, Alto Sertão, Baixo São Francisco, Centro Sul, Grande Aracaju, Leste, Médio Sertão, Sul) and 75 municipalities, whose greatest distance from the capital of the

state is around 200 km[17]. Sergipe is 20th in the national ranking of the Human Development Index and fourth in the ranking in this category among the Northeastern states. Its capital, Aracaju, is a true social and economic oasis of opportunities for other municipalities in the state, with the best development rates and indicators in Sergipe. Aracaju, thus, offers the best work and service opportunities. Such aspects that have called the attention of the population residing in the State's countryside to the capital[17], since more than half of the towns in Sergipe have a low human development index and a high social vulnerability index[18].

The geographic and spatial data of each municipality in Sergipe, considering its latitude, longitude, perimeter, area and location, were obtained from the website of the Brazilian Institute of Geography and Statistics (IBGE)[17].

The dependent variable of this study was determined from the female mortality rates due to aggression, calculated according to each municipality in Sergipe, in the period from 2013 to 2017. The coefficients were grouped into five years to decrease the temporal and geographic oscillations common in small magnitude events. Gross mortality data due to women aggression were retrieved from the Brazilian Ministry of Health's Mortality Information System and death causes were considered according to the categories of the 10th Edition of the International Classification of Diseases (ICD-10) in the range from X85 to Y09[19]. The total resident population data in each municipality in the State of Sergipe in the period corresponding to the study were based on the 2010 population census and estimates for the inter-census years, which were obtained on the website of the IBGE[17]. Femicide rates were calculated by dividing the mortality data related to women's aggression in each of the Sergipe's towns by the data on the total female population residing in the same place.

The independent variables selected for this study were collected in several national databases in the studied period (2013–2017), in which the averages of the data available for each of these variables were estimated. These variables are described in detail as follows:

- Socioeconomic status – Municipal Human Development Index (MHDI), Income Concentration Index (GINI Index), average household income per capita, percentage of the population with less than ½ of minimum wage, percentage of unemployed individuals and percentage of female heads of household were recovered from the IBGE website[20]; and the Social Vulnerability Index (SVI) was obtained from the Institute of Applied Economic Research[18];
- Demographic status – percentages of civil and/or religious marriage, Catholics, Evangelicals, population that does not follow any religion, urban population and rural population were recovered from IBGE website[20];
- Services and health status – percentage of population covered by the Brazilian Unified Health System, mortality rate from Human Immunodeficiency Virus, maternal mortality rate, cervical cancer mortality rate that were retrieved from the Health Information System websites of the Brazilian Ministry of Health[19].

Univariate exploratory analysis of spatial data was performed to investigate the global spatial autocorrelation of femicide rates in Sergipe's municipalities using the Moran I index,

under the assumptions of normality and randomization[21]. The distribution of Moran index values varies between -1.0 and +1.0 and tests whether connected areas present greater similarity in relation to the studied indicator, than would be expected in a random pattern. Thus, the spatial autocorrelation measures the number of nearby objects compared to others using the Moran I index, which can be classified as positive, negative, and without spatial autocorrelation.

The variables in this study were grouped into three blocks to jointly assess the indicators associated with femicide by Pearson's correlation coefficient (r), in which the direction and magnitude of the associations between the independent variables were assessed using a correlation matrix: socioeconomic status; demographic status; and services and health status.

For this analysis, all variables were standardized with a mean of zero (0.0) and standard deviation equal to one (1.0), due to their different dimensions, which could impair their inclusion and interpretation in the model.

Multiple spatial regression was performed in the last analysis phase. The quality of the spatial regression model fit is similar to the traditional linear regression model, which was verified by the residual analysis and also based on the Moran I index[22]. The following criteria were used to include or remove variables from the model:

- selection of the variable with the highest statistical correlation;
- inclusion of variables that, when analyzed together, obtained a higher F in the simple regression analysis. This inclusion does not prevent variables in the same block from being included as "adjustment variables", regardless of their association;
- inclusion of variables that, once in partial correlation, controlled by modeled variables, showed significant correlation with the dependent variable.

The final model exclusion criteria for the variables were $p \geq 0.05$. The software used was Stata 11.0, SPSS 18.0, and GeoDa 0.95-i.

