

Clinical Signature among Victims of Intimate Partner Violence: A Study using Text Classification Tools

Luciane Maria Both¹, Lúcia Helena Machado Freitas² and Ives Passos³

¹ Federal University of Rio Grande do Sul

Received: 8 December 2019 Accepted: 5 January 2020 Published: 15 January 2020

Abstract

Introduction: Intimate partner violence is a major public health problem and a violation of women's human rights. It is important to explore the speech of the victim at the time of the complaint. Method: It is a text classification study with a word cloud analysis technique, complementing the qualitative analysis. The sample is fifty-six women victims of self-reported domestic violence, who came from a public service in South of Brazil. Results: A word cloud was developed from the speech of the 56 participants. Discussion: The women's discourse in the interviews had focused on understanding what had really happened in their relationship, reporting their abusive situations. Studies using this technique benefit from including heterogeneous patients considering their idiosyncrasies to develop a complex non-linear pattern relating predictors to the clinical outcome.

Index terms— intimate partner violence, word cloud, qualitative research.

1 Introduction

Violence against women, particularly intimate partner violence (IPV) is a major public health problem and a violation of women's human rights. Worldwide, 35% of women who have been in a relationship have experienced physical and/or sexual violence by their intimate partner. Based on World Health Organization data, women's lifetime exposure to intimate partner violence is associated with myriad health outcomes, like fatal outcomes, lead to injuries, depression, post-traumatic stress and other anxiety disorders, sleep difficulties, eating disorders, and suicide attempts (WHO, 2017). Not surprisingly, IPV is the second most common risk factor for disability-adjusted life years globally in women aged 20-24 years (Mokdad, 2016).

IPV is challenging to identify and address. Healthcare professionals play a significant role in identifying women who are usually exposed to domestic violence, identifying the signs of violence, protecting victims from experiencing violence again, and providing support to victims (Yaman et al., 2012). Considering the significance of the issue, it is important to explore the speech of the victim at the time of the complaint, what are the most representative aspects in his speech, since it has been about violence for years. Why did you report it now? Which treatment is best suited to your needs?

We began to explore the victim's discourse to develop a model to understand the real needs of these victims at the time of reporting. Thus, patients benefit from more accurate treatment plans, avoiding prolonged periods of "trial and error" seeking the correct treatment to avoid revictimization, because women victims of domestic violence have difficulties in adhering to some treatment. The present study aims to analyze the text classification with word cloud as a tool to understand the pattern of patient functioning, complementing the qualitative analysis.

2 II.

3 Methods a) Study design

It is a text classification study with a word cloud analysis technique, complementing the qualitative analysis. It is complementary to a larger research, still in progress.

4 b) Sample

Fifty-six women victims of self-reported domestic violence, who came from a public service in South of Brazil. We included all women who were present on collection days in December 2017 and agreed to participate in the study.

5 c) Instrument

We collect sociodemographic data from women such as: age, schooling level, family income, time of marital relationship, living with, use of drugs, existence of parental violence (transgenerationality of violence), among others. We also conducted the Operationalized Psychodynamic Diagnosis (OPD-2) Clinical Interview (Task Force, 2016). It is a semi-structured interview with specific interviewing tools for the exploration of each axis: I) "Module for the Evaluation of Domestic Violence OPD" proposed by the Chilean researcher Carla Crempien in 2009 in her PhD thesis (Crempien, 2009(Crempien, , 2012)) and adapted to Brazil (Both et al. 2019), II) dysfunctional interpersonal pattern, III) intrapsychic conflicts, IV) structural functions (Task Force, 2016).

6 d) Data analysis

Python code was used as a base, which is available through the link <https://www.geeksforgeeks.org/generating-word-cloud-python/>. All prepositions and conjunctions were removed for the construction of the cloud.

III.

7 Results

8 a) Study population

The sample had normal distribution ($p < 0.05$). The participants were 56 women aged 18-65 years (mean: 30, 07 years) who educational levels ranged from high school, income between 1 and 2 salaries. Table 1 presents the socio-demographic characteristics of the participants. The length of the marriages was in the range of 1-30 years, and 46, 4% were separated in less than 6 months (Table 2). Duration of violence is described in Table 3. Note. Income: 1 salary is a basic remuneration to the worker. Religion: Godless is the person who do not believe in God. Spiritism is the person who believe in life after death. Umbanda is the person who has several cults influenced by Indians.

