Depression Associated With Intrafamily Violence in Pregnant Women Treated at a Peruvian Health Center, 2022

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Posted Date: 6 March 2023

doi: 10.20944/preprints202303.0096.v1

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Article

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Abstract: Violence can promote various mental complications such as depression, however, the type of violence that promotes it has not been estimated in detail. The purpose of this study was to assess whether depression is associated with domestic violence in pregnant women treated at a Peruvian health center, 2022. A quantitative, observational, cross-sectional analytical study. A total of 180 pregnant adults who attend the health facility in person were selected. Intrafamily violence was assessed using a questionnaire from the Ministry of Women and Vulnerable Populations of Peru and depression using the Beck Depression Inventory. The study has the approval of the ethics committee of the university and the permission of the head of the health establishment. 36.11% [95%CI: 29.39-43.43] of the pregnant women presented depression and 1.11% severe de-pression; likewise, 41.67% [95%CI: 36.64-49.05] reported having experienced domestic violence. It was identified that presenting domestic violence increases the probability of presenting depression during pregnancy (aPR: 9.89; p<0.001). The associated types of violence were psychological (aPR: 10.44; p<0.001) and physical (aPR: 1.78; p=0.007). There is an association between domestic violence and depression during pregnancy, the types of violence associated being psychological and physical.

Keywords: Violence, Depression, Pregnancy, Primary prevention, Mental health

1. Introduction

Depression is a mental disorder characterized by a lack of interest, feelings of sadness, guilt or lack of self-esteem, sleep or appetite disorders, lack of concentration and a feeling of tiredness; symptoms that are usually attributed to pregnancy during prenatal care and make their detection difficult [1,2]. Reviews in this regard have estimated that the global prevalence is 11.9% [3] although with an increase to 25.6% during the coronavirus pandemic [4]; Likewise, it has been identified that the proportion is higher in low- and middle-income countries, for example, in South America before the pandemic the prevalence was 29% [2] and in Peru values of 30.5% have been reported [5].

Depression during pregnancy could lead to an increased risk of developing preeclampsia and has also been associated with preterm birth; in turn, it can cause greater irritability in the mother and newborn, alterations in sleep patterns, and a greater risk of acquiring insecure attachment, which is associated with violent behavior and learning difficulties [2,6]. A study carried out on the children of women who had severe depressive symptoms found variations in the areas related to inhibition and attention control [7]; which could indicate that in the future they will have a greater risk of suffering from depression and behavioral disorders [7–9].

On the other hand, violence implies any intentional act that can cause trauma, psychological damage, developmental problems, or death [10]. It is estimated that 40% of women in the United States have been victims of sexual violence and 20% present physical violence by their partner [11];

 doi:10.20944/preprints202303.0096.v1

Likewise, a review reported that 25% have experienced some type of violence in the world [12] and values of up to 57% have been identified in African countries [13]. Various complications associated with the types of violence have been documented, ranging from direct injuries such as fractures or lacerations, to obstetric repercussions such as premature birth, low birth weight and small for gestational age [11,14]. however, there is also an underreporting of repercussions on the mental health of the pregnant woman.

Violence during pregnancy can increase the probability of depression, stress, and anxiety, as well as addiction to alcohol or drugs [15,16], however, it is still not clear what type of violence could favor the onset of depression to a greater extent. during pregnancy, which is sought to be elucidated in this study. On the other hand, this research seeks to clarify the phenomenon in a primary care center, which has been identified as a need due to a lack of evidence in this regard [17]. Therefore, the objective of this study is to evaluate whether depression is associated with types of intrafamily violence in pregnant women treated at a Peruvian health center during 2022.

2. Materials and Methods

Quantitative study with cross-sectional analytical design, where the proportion of violence within the groups of participants with depression (cases) and those who do not present this condition (controls) was evaluated. Pregnant women attended at the "Nocheto" Health Center in Lima, Peru, during the period from February to May 2022; The establishment is a health center of the primary level of care of the Ministry of Health, which due to its category provides outpatient obstetric care without the possibility of hospitalization [18].