RESULTS

A standardized average mortality rate of 26.80 deaths/100,000 women in Sergipe's towns. The spatial distribution of femicide rates is illustrated in Figure 1. The highest rates occurred in Sergipe's territories that correspond to the Grande Aracaju (45.54 deaths/100,000 women), Sul (32.97 deaths/100,000 women), Agreste Central (32.44 deaths/100,000 women), Médio Sertão (27.37 deaths/100,000 women), Centro Sul (26.39 deaths/100,000 women), Baixo São Francisco (17.59 deaths/100,000 women), Alto Sertão (16.79 deaths/100,000 women) and Leste (16,04 deaths/100,000 women), successively. Among the 75 municipalities in the state of Sergipe, its capital Aracaju is in the 37th position in the femicide ranking.

There was not a random distribution of this rate with positive spatial autocorrelation (I = 0.0993881; p = 0.001 for 999 permutations). It is possible to observe the occurrence of spatial autocorrelations of the "high-high" type, indicating a grouping of municipalities in

Sergipe with the highest mortality rates due to femicide located in the central region of Sergipe (Areia Branca, Malhador, Santa Rosa de Lima, Ribeirópolis) and the "low-low" type, which was considered the group with the lowest rate, represented by the municipalities of Nossa Senhora de Lourdes, Propriá, São Francisco and Japaratuba (Figure 2). Spatial auto-correlations of the "low-high" type were seen in the municipality of Maruim. Thus, the municipality or the spatial group presents low values regarding the rates of femicide, but high rates in the surrounding municipalities (Figure 2). An inverse condition was observed in the municipalities of Lagarto, Aquidabã and Carmópolis, where spatial autocorrelations of the "high-low" type occurred, a scenario in which these municipalities present high rates of femicide, but their surrounding municipalities have low rates (Figure 2).

Moran Local's Statistics I (Figure 3) is also of great importance for the analysis, since it shows the degree of significance of certain groups. According to the Local Space Association Indicator (LISA), the municipalities with the highest rates of femicide are Santa Rosa de Lima and Aquidabã. The analysis identified significant LISA sector clusters. The significance of this indicator in the period implies the existence of positive multidirectional externalities of the femicide rates in the municipalities of the State of Sergipe.

In the bivariate analysis (Table 1), the percentage of unemployed individuals and women in charge of families (matriarchy) had a statistically significant positive correlation with the rates of femicide ($p < 0.01$ and $p < 0.05$, respectively). There were also negative significant correlations between the proportion of the population with less than ½ of minimum wage and femicide rates ($p < 0.05$).

Table 2 illustrates the results of the final spatial regression analysis model. The percentage of women in charge of families (matriarchy) and the Municipal Human Development Index (MHDI) were positively associated with the femicide rates in Sergipe's municipalities in the period between 2013 and 2017 ($p < 0.05$). The opposite situation occurred between the Income Concentration Index (GINI Index) and the rates of femicide in these municipalities in the studied period.

Table 1. Correlation matrix among femicide rates standardized by 100 thousand women in Sergipe's municipalities, in the period 2013–2017, and the variables selected in different blocks of analysis.

ZTXFEM	ZTXFEM	ZIDHM	ZGINI	ZRENDA	ZPOBRE	ZIVS	ZDES	ZMATRI	ZCASA
	1	0.026	0.065	-0.211	-.522**	0.104	.588**	.246*	-0.077
ZTXFEM	ZCAT	ZEVA	ZSRELI	ZURB	ZRUR	ZSUS	ZHIV	ZMMAT	ZMCC
	-0.077	0.045	0.037	0.15	-0.156	0.089	-0.115	0.009	0.168

*p < 0.05; **p < 0.01; ZTXFEM: femicide rates standardized by 100 thousand women in Sergipe's municipalities; Z MHDI: average municipal human development index; ZGINI: average Gini Index; ZINCOME: average household income per capita; ZPOOR: proportion of the population with less than ½ of minimum wage; ZVSI: Social Vulnerability Index; ZUE: percentage unemployed; ZFHH: percentage of female heads of household (matriarchy); ZM: percentage of civil and/or religious marriage; ZCAT: percentage of Catholics; ZEVA: percentage of Evangelicals; ZWRELI: percentage of the population that do not follow any religion; ZURB: percentage of the urban population; ZRUR: percentage of the rural population; ZSUS: percentage of population covered by the Unified Health System; ZHIV: average of mortality rate from Human Immunodeficiency Virus; ZMMR: maternal mortality rate; ZMCC cervical cancer mortality rate.