9 Discussion

According to Wild and collaborators (2018), evidence suggests that knowledge and skills rarely translate international guidelines and sustainable good practice. It is necessary to change support training and health leadership. For example, the National Action Plan on Gender-based Violence in Timor-Leste for training of trainers (SEM, 2017), WHO handbook for engaging health (WHO, 2017). Therefore, professionals and researchers need to understand the real needs during the reception and identification of women suffering from IPV.

The women's discourse in the interviews had focused on understanding what had really happened in their relationship, reporting their abusive situations. In this sense we highlight the words "problem", "people" referring to the couple, "he", "his", what was said ("said"), the children involved ("son", "daughter", "child").

All women referred to the "beginning" of the relationship as different, whose husband was affectionate and caring, but over time this behavior changed. The husband had jealous and controlling behavior. This aspect is observed in the cycle of violence. Intimate partner violence tends to be systematic and chronic, the maltreatment goes through cycles in which violence episodes alternate with remorse and recompense; this has been described as the "cycle of violence". IPV increases on severity along time (Walker, 2016).

In this sense, they concentrate part of the discourse reporting the cause ("cause") of the violence. They attributed her husband's use of alcohol and drugs and her husband's jealousy that provoked aggression in his behavior. According to Zacan et al. (2013) and Crempien (2009) husband's drug use and jealousy is a relevant factor in IPV. This control is called psychological violence (Brasil, 2006). Women who suffered psychological violence reported significantly more controlling behaviors from their partners than nonvictims. And from a clinical perspective, it has been reported its impact on women's mental health, and its associations with depression, anxiety and posttraumatic stress disorder (García-Moreno, Jansen, Ellsberg, Heise, et al, 2006). The cause is also noted by the word "think" in the word cloud, in which participants tried to exploit partner violence.

Research suggested that social support is associated with less severe IPV (Schultz, Walls, & Grana, 2019, Crempien, 2012), specially with family (Wright, 2015). However, it is observed that the victim's speech was organized around the husband (words "he", "his", "father" of the children). Little said too much social

relationships with friends or family. Another prevalent speech was the word "mother", but they referred in a negative sense, angry at early abandonment, lack of support. Also, companions limit them in relation to having a job, where they remain focused on raising children at home (Blanchard et al., 2018).

Studies point to the transgenerationality of violence, whose father's perpetration of violence against the mother and child (Chiesa et al., 2018), with a cooccurrence rate of 75% (range 11-97%; Jouriles, McDonald, Slep, Heyman, & Garrido, 2008). There are many consequences for children exposed to IPV in mental and behavioral health (Johnson et al., 2002, Lapierre, 2010, Crempien, 2012).

Another word that stood out in the word cloud was the word "fear." The male perspective is characterized by abusive and coercive physical or nonphysical conduct, with recognizable inequality of powers and play of forces. And regarding female behavior, there is the presence of fear with response of avoidance, adaptation and submission (Crempien, 2009; Blanchard et al., 2018). IPV presents with a slow and silent onset without physical aggression and gradually progresses to actions with greater intensity and humiliation (Leôncio et al., 2008). However, violence can be aggravated due to women's shame in reporting, lack of educational means and access to legal information and lack of assistance and protection (Signori, & Madureira, 2007). In this sense, it is necessary to combine effective assessment practices with preventive measures, such as psychoeducation and other screenings.

V. The aim of this study was to analyze the text classification with word cloud as a tool to understand the pattern of patient functioning, complementing the qualitative analysis. Thus, it was observed that it was possible to explore various questions of the participants using the word cloud.

10 Text Classification Tools

11 VI. Implications for Clinical Practice and Public healthy

According to a meta-analysis, there is an association between IPV and mental health problems domestic violence are post-traumatic stress disorder, anxiety disorder, and depression (Cengiz et al., 2014). High levels of IPV are associated with moderate suicide risks (Kavak et al., 2018).

During the reception of women, it is important to differentiate episodes of recent violence and violence that has occurred historically in women's lives, the duration and severity of IPV, risks of alcohol and other substance use, support network (Bacchus, Ranganathan, Watts, Devries, 2018). IPV is associated with a history of childhood trauma. Abusive experiences during childhood predispose victims to a higher risk of later revictimization. Thus, previous traumas resurface in current traumas that need to be elaborated and overcome dependence valuing their self-esteem (Sahin, Timur, Ergin, Taspinar, Balkaya, Cubukcu, 2010).

