Perception of Obstetric Violence in a sample of Spanish Health Sciences students: a cross-sectional study

Abstract

Background: Obstetric violence is a problem that has grown worldwide, and a particularly worrying one in Spain. Such violence has repercussions for women, and for the professionals who cause them. Preventing this problem seems fundamental.

Objective: This study evaluated how health sciences students perceived obstetric violence.

Design: A cross-sectional study conducted between October 2019 and November 2020

Participants: A sample of Spanish health sciences students studying degrees of nursing, medicine, midwifery, and psychology.

Methods: A validated questionnaire was used: Perception of Obstetric Violence in Students (PercOV-S). Socio-demographic and control variables were included. A descriptive and comparative multivariate analysis was performed with the obtained data.

Results: 540 questionnaires were completed with an overall mean score of 3.83 points ($SD \pm 0.63$), with 2.83 points ($SD \pm 0.91$) on the protocolised-visible dimension and 4.15 points ($SD \pm 0.67$) on the non-protocolised-invisible obstetric violence dimension. Statistically significant differences were obtained for degree studied ($p < 0.001$), gender ($p < 0.001$), experience ($p < 0.001$), ethnic group ($p < 0.001$), the obstetric violence concept ($p < 0.001$) and academic year ($p < 0.005$). There were three significant multivariate models for the questionnaire's overall score and dimensions.

21 **Conclusions:** Health sciences students perceived obstetric violence mainly as non-
22 protocolised aspects while attending women. Degree studied and academic year might be
23 related to perceived obstetric violence.

24 **Keywords:** Obstetric Violence; Racism; Students; Nursing; Midwifery; Medicine.

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1. Introduction

In 1985, the Declaration of Fortaleza indicated the need to make specific policies about using technology during childbirth (World Health Organization, 1985). A consensus has been reached about these recommendations by multidisciplinary work teams, which are considered applicable to all perinatal services worldwide (World Health Organization, 1985). Nevertheless, it appears that the recommendations are not well-established. The World Health Organization (WHO) refers to the need to respect human rights during childbirth with women entitled to the highest level of care, dignified and respectful attention, and the right to not suffer violence or discrimination (World Health Organization, 2014). The latest WHO publications describe positive birth experiences by specifying that women wish physiological labour and childbirth, feel they are in control, and personal accomplishment from participating in decision making, even if desired and necessary medical interventions are required (World Health Organization, 2018).

Despite national and international recommendations and research outcomes targeted to more respectful sexual and reproductive healthcare for women (Ministerio de Sanidad, 2010; Ministerio de Sanidad Servicios Sociales e Igualdad, 2012; World Health Organization, 2018), an interventionist model that centres on medicalised childbirth predominates in Spain (Mena-Tudela et al., 2021). This model is characterised by medical intervention, with limited involvement of women in decision making while giving birth (Hodnett et al., 2012). The WHO states that research into women's pregnancy and birth experiences indicates a disturbing

picture because women worldwide suffer disrespectful, offensive or careless treatment during childbirth (World Health Organization, 2014).

Worldwide, women-centred approaches, multidisciplinary teams, continuous healthcare, and specialisation show high levels of women's satisfaction and better results in maternity services (Downe et al., 2018; Macpherson et al., 2016; Perriman and Davis, 2016). While this progress was being made, the concept of obstetric violence gained ground. While reaching a consensus about a clear definition of obstetric violence is urged (Briceño Morales et al., 2018; Šimonović, 2019), according to the United Nations (Šimonović, 2019), obstetric violence occurs in a broad context, one of structural inequality, discrimination and patriarchy, which results from lack of education and training and respect for women's equality and their human rights. Other authors have indicated social stratification (Castro, R; Frías, 2019), a low socio-economic level (Santiago et al., 2018), youth, race or women not knowing their rights as possible causes (Grilo Diniz et al., 2018).

The reported obstetric violence rates worldwide are worrying, and perceived obstetric violence figures vary: 21.2% in Italy (Ravaldi et al., 2018) and 28.8% in India (Bhattacharya and Sundari Ravindran, 2018), 75.1% in Ethiopia (Muhabaw Shumye Mihret, 2019), with 38.3% in Spain (Mena-Tudela et al., 2020c). It is necessary to stress that the interventions made while giving birth can have physical, mental and emotional consequences for women (Chattopadhyay et al., 2018; Guillén, 2015; Pérez D'gregorio, 2010). Consequences include Post-traumatic Stress Disorder (PTSD), which affects roughly 5% of new mothers (Bradley, 2017). The risk of postpartum PTSD in Spanish women increases to 13.1%, and is found to be related to obstetric violence (Martínez-Vazquez et al., 2021). There are reports of women having difficulties returning to sexual relationships, rage about and mistrusting relationships