DISCUSSION

This study has some limitations inherent to the used methodology. The possibility of ecological fallacy cannot be excluded, since an association observed between aggregates does not necessarily mean that the same association occurs in an individual level[23]. The low construct validity is another possibility that cannot be ruled out, because not all explanatory outcomes of the variables may have been included in the methodology used[24]. In order to reduce some of these limitations, this study worked with variables available in several national databases and may present differences in quality inherent to the use of indirect estimates[25].

The results of the present study show a very uneven distribution of the femicide rates per 100 thousand women in Sergipe's municipalities in the period studied, whose rates standardized ranged between 11.74 deaths/100,000 women and 87.80 deaths/100,000 women (Figure 1). In order to adjust differences in the population's distribution by sex and,

Table 2. Spatial multiple regression model of femicide rates standardized by 100 thousand women in Sergipe's municipalities and associated factors, between 2013–2017.

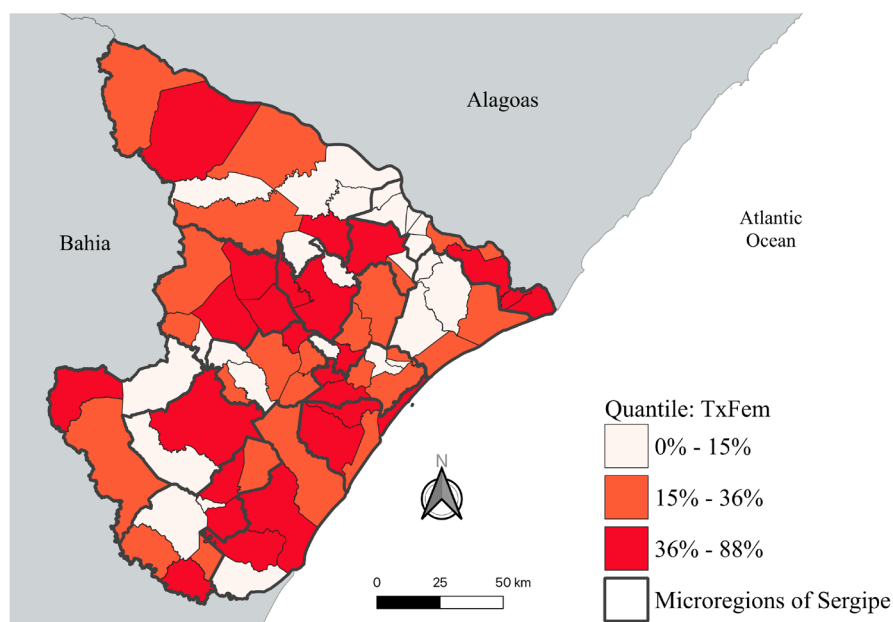| Variables	Coefficients	Standard error	t	p-value
Constant	-1.1329	0.557672	-2.03154	0.04594
Matriarchy	0.00914008	0.00359773	2.54051	0.01326
MHDI	4.35668	1.64747	2.64447	0.01006
GINI	-3.18472	1.06176	-2.99946	0.00373

Figure 1. Femicide rates per 100 thousand female inhabitants, in Sergipe's municipalities, in the period 2013–2017, according to tercile.

7

consequently, a possible confounding effect of the latter on the femicide rates in the municipalities of Sergipe, the direct method of standardization of these rates was employed[26], considering there is a possibility of increase or reduction of the female population to the detriment of the male population in some municipalities. In addition, the selection of women's deaths from aggression with a femicide proxy variable could overestimate this phenomenon. However, a 24% of underreporting deaths in the Northeast region of Brazil should be expected[2,17,27], which could compensate for underreporting or even the ill-defined diagnosis of the death cause due to female aggression.