VII.

12 Conclusion

This study was bold because it used text classification as a method of qualitative analysis. It was possible to understand the pattern of patient functioning from the text classification tool. Of particular importance to the population of this study, more research using word cloud to understand the mechanisms by which IPV may influence mental health.

A limitation of this study is its cross-sectional nature which impedes the establishment of temporal relations between the studied variables or the study of the self capacities, later to victims' reparation therapy and interdisciplinary interventions. Another limitation is the small sample size, where there are no subgroups to compare variables.

The risk for IPV and the ability to buffer effects of traumatic stressors on health outcomes is higher when the discourse of victim focuses only on the traumatic event. It is necessary to accommodate the patient's demand to understand the situation of violence, elaborate these issues and insert different interests (work, protection services, support network). Thus, it was possible to contribute to the enrichment of their difficulties and the treatment obstacles. Working through with the victim on these aspects, could lead to a more complete and realistic perception of herself and the others', as well as promoting her reflective function and affective regulation.

The violence or a consequence of it represents internal obstacles of the victim to regulate her emotional experience and stress. The treatment could contribute to the management in a differentiated way, diverse self capacities. Future research is recommendable to include a larger number of participants in order to go further in the study of these possible associations. Likewise, longitudinal studies are interesting to examine changes in self capacities during interventions.

13 VIII.

14 Ethical Observations

15 Conflicts of interest:

There are no conflicts of interest.

1

Category	Subcategory	Women	Men
Age	18 to 20 years old	8 (14,3%)	3 (5,4%)
	21 to 25 years old	16 (28,6%)	5 (8,9%)
	26 to 30 years old	8 (14,3%)	16 (28,6%)
	31 to 35 years old	9 (16,1%)	13 (23,2%)
	36 to 40 years old	8 (14,3%)	4 (7,1%)
	41 to 45 years old	2 (3,6%)	5 (8,9%)
	46 to 50 years old	3 (5,4%)	5 (8,9%)
	51 to 55 years old	1 (1,8%)	1 (1,8%)
	56 to 60 years old	1 (1,8%)	2 (3,6%)
	61 to 65 years old	0	2 (3,6%)
Race	White	37 (66,1%)	35 (62,5%)
	Black	21 (21,4%)	13 (23,3%)
	Brown	6 (10,7%)	7 (12,5%)
	Indigenous	1 (1,8%)	1 (1,8%)
	Illiterate	0	1 (1,8%)
Scholarity	Incomplete elementary school	15 (26,8%)	17 (30,4%)
	Complete primary education	6 (10,7%)	6 (10,7%)
	Incomplete high school	8 (14,3%)	7 (12,5%)
	Complete high school	22 (39,3%)	22 (39,3%)
	Incomplete higher education	3 (5,4%)	1 (1,8%)
	Complete higher education	1 (1,8%)	2 (3,6%)
	Postgraduate studies	1 (1,8%)	0
	None	13 (23,2%)	8 (14,3%)
Income	Less than 1 salary	8 (14,3%)	1 (1,8%)
	Between 1 and 2 salaries	31 (55,4%)	35 (62,5%)
	Between 3 and 6 salaries	2 (3,6%)	5 (8,9%)
	Between 7 and 12 salaries	1 (1,8%)	2 (3,6%)
	More than 12 salaries	1 (1,8%)	4 (7,1%)
Religion	Godless	22 (39,3%)	26 (46,4%)
	Catholic	19 (33,9%)	15 (26,8%)
	Spiritist	4 (7,1%)	3 (5,4%)
	Afro-Brazilian	3 (5,4%)	6 (10,7%)
	Evangelical	0	6 (10,7%)
Addiction	Alcohol	3 (5,4%)	25 (44,6%)
	Drug	2 (3,6%)	0
	Tobacco	8 (14,3%)	7 (12,5%)
	Marijuana	1 (1,8%)	7 (12,5%)

Figure 2: Table 1 :