with healthcare professionals, and secondary infertility from fear of suffering obstetric violence (Ministerio de Sanidad, 2010) again. Women may also suffer physical sequela like loss of a uterus after performing an unnecessary caesarean section or dyspareunia after being subjected to episiotomy for no justified reason (Guillén, 2015). These repercussions are documented among women and affect the healthcare personnel who witness such violence. Professionals also suffer symptoms compatible with PTSD (Sadler et al., 2016) as they witness obstetric violence and some even leave their profession because such practices go against their own ethics and dignity (Olza-Fernández and Ruiz-Berdún, 2015).

For these reasons, preventing obstetric violence should be a priority. Prevention can entail training for and raising the awareness of health sciences students about the rights of all women of fertile age to receive respectful evidence-based healthcare and not being careless with their opinions and preferences (Mena-Tudela et al., 2020b; Šimonović, 2019). A previous study on changing perceptions of obstetric violence among students showed that an educational intervention can change students' perceptions. In addition, normalisation of obstetric violence was shown to occur with progression of training and personal obstetric experience (Mena-Tudela et al., 2020b). Understanding health science students' perception of obstetric violence can help to design specific programmes. This study aimed to evaluate how health sciences (medicine, psychology, nursing) students of the Universitat Jaume I (UJI; Spain), and midwifery students from the Valencian School of Health Studies (EVES; Spain), perceived obstetric violence.

2. Methodology

A cross-sectional study was performed with health sciences (UJI and EVES) students between October 2019 and November 2020.

In Spain, nursing and psychology degrees last four academic years, whereas medical degrees takes six academic years, and all are studied at university. To access university, students need to have acquired general knowledge and passed a specific entry test. The students with higher marks can select the studies they wish. Obstetric-gynaecology nursing studies (midwifery) are taught in specialised teaching centres that are answerable to healthcare services. Access to the midwifery specialty involves learning, passing the nursing degree, and then passing an exam to apply for the obstetric-gynaecology specialty call.

2.1 Variables and instruments

The socio-demographic variables were: age, gender, degree studied (medicine, psychology, nursing, midwifery), academic year, healthcare experience in maternity services (yes, no), years experience (< 1 year, 1-4 years, > 4 years), present at women's birth (yes, no), time since attendance at women's birth (< 1 year, 1-4 years, > 4 years), personal experience with pregnancies/births (yes, no), time since pregnancies and births (< 1 year, 1-4 years, > 4 years).

Variables related to how students perceived women's different treatments during pregnancy and childbirth were also included according to their ethnic group, socio-economic status or being an immigrant, along with already knowing the concept of obstetric violence (yes, no). Students' obstetric violence perception was measured by the PercOV-S (Perception of Obstetric Violence in Students) questionnaire (Mena-Tudela et al., 2020a).

2.1.1 The PercOV-S questionnaire

The PercOV-S questionnaire comprises 33 items that measure students' obstetric violence perception on a 5-level Likert scale from 1 (no obstetric violence) to 5 (a lot of obstetric

violence). The maximum score per item and dimension, and the overall score, are 5 points. Higher scores indicate that obstetric violence is more perceived.

During its validation, the PercOV-S obtained a factor analysis that reduced the questionnaire to two dimensions: protocolised-visible obstetric violence, namely those obstetric interventions that tend to be protocolised (like peripheral access, shaving pubis or lithotomy position); non-protocolised-invisible obstetric violence, namely those obstetric interventions that do not tend to be protocolised like Kristeller manoeuvre, using offensive language or lacking respect, which explained 54.47% of variability. Both the overall score and dimensions gave excellent internal consistency (Global: $\alpha=0.936$; protocolised-visible obstetric violence: $\alpha=0.802$; non-protocolised-invisible obstetric violence: $\alpha=0.952$) (Mena-Tudela et al., 2020a). Excellent internal consistency was also obtained in this study - Global: $\alpha=0.923$; protocolised-visible obstetric violence: $\alpha=0.832$; non-protocolised-invisible obstetric violence: $\alpha=0.923$.

2.2 Participants and data collection

Students were invited to participate in this study via email. All proposed variables, and the PercOV-S questionnaire, were structured in Google Forms. All health sciences students (medicine, psychology, nursing, midwifery) were included in the study. The questionnaires with more than 10% of contents left unanswered were excluded. Sample size calculation was completed with the GRANMO programme, which indicated that a sample with 429 individuals sufficed to estimate (95% confidence) a 50% population percentage with a precision of 4 percentage units. A 10% loss percentage was considered.