There was a predominance of significant spatial groupings of femicide rates in the central Sergipe region (Figure 2), which was confirmed by LISA (Figure 3). Studies also show the possibility of some peculiar contexts in the central region of Sergipe, despite no spatial dependence on the femicide rates in the Sergipe's municipalities in 2017[28]. However, Grana[29] and Meneghel and Portella[30] suggest that the incidence of femicide is higher in urban agglomerations and cities with a higher population density. It is known that the scenarios of femicides are diverse and present peculiar geographical contexts that are associated with the female gender[30]. There is an increase in femicide in places where there is a predominance of patriarchal culture, an indelible mark of Sergipe society[14,31,32]. This fact could be observed in the groupings of municipalities in Sergipe that presented spatial autocorrelations of the "high-high" type. In these agglomerations there is intense livestock activity,
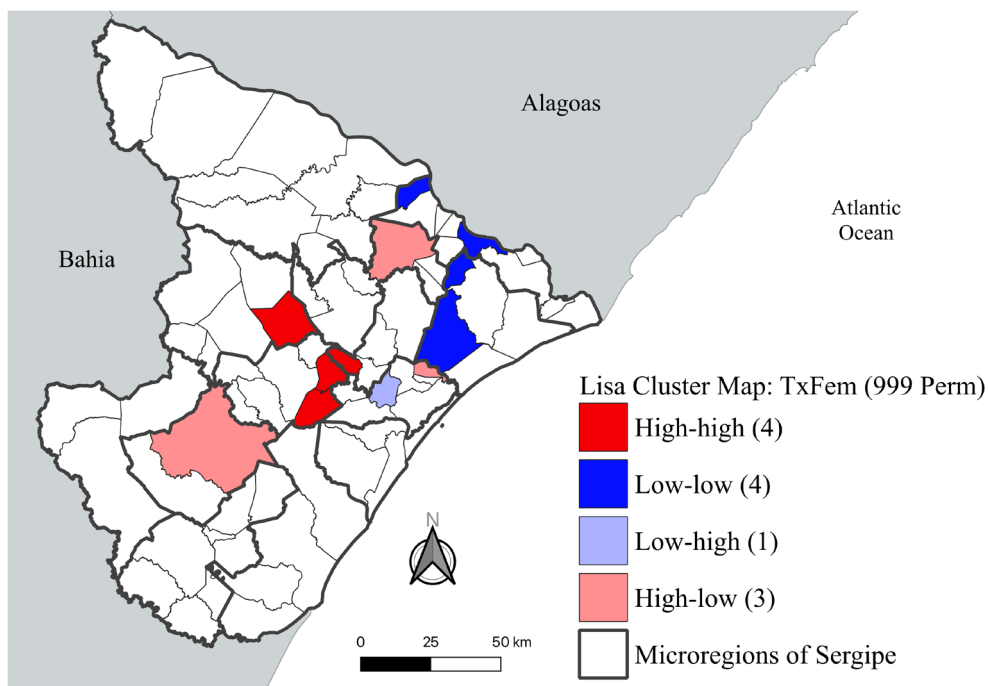

Figure 2. Moran's dispersion map for the femicide rates per 100 thousand inhabitants, in Sergipe's municipalities, in the period 2013–2017.
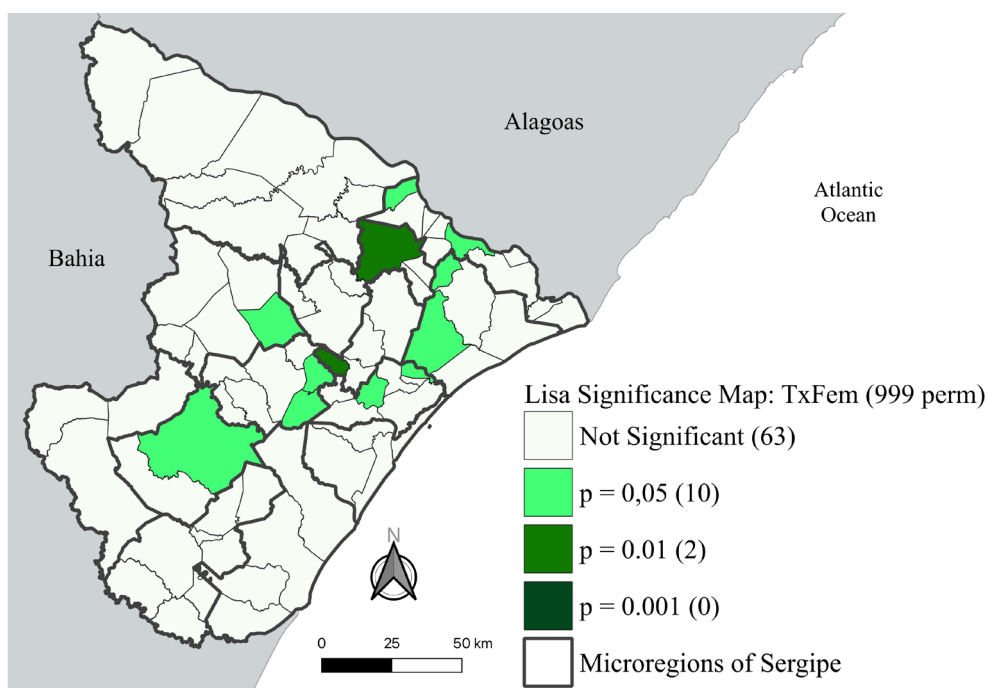
Figure 3. Identification of the occurrence of significant clusters, based on the analysis of the local Moran index, for the rates of femicide per 100 thousand inhabitants, in Sergipe's municipalities, in the period.