Pregnant women who present at least one prenatal control in the establishment, who do not have immediate medical attention and are greater than or equal to 18 years of age were included, likewise, those who had been admitted through the institution's emergency area, who presented a mental disability that makes their participation difficult and those who expressly do not wish to be part of the study. Pregnant women of any gestational age who present some degree of depression were considered as cases.

The sampling frame was the daily record of pregnant women who attend the obstetrics service for their prenatal care at the "Nocheto" Health Center. To calculate the sample size, the free software OpenEpi [19] was used, considering a confidence level of 95%, a power of 80%, and a ratio of controls per case of 1. A similar Peruvian study was taken as a reference [20] where the percentage of exposed controls was 61%, while the percentage of exposed cases was 39%. Thus, the calculated sample size was 180 pregnant women. Sampling was probabilistic, simple random.

One of the variables was depression, classified as mild, moderate, and severe, and measured using the "Beck Depression Inventory" (BDI-2), which has already been validated in pregnant women [21]. The Spanish version of the questionnaire was validated in Chile, where it obtained a Cronbach's Alpha of 0.92. [22] On the other hand, the next variable was intra-family violence, classified as physical, psychological, sexual, and patrimonial, evaluated through the data collection form of the Ministry of Women and Vulnerable Populations of Peru [23]. Prior to the execution of the study, a validation of the instrument was carried out, obtaining an approval from experts and a Cronbach's Alpha of 0.779 in a pilot test. Finally, the sociodemographic characteristics of the participants were also evaluated.

Pregnant women were recruited in the waiting room of the outpatient clinic, it was checked that the pregnant women meet the selection criteria and that they will not be seen for at least 20 minutes. During the execution, the objective of the study was explained to them, the benefits they would have as study participants and the procedures to follow if positive results were obtained from the screening for violence and depression. They were asked if they wished to participate, and informed consent was given to them. After having resolved their doubts, the resolution of the questionnaires was carried out.

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Data were analyzed using STATA version 17 software. The association was evaluated using Pearson's Chi Square test, where an association of variables was assumed when p<0.05. The strength of the association was evaluated using the Prevalence Ratio (PR). Finally, it was evaluated if there was confusion or effect modification within the process, for which a multivariate analysis was applied using Poisson Regression.

The study was approved by the Ethics Committee of the Faculty of Medicine of the Universidad Nacional Mayor de San Marcos (official letter 0014-2022) and the approval of the health facility (official letter 041-2022-CSN-MRSA). It was coordinated with the psychology area to be able to refer those people who present violence or depression during the screening, as long as the participant agrees, likewise the main researcher provided information regarding the violence reporting channels of the Peruvian ministry.

3. Results

3.1. Sociodemographic characteristics

180 pregnant women were evaluated, where it was identified that 36.11% [95% CI: 29.38-43.43] presented depression. 18.89% [95%CI:13.79-25.32] presented mild depression, 16.11% [95%CI:11.40-22.27%] moderate depression and 1.11% [95%CI:0.28-4.37%] severe depression. The sociodemographic characteristics of the pregnant women are described in Table 1. It was observed that those who had depression had a greater number of living children (p=0.002) and previous pregnancies (p<0.001). Likewise, those who had depression had less use of contraceptive methods (p=0.002) and planned pregnancies (p=0.001).

Table 1. Sociodemographic characteristics of pregnant women treated in a Peruvian health center, 2022.