2

Category	Subcategory	Women
Type of relationship	Date	1 (1,8%)
	Dating	9 (16,1%)
	Marriage	5 (8,9%)
	Stable union	8 (14,3%)
	Divorced	7 (12,5%)
Time of relationship	Separated in less than 6 months	26 (46,4%)
	Less than 6 months	3 (5,4%)
	Between 6 months and 1 year	6 (10,7%)
	Between 1 and 2 years	11 (19,6%)
	Between 3 and 5 years	13 (23,2%)
	Between 6 and 10 years	15 (26,8%)
	Between 11 and 15 years	2 (3,6%)
	Between 16 and 20 years	4 (7,1%)
	Between 21 and 30 year	2 (3,6%)

Figure 3: Table 2 :

3

Category	Frequency
< 6 months	18 (32,1%)
6-24 years	8 (14,3%)
2	

Figure 4: Table 3 :

.1 Acknowledgment

This study was supported by the Legal Medical Department of Rio Grande do Sul, especially by Dr. Anelita Rios, who invited and made collection possible at the institution.

.2 Funding information

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior -Brasil (CAPES) -Finance Code 001.

- [Blanchard ()] 'A community-based qualitative study on the experience and understandings of intimate partner violence and HIV vulnerability from the perspectives of female sex workers and male intimate partners in North Karnataka state'. A Blanchard . 10.1186/s12905-018-0554-8. <https://doi.org/10.1186/s12905-018-0554-8> *BMC Women's Health* 2018. 18 p. 66.
- [Zacan et al. ()] 'A violência doméstica a partir do discurso de mulheres agredidas'. N Zacan , V Wassermann , G Q Lima . *Pensando Famílias* 2013. 17 (1) p. .
- [Crempien ()] *Adaptación específica del Eje I OPD para la evaluación de mujeres que sufren violencia en la pareja. Módulo de Evaluación de Violencia Doméstica*, C Crempien . 2009. (No press)
- [Johnson et al. ()] 'Adverse behavioral and emotional outcomes from child abuse and witnessed violence'. R M Johnson , J B Kotch , D J Catellier , J R Winsor , V Dufort , W Hunter . *Child Maltreatment* 2002. 7 (3) p. .
- [Jouriles et al. ()] 'Child abuse in the context of domestic violence: Prevalence, explanations, and practice implications'. E N Jouriles , R McDonald , A M S Slep , R E Heyman , E Garrido . *Violence and Victims* 2008. 23 (2) p. .
- [?ahin et al. ()] 'Childhood Trauma, Type of Marriage and Self-Esteem as Correlates of Domestic Violence in Married Women in Turkey'. N ?ahin , S Timur , A Ergin , A Ta?pınar , N Balkaya , S Çubukçu . *Journal of Family Violence* 2010. 25 p. .
- [Force ()] *Diagnóstico Psicodinâmico Operacionalizado: Manual de diagnóstico*, Task Force . 2016. (indicação e plano de tratamento. Herder)
- [Dili: Secretary of State for the Socio-economic Promotion of Women ()] *Dili: Secretary of State for the Socio-economic Promotion of Women*, 2017-2021. 2017.
- [Cengiz et al. ()] 'Domestic Violence against pregnant women: A prospective study in a metropolitan city'. H Cengiz , A Kanawati , ? Y?ld?z , S Süzen , T Tombul . *?stanbul. Journal Turkish-German Gynecological Association* 2014. 15 (2) p. .
- [Mokdad et al. ()] 'Global burden of diseases, injuries, and risk factors for young people's health during 1990-2013: A systematic analysis for the Global Burden of Disease Study'. A H Mokdad , M H Forouzanfar , F Daoud . *Lancet* 2016. 2013. 387 p. .
- [Souto et al. ()] *Intimate Partner Violence among Older Portuguese Immigrant Women in Canada*, R Q Souto , S Guruge , M A B Merighi , M C P De Jesus . 2019.
- [Chiesaa et al. ()] 'Intimate partner violence victimization and parenting: A systematic review'. A E Chiesaa , L Kallecheyb , N Harlaarc , C R Forda , E F Garridod , W R Bettse , S Maguiref . *Child Abuse & Neglect* 2018. 80 p. .
- [Taherkhani et al. ()] 'Iranian Women's Experiences with Intimate Partner Violence: A Qualitative Study'. S Taherkhani , R Negarandeh , M Simbar , F Ahmadi . 10.5681/hpp.2014.030. *Health Promotion Perspectives* 2014. 4 (2) p. .
- [Brasil ()] *Lei nº 11340, de 7 de agosto de, Brasil* . 2006. 2006. Brasília.
- [De et al. ()] 'Potential use of text classification tools as signatures of suicidal behavior: A proof-of-concept study using Virginia Woolf's personal writings'. A ´ De , G Berni , F D Rabelo-Da-Ponte , D Librenza-Garcia , V Boeira , M Kauer-Sant' Anna , M , Cavalcante Passos , I . *PLoS ONE* 2018. 13 (10) p. e0204820.
- [Kessler ()] 'Predicting suicides after psychiatric hospitalization in US Army soldiers: the Army study to assess risk and resilience in service members'. R Kessler . *JAMA psychiatry* 2015. 72 p. .
- [Crempien ()] *Psychological and relational functioning in Chilean women victims of domestic violence, with different levels of childhood relational adversity. Doctoral thesis submitted to the Faculty of Behavioural and Cultural Studies*, C Crempien . 2012. Heidelberg University in Cooperation with the Pontificia Universidad Católica de Chile and the Universidad de Chile
- [Bacchus et al. ()] 'Recent intimate partner violence against women and health: a systematic review and metaanalysis of cohort studies'. L J Bacchus , M Ranganathan , C Watts , K Devries . 10.1136/bmjopen-2017-019995. *BMJ Open* 2018. 8 p. e019995.
- [Silva et al. ()] 'Representação da violência doméstica contra a mulher: comparação entre discentes de enfermagem'. C D Silva , Vlo Gomes , A D Fonseca , M T Gomes , C B Arejano . 10.1590/1983-1447.%202018.63935. <https://doi.org/10.1590/1983-1447.2018.63935> *Rev Gaúcha Enferm* 2018. 39 p. e63935.