with appreciation of male gender roles, in which courage, strength and virility of men are considered essential to work with cattle, usually extended to gender relations and daily life. Similar conditions were found in other regions of Brazil that also have this economic matrix and still maintain strong traditional patriarchal values and submission of women to men[33].

The MHDI was directly associated with the femicide rates in the multiple spatial regression. This fact makes evident the contradiction between the increase of femicide in places with higher human development rates[30,34]. These results are contrary compared to other studies, which describe an inverse relationship between the occurrence of femicide with economic development and the quality of life of the population, respectively[35].

The income concentration, estimated from the GINI index, showed an inverse association with the femicide rates in the final spatial model. Therefore, places with the lowest social inequality present the highest femicide rates. This result is contradicting the findings of Leite et al.[35], which reported the presence of a direct relationship between social inequality and femicide rates. However, in the same study, it is reported, in a peculiar way, that there are some regional exceptions to the trends of social inequality, such as in the Espírito Santo State, which presented better indicators of inequality and high indicators of female mortality rates due to aggression compared to the other Brazilian States analyzed[35]. It is noteworthy that although socioeconomic issues are linked to femicide, the factors that permeate

violence in general go beyond poverty and social inequality. This is reinforcing the multi-factorial nature of violence against women, resulting from the interaction of individual, relational, social, cultural, and environmental factors[35,36].

The matriarchy was positively associated with femicide rates in Sergipe's municipalities in the studied period. Hence, the change in traditional gender roles is a potential generator of conflicts for challenging the patriarchal thinking of society[2,3]. Thus, the achievement of women's socioeconomic autonomy in patriarchal societies is able to tension traditional gender patterns, increasing the risk of femicide[37,38].

In this context, it is clear that despite the socioeconomic condition being closely related to femicide, this phenomenon has multifactorial characteristics that result from the interaction between individual, relational, social, cultural and environmental conditions[1]. Femicide has its roots in gender inequality, presenting diverse contexts that obey distinct social dynamics and are peculiar to the geographic context of origin.

This is the first study that analyzed the factors associated with spatial clusters of femicide in a geographic space where there is a predominance of patriarchal culture. Although public policies to combat femicide have already completed more than a decade in Brazil, this study presents a very uneven distribution of femicide rates that showed a direct association with human development and matriarchy, and an inverse association with concentration of income. These findings reinforce the fact that violence against women is a multifactorial phenomenon, resulting from the interaction of individual, relational, social, cultural, and environmental factors. Thus, it is imperative to carry out further studies in order to unravel the possible factors that predispose high rates of femicides in in the municipalities of the State of Sergipe. Local redirection of Brazilian public policies may be needed to combat femicide, since it has its roots in gender inequality, with different contexts that obey social dynamics and peculiarities to the geographical context of its origin.

REFERENCES

1. Krug E, Dahlberg L, Mercy J, Zwi A, Lozano R. Informe mundial sobre la violencia y la salud. Rev Inst Med Trop S Paulo 2003; 45(3): 130. https://doi.org/10.1590/s0036-46652003000300014

2. Meneghel SN, Hirakata VN. Femicídios: homicídios femininos no Brasil. Rev Saúde Pública 2011; 45(3): 564-74. https://doi.org/10.1590/S0034-89102011000300015

3. Meneghel SN, Rosa BAR da, Ceccon RF, Hirakata VN, Danilevicz IM. Feminicídios: estudo em capitais e municípios brasileiros de grande porte populacional. Ciên Saúde Coletiva 2017; 22(9): 2963-70. https://doi.org/10.1590/1413-81232017229.22732015

4. Waiselfisz JJ. O mapa da violência 2015: homicídios de mulheres no Brasil [Internet]. FLACSO; 2015 [accessed on May 14, 2020]. Available at: https://www.onumulheres.org.br/wp-content/uploads/2016/04/MapaViolencia_2015_mulheres.pdf