Variables		Total	Depression		p *
			Yes	No	
		n (%)	n (%)	n (%)	
Age (years)	(Mean; S.D.)	(27.1; 6.89)	(26.3; 7.23)	(27.4; 6.70)	0.312**
Place of birth	Lima	120 (66.67)	45 (69.23)	75 (65.22)	0.067
	Rest of Peru	51 (28.33)	20 (30.77)	31 (26.96)	
	Foreigner	9 (5.00)	0 (0.00)	9 (7.83)	
Civil status	Married	16 (8.89)	5 (7.69)	11 (9.57)	0.857
	Cohabitant	89 (49.44)	33 (50.77)	56 (48.70)	
	Divorcee	1 (0.56)	0 (0.00)	1 (0.87)	
	Single woman	74 (41.11)	27 (41.54)	47 (40.87)	
Education level	Primary	2 (1.11)	1 (1.54)	1 (0.87)	0.070
	Secondary	139 (77.22)	56 (86.15)	83 (72.17)	
	Higher education	39 (21.67)	8 (12.31)	31 (26.96)	
Number of living children	(Mean; S.D.)	(0.97; 0.99)	(1.28; 1.13)	(0.79; 0.87)	0.002**
Number of pregnancies	(Mean; S.D.)	(2.22; 1.28)	(2.71; 1.55)	(1.93; 1.00)	<0.001**
Used contraceptive methods	No	114 (63.33)	51 (78.46)	63 (54.78)	0.002
	Yes	66 (36.67)	14 (21.54)	52 (45.22)	
Pregnancy was planned	No	145 (80.56)	61 (93.85)	84 (73.04)	0.001
	Yes	35 (19.44)	4 (6.15)	31 (26.96)	
Had family support	No	103 (57.22)	43 (66.15)	60 (52.17)	0.069
	Yes	77 (42.78)	22 (33.85)	55 (47.83)	

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Has a chronic disease	Yes	19 (10.56)	10 (15.38)	9 (7.83)	0.113
	No	161 (89.44)	55 (84.62)	106 (92.17)	
Gestational age (weeks)	(Mean; S.D.)	(25.30; 7.31)	(26.52: 6.91)	(24.60: 7.47)	0.087**

* Assessed using Pearson's Chi Square test. ** Assessed using Student's t-test for independent samples. None of the participants had a disability or used drugs. Foreigner: All the participants were Venezuelan. S.D.: Standard deviation

3.2. Types of violence

It was observed that 41.67% [95% CI: 34.64-49.05%] of the pregnant women attended presented domestic violence during their pregnancy, of which the percentage of physical violence was 4.44% [95% CI: 2.22-8.67%], of violence psychological 40.56% [IC95%:33.58-47.93%], sexual violence 2.22% [IC95%:0.83-5.81%] and patrimonial violence 3.89% [IC95%:1.86-7.97%]. Table 2 shows the types of violence detected. Within the types of intrafamily physical violence, it was observed that the most frequent were "Shoving, throwing to the ground" and "Hair pulling". Within the types of intrafamily psychological violence, it is observed that the most frequent were "Devaluation and/or humiliation" (27.78%), followed by "Screams and insults" in 21.67% and "Rejection" in 10%. It was observed that the type of intrafamily sexual violence in pregnant women that occurred was "sexual harassment" in 2.22%. Finally, it was observed that the most frequent type of intrafamily patrimonial violence in the pregnant women attended was the "Limitation or control of their income" in 2.78%.

Table 2. Types of intrafamily violence in pregnant women treated in a Peruvian health center, 2022.

	n/N	%	[CI95%]
Type of intrafamily physical violence			
Slapping	2/180	1.11	[0.28-4.37]
Pull hair	3/180	1.67	[0.53-5.07]
Pushing, throwing to the ground	3/180	1.67	[0.53-5.07]
Type of intrafamily psychological violence			
Yelling and insults	39/180	21.67	[16.21-28.33]
Racial violence or ethnic-racial insult	9/180	5.00	[2.61-9.37]
Indifference	9/180	5.00	[2.61-9.37]
Rejection	18/180	10.00	[6.37-15.36]
Devaluation or humiliation	50/180	27.78	[21.69-34.82]
Miscellaneous other threats (including harm or death)	1/180	0.56	[0.08-3.88]
Break or destroy things in the house	5/180	2.78	[1.15-6.54]
Continuous surveillance or persecution	2/180	1.11	[0.28-4.37]
Kick out of the house	4/180	2.22	[0.82-5.81]
Type of intrafamily sexual violence			
Sexual harassment	4/180	2.22	[0.82-5.81]
Type of intrafamily patrimonial violence			
Limitation or control of economic income	5/180	2.78	[1.15-6.54]
Limitation of economic resources destined to satisfy needs	2/180	1.11	[0.28-4.37]

n/N: Cases detected out of Total participants. 95%CI: 95% confidence interval.