- 211 [Wilda et al. ()] *Responding to violence against women: A qualitative study with midwives in*, K J Wilda , L
 212 Gomesb , A Fernandesc , G Araujod , I Madeirab , L C Matosb , S Mcdonaldd , A Taft . 2018. Timor-Leste.
- 213 [Efe ()] 'Roles and responsibilities of emergency nurses regarding domestic violence against women'. Yaman Efe
 214 , ? . *F?rat Univ Health Sci Med J* 2102. 26 (1) p. .
- 215 [Strengthening health systems to respond to women subjected to intimate partner violence or sexual violence: a manual for health
 216 'Strengthening health systems to respond to women subjected to intimate partner violence or sexual violence:
 217 a manual for health managers'. *Geneva: World Health Organisation* 2017.
- 218 [Lapierre ()] 'Striving to be 'good' mothers: Abused women's experiences of mothering'. S Lapierre . *Child Abuse*
 219 *Review* 2010. 19 (5) p. .
- 220 [Çelik and Ayd?n ()] 'The effect of a course on violence against women on the attitudes of student midwives and
 221 nurses towards domestic violence against women, their occupational roles in addressing violence, and their
 222 abilities to recognize the signs of violence'. A S Çelik , A Ayd?n . *Perspect Psychiatr Care* 2018. p. .
- 223 [Garcia-Moreno et al. ()] 'The prevalence of violence against women: finding from the WHO multi-country study
 224 on women's health and domestic violence'. C Garcia-Moreno , H Jansen , M Ellsberg , L Heise , C Watts .
 225 *The Lancet* 2006. 368 p. .
- 226 [Kavak et al. ()] 'The relationship between domestic violence against women and suicide risk'. F Kavak , Ü
 227 Aktürk , A Özdemir , A Gültekin . *Archives of Psychiatric Nursing* 2018. 32 p. .
- 228 [Wright ()] 'The relationship between social support and intimate partner violence in neighborhood context'. E
 229 Wright . *Crime & Delinquency* 2015. 61 p. .
- 230 [Understanding and addressing violence against women. Pan American Health Organization ()] *Understanding*
 231 *and addressing violence against women. Pan American Health Organization*, [http://www.who.int/](http://www.who.int/reproductivehealth/publications/violence/en/index.html)
 232 [reproductivehealth/publications/violence/en/index.html](http://www.who.int/reproductivehealth/publications/violence/en/index.html) 2017.
- 233 [Gomes et al. ()] 'Violência doméstica contra a mulher: representações de profissionais de saúde'. Vlo Gomes
 234 , C D Silva , D C Oliveira , D F Acosta , C L Amarijo . 10.1590/0104-1169.0166.2608. *Rev. Latino-Am.*
 235 *Enfermagem* 2015. 23 (4) p. .