5. Instituto de Pesquisa Econômica Aplicada (IPEA). Atlas da Violência 2019 [Internet]. Brazil: IPEA; 2019 [accessed on May 14, 2020]. Available at: http://www.ipea.gov.br/portal/index.php?option=com_content&id=34784&Itemid=432

6. Meneghel SN, Mueller B, Collaziol ME, Quadros MM de. Repercussões da Lei Maria da Penha no enfrentamento da violência de gênero. Ciên Saúde Coletiva 2013; 18(3): 691-700. https://doi.org/10.1590/S1413-81232013000300015

7. Brasil. Lei Maria da Penha. Lei nº 11.340, de 7 de agosto de 2006 [Internet]. Brasil, 2006 [accessed on May 14, 2020]. Available at: http://www.planalto.gov.br/ccivil_03/_ato2004-2006/2006/lei/l11340.htm

8. Porto RTC. A implementação das práticas restaurativas na prevenção ao feminicídio enquanto política pública para os homens autores de violência de gênero no Brasil [thesis on the Internet]. Santa Cruz do Sul: Universidade de Santa Cruz do Sul; 2016. [accessed on May 14, 2020]. Available at: https://repositorio. unisc.br/jspui/handle/11624/1051

9. Osava M. Mulheres-Violência: Lei brasileira ainda não evita mortes [Internet]. IPS/Envolverde; 2019 [accessed on Nov. 6, 2019]. Available at: http://www.ipsnoticias. net/portuguese/2009/03/america-latina/mulheres-violencia-lei-brasileira-ainda-nao-evita-mortes/

10. Brasil. Lei do Feminicídio. Lei nº 13.104, de 9 de março de 2015 [Internet]. Brasil; 2015 [accessed on May 14, 2020]. Available at: http://www.planalto.gov.br/ ccivil_03/_ato2015-2018/2015/lei/L13104.htm

11. Teles MVS. A Lei do Feminicídio e a promessa de redução da violência letal contra a mulher: o caminho do reconhecimento do direito da mulher. Rev UFG 2017; 17(21): 8-26. https://doi.org/10.5216/revufg. v17i21.51712

12. Campbell JC, Glass N, Sharps PW, Laughon K, Bloom T. Intimate partner homicide: Review and implications of research and policy. Trauma Violence Abuse 2007; 8(3): 246-69. https://doi.org/10.1177/1524838007303505

13. Carcedo A. No Olvidamos Ni Aceptamos: Femicidio En Centroamérica 2000-2006. Cefemina y Horizons; 2010.

14. Cachapuz R. Da família patriarcal à família contemporânea. Rev Jurídica Cesumar 2004; 4(1): 69-77.

15. Mello JC de. Mulheres na jurisprudência sergipana: a desembargadora Clara Leite em Sergipe e sua trajetória. Interfaces Científicas Direito 2014; 3(1): 95-106. https:// doi.org/10.17564/2316-381x.2014v3n1p95-106

16. Costa MC da, Lopes MJM, Soares J dos SF. Violence against rural women: gender and health actions. Esc Anna Nery 2015; 19(1): 162-8. https://doi. org/10.5935/1414-8145.20150022

17. Instituto Brasileiro de Geografia e Estatística. Estatísticas do Registro Civil 2009 [Internet]. Brazil: Instituto Brasileiro de Geografia e Estatística; 2010 [accessed on July 6, 2019]. Available at: http://www. ibge.gov.br/home/presidencia/noticias/imprensa/ ppts/0000000205.pdf

18. Andrade CB de, Santos AJ da R, Cruz F dos SL, Santos GT, Vieira IMP, Melo JMG, et al. Vulnerabilidade social no Estado de Sergipe. In: Costa MA, Margut BO, editors. Atlas da vulnerabilidade social nos municípios brasileiros [Internet]. Brazil: IPEA; 2015 [accessed on May 14, 2020]. p. 65-109. Available at: http://repositorio.ipea.gov.br/ bitstream/11058/8908/1/Vulnerabilidade Sergipe.pdf

19. Brasil. Ministério da Saúde. DATASUS. Informações de Saúde: Estatísticas Vitais Mortalidade e Nascidos Vivos [Internet]. Brazil: Ministério da Saúde; 2020 [accessed on July 25, 2016]. Available at: http://www2.datasus. gov.br/DATASUS/index.php?area=0205

20. Instituto Brasileiro de Geografia e Estatística. Cidades@ [Internet]. Brazil: Instituto Brasileiro de Geografia e Estatística; 2020 [accessed on Feb. 4, 2020]. Available at: http://cidades.ibge.gov.br/xtras/perfil. php?codmun=510790

21. Druck S, Carvalho S, Câmara G, Monteiro A. Spatial Analysis and Geoprocessing. Spatial Analysis of Geographic Data. Brazil: EMBRAPA; 2004.