3.2. Depression associated with intrafamily violence

Table 3 shows the crude association between depression and intrafamily violence during pregnancy, where it is observed that presenting intrafamily violence increases the probability of presenting depression by 9.98 times ($p<0.001$). The same association was found with the type of physical ($p<0.001$; cPR: 2.59), psychological ($p<0.001$; cPR: 10.44) and sexual ($p<0.001$; cPR: 2.89) violence. The association was adjusted by the intervening variables: number of living children,

 doi:10.20944/preprints202303.0096.v1

number of pregnancies, use of contraceptive methods, and planned pregnancy. Given this, it was found that the probability of depression increases when the pregnant woman presents intrafamily violence (RPa: 9.89; p<0.001), physical violence (RPa: 1.78; p=0.007) and psychological violence (RPa: 10.44; p<0.001).

Table 3. Crude and adjusted analysis of the association between depression and intrafamily violence during pregnancy.

	Depression		Crude analysis		Adjusted analysis	
	Yes	No				
	n (%)	n (%)	p *	cPR [95%CI]	p *	aPR [95%CI]
Intrafamily violence						
Yes	57 (87.69)	18 (15.65)	<0.001	9.98	<0.001	9.89
No	8 (12.31)	97 (84.35)	Ref.	[5.05-19.69]	Ref.	[4.66-20.98]
Intrafamily physical violence						
Yes	7 (10.77)	1 (0.87)	<0.001	2.59	0.007	1.78
No	58 (89.23)	114 (99.13)	Ref.	[5.29-20.60]	Ref.	[1.17-2.69]
Intrafamily psychological violence						
Yes	57 (87.69)	16 (13.91)	<0.001	10.44	<0.001	10.44
No	8 (12.31)	99 (86.09)	Ref.	[5.29-20.60]	Ref.	[4.91-22.13]
intrafamily sexual violence						
Yes	4 (6.15)	0 (0.00)	<0.001	2.89	0.322	1.33
No	61 (93.85)	115 (100.0)	Ref.	[2.35-3.54]	Ref.	[0.76-2.33]
Intrafamily patrimonial violence						
Yes	4 (6.15)	3 (2.61)	0.161	1.62	0.355	1.39
No	61 (93.85)	112 (97.39)	Ref.	[0.83-3.18]	Ref.	[0.69-2.77]

cPR: Crude prevalence ratio; aPR: Adjusted prevalence ratio; 95%CI: 95% confidence interval. Adjusted analysis with the variables: Number of living children, Number of pregnancies, Use of contraceptive methods and Planned pregnancy. * Assessed by Poisson Regression.

4. Discussion

The results of this study have made it possible to identify the prevalence of depression and the proportion of intrafamily violence, as well as the percentage of each type of violence within a first level care establishment, which better represents the reality of the Peruvian population than go to a general establishment rather than a specialized one such as a hospital [24]. On the other hand, a significant contribution of the study involves not only recognizing how many suffered violence, but also delving into what type of violence, which will make it possible to generate more effective policies in the future [25].

Among the results, it was found that 36% of the pregnant women who participated in the study have depression, which exceeds a recent Peruvian study that reported depression in 30.5% of pregnant women [5] and global indicators before or after. of the pandemic [3,4]. This higher percentage could not only be due to the pandemic, but also to the fact that primary care establishments are more representative of the general population, unlike hospitals where the population usually has serious medical complications [26].

Previous scientific evidence shows that pregnant women who were physically inactive during pregnancy had a 16% higher risk of suffering from prenatal depression [27]. Likewise, “mobile

 doi:10.20944/preprints202303.0096.v1

health" services have been identified in perinatal mental health. The authors mention that it is important to improve these services so that they can provide more comprehensive information and timely help from trained professionals [28]. On the other hand, the United States Preventive Services Task Force recommends that counseling interventions should be applied in women with risk factors for depression, since they found convincing evidence that they help prevent perinatal depression, among the most effective they included cognitive behavioral therapy and interpersonal therapy [29].