22. Anselin L. Exploring spatial data with GeoDaTM: a workbook [Internet]. Urbana: Center for Spatially Integrated Social Science; 2005 [accessed on May 14, 2020]. Available at: https://www.geos.ed.ac. uk/~gisteac/fspat/geodaworkbook.pdf

23. Szklo M, Javier-Nieto F. Epidemiology: Beyond the Basics. 3rd ed. Burlington: Jones & Bartlett; 2012.

24. Schwartz S. The fallacy of the ecological fallacy: the potential misuse of a concept and the consequences. Am J Public Health 1994; 84(5): 819-24. https://doi. org/10.2105/AJPH.84.5.819

25. Frias PG, Pereira PMH, Andrade CLT, Szwarcwald CL. Sistema de Informações sobre Mortalidade: estudo de caso em municípios com precariedade dos dados. Cad Saúde Pública 2008; 24(10): 2257-66. https://doi. org/10.1590/S0102-311X2008001000007

26. Beaglehole R, Bonita R. Basic Epidemiology. 2nd ed. São Paulo: Santos; 2002.

27. Soares-Filho AM, Souza M de FM de, Gazal-Carvalho C, Malta DC, Alencar AP, Silva MMA, et al. Análise da mortalidade por homicídios no Brasil. Epidemiol Serv Saúde 2007; 16(1): 7-18. https://doi.org/10.5123/ s1679-49742007000100002

28. Marques WTS, Santos SM dos, Santos M de S, Oliveira MGD de, Nery FS. Distribuição espacial do feminicídio no estado de Sergipe [Internet]. In: Congresso Internacional de Enfermagem, 1., 2019. UNIT; 2019 [accessed on May 14, 2020]. Available at: https://eventos.set.edu. br/index.php/cie/article/view/11335

29. Grana SJ. Sociostructural considerations of domestic femicide. J Fam Violence 2001; 16: 421-35. https:// doi.org/10.1023/A:1012229011161

30. Meneghel SN, Portella AP. Feminicídios: conceitos, tipos e cenários. Ciên Saúde Coletiva 2017; 22(9): 3077-86. https://doi.org/10.1590/1413-81232017229.11412017

31. Leão LH da C, Vasconcellos LCF de. Cadeias produtivas e a vigilância em saúde, trabalho e ambiente. Saúde Soc 2015; 24(4): 1232-43. https://doi.org/10.1590/ S0104-12902015136460

32. Godoi H, de Mello ALSF, Caetano JC. [An oral health care network organized by large municipalities in Santa Catarina State, Brazil]. Cad Saúde Pública 2014; 30(2): 318-32. https://doi.org/10.1590/0102-311X00084513

33. Leites GT, Meneghel SN, Hirakata VN. Female homicide in Rio Grande do Sul, Brazil. Rev Bras Epidemiol 2014; 17(3): 642-53. https://doi.org/10.1590/1809-4503201400030006

34. Faludi S. Backlash: o contra-ataque na guerra não declarada contra as mulheres. Rio de Janeiro: Rocco; 2001.

35. Leite FMC, Mascarello KC, Almeida APSC, Fávero JL, Santos AS, Silva ICM, et al. Análise da tendência da mortalidade feminina por agressão no Brasil, estados e regiões. Ciên Saúde Coletiva 2017; 22(9): 2971-8. https://doi.org/10.1590/1413-81232017229.25702016

36. Dahlberg LL, Krug EG. Violência: um problema global de saúde pública. Ciên Saúde Coletiva 2006; 11(Suppl.): 1163-78. https://doi.org/10.1590/S1413-81232006000500007

37. Gartner R, Baker K, Pampel FC. Gender Stratification and the Gender Gap in Homicide Victimization. Soc Probl 1990; 37(4): 593-612. https://doi.org/10.2307/800584

38. Schraiber LB, Gomes R, Couto MT. Homens e saúde na pauta da Saúde Coletiva. Ciên Saúde Coletiva 2005; 10(1): 7-17. https://doi.org/10.1590/S1413-81232005000100002