It was also found that pregnant women with depression are those who had not previously used contraceptive methods, this statement is related to the absence of pregnancy planning, this coincides with a study carried out in Venezuela in which it was indicated that there was a risk of 1.66 times greater of presenting depression when the pregnancy had not been planned or desired [30].

Nearly half had intrafamily violence, these figures are much higher compared to a study carried out in a Peruvian first-level center, which indicated that at the level of the studied population there was a prevalence of 24.9% of intrafamily violence in pregnant women with depression [31].

The most frequent physical violence in pregnant women is pulling the hair and pushing, throwing them to the ground, which coincides with reports from the Peruvian Ministry of Women (MIMP) in hospitalized puerperal women, which indicates that these were the most frequent types of physical violence. Frequent along with slapping [32]. The most frequent psychological violence in pregnant women is devaluation and/or humiliation and shouting and insults. These data coincide with the MIMP study, which also found a relationship with maternal complications, and this is the type of violence that is reported. presents more regularly [32]. The sexual violence found in pregnant women is sexual harassment that implies being forced by their partners to have sexual relations. This type of violence was the least frequent and coincided with the MIMP study, in which undue touching without consent and non-consensual touching were also added. a case of rape during pregnancy [32].

Having domestic violence (general) increases the probability of depression during pregnancy by 9 times, this figure is alarming due to the consequences that this entails and is even higher than that of a study carried out in Brazil that mentioned that women who had suffered a certain type of violence were 6.74 times more likely to present depressive symptoms [33]. Various studies were reviewed in which evidence was obtained that supports the data obtained, one of the studies was carried out in Egypt with pregnant women in which the relationship between violence exerted by couples and depression was evaluated, they found a great association between both variables, in addition to this they found that the most significant type of violence that caused depression was emotional and sexual [34]. Another study carried out in northern Tanzania also found a relevant association between intimate partner violence and depression, in which it coincides with the present study and considers violence, in any of its types, but mainly physical, as a risk factor. risk that increases the probability of presenting depression during pregnancy [35].

It is necessary to interpret the results of the study based on certain limitations that were encountered during the study. For example, some pregnant women were afraid to participate in the development of the questionnaires because they were afraid that their partners or relatives would have access to their answers, which can cause the proportions of violence and depression to be underestimated; Given this, the potential participants were explained through informed consent that all information collected would be confidential. This underestimation may also occur due to the social desirability bias, where the participants may avoid reporting that they suffer from violence or depression because they are behaviors that are not socially accepted, which is also expected to have been overcome by keeping the data confidential during the study.

5. Conclusions

There is a significant association between depression and intrafamily violence during pregnancy; Likewise, there is an association between depression and the types of physical and psychological violence, but no association was found with sexual and patrimonial violence.

Author Contributions: Conceptualization, X.C.B.; methodology, X.C.B, Z.Z.G. and V.M.A.; software, V.M.A.; validation, X.C.B and Z.Z.G.; formal analysis, V.M.A.; investigation, X.C.B., Z.Z.G. and V.M.A.; resources, X.C.B.; data curation, V.M.A.; writing—original draft preparation, X.C.B., Z.Z.G. and V.M.A.; writing—review and editing, X.C.B, Z.Z.G. and V.M.A.; visualization, V.M.A.; supervision, Z.Z.G.; project administration, X.C.B.; funding acquisition, X.C.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding. The APC was funded by Universidad Privada Norbert Wiener.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of the Faculty of Medicine of the Universidad Nacional Mayor de San Marcos (official letter 0014-2022, obtained on May 20, 2022) and the approval of the health facility (official letter 041-2022-CSN-MRSA, obtained on February 7, 2022).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data **Availability Statement:** Data is readily available at the request from the first author.

Conflicts of Interest: The authors declare no conflict of interest.

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