The study was designed in accordance with Organic Law 03/2018, of 5 December, on Personal Data Protection and Guaranteeing Digital Rights. The principles of the Declaration of Helsinki (charity, no maleficence, autonomy, justice) were respected. The study was approved by the

UJI Deontological Committee (CD/26/2020) and the EVES Obstetric-Gynecology Nursing Unit Area Management.

2.3 Analysis

A descriptive analysis was conducted by calculating means, standard deviations and 95% confidence intervals for the quantitative variables. For the qualitative variables, the distribution of frequencies and percentages were considered. For the bivariate analysis, Mann-Whitney U and Kruskal-Wallis tests were employed to detect relationships between the variables and those related to the PercOV-S questionnaire (global, per dimension and items).

Three multiple linear regressions were performed by taking the PercOV-S questionnaire score and its dimensions as dependent variables. The introduced independent variables were those showing significant differences in the bivariate analysis in relation to the overall PercOV-S questionnaire score and its dimensions. As they were categorical variables, the necessary dummy variables were created to perform the multiple linear regression analysis. The Intro method was used. The F level was set between 0.05 and 0.1. The non-existence of collinearity problems was confirmed by the variance inflation factor ($VIF < 10$). The analysis was performed with version 21 of the Statistical Package for Social Sciences (SPSS). The statistical level of significance was set at $p \leq 0.05$ to compare hypotheses.

3. Results

3.1 The sample's socio-demographic profile

540 questionnaires were collected. Students' mean age was 22.37 years ($SD=5.413$, Range: 18-54 years). Of the whole sample, 82.4% ($n=445$) were female; 39.3% ($n=212$) came from

nursing, 27.6% (n=149) psychology, 21.1% (n=114) midwifery and 12.0% (n=65) medical degrees.

Of all students, 24.8% (n=134) had been on clinical placements or worked in some maternity service; 19.3% (n=104) had been present at a woman's birth, of whom 39.8% (n=66) had seen women being treated differently according to their ethnic group, 31.3% (n=51) their socio-economic status; 34.6% (n=56) perceived women being treated worse during childbirth for being an immigrant; 4.3% (n=23) of the sample had been pregnant and 3.5% (n=19) had given birth themselves. Finally, 56.5% (n=277) already knew the obstetric violence concept. Table 1 shows the sample's socio-demographic and control variables distributed into degrees studied.

3.2 Perception of Obstetric Violence (PercOV-S).

The overall mean PercOV-S questionnaire score was 3.83 points (SD±0.63; 95%CI=3.77-3.89), which indicates moderate obstetric violence perception. The protocolised-visible obstetric violence dimension (including peripheral access, shaving pubis or lithotomy position) obtained a mean score of 2.83 points (SD±0.91; 95%CI=2.76-2.91), which denotes poorly perceived obstetric violence. The mean for the non-protocolised-invisible obstetric violence dimension (including Kristeller manoeuvre, using offensive language or lacking respect) was 4.15 points (SD±0.67; 95% CI=4.09-4.21), which suggests considerable obstetric violence perception.

The results indicated statistically significant differences in the overall questionnaire score, its dimensions, and most items according to degree studied (Table 2). Table 3 offers the descriptive and comparative results for both the dimensions and overall PercOV-S score per

academic year. Table 4 provides the descriptive and comparative results for the dimensions and overall score per socio-demographic and control variable.

3.3 Relation between variables and the PercOV-S questionnaire.

Table 5 outlines the results of the multiple linear regressions. The first multivariate analysis showed that the variables studying medicine or psychology, masculine gender, previous experience in maternity services, being present at a woman's birth between 1-4 years or > 4 years, observing different treatment according to ethnic group and already knowing the obstetric violence concept explained 36.5% of the variance of the overall PercOV-S score ($R^2=0.365$; R^2 adjusted=0.266; estimation error=0.57; Durbin-Watson=1.739; $F=3.667$; $p=0.002$).

In the second multivariate analysis, the variables studying nursing or medicine, being present at a woman's birth < 1 year or > 4 years and already knowing the obstetric violence concept explained 98.7% of the variance in the score for the dimension obstetric violence protocolised-visible ($R^2=0.987$; R^2 adjusted=0.954; estimation error=0.247; Durbin-Watson=1.592; $F=30.325$; $p=0.032$).

The third multivariate analysis demonstrated that masculine gender, studying medicine or psychology, previous experience in maternity services, being present at a woman's birth, already knowing the obstetric violence concept, and noting different treatment for being immigrants explained 19.3% of the variance of the score for the dimension obstetric violence non-protocolised-invisible ($R^2=0.193$; R^2 adjusted=0.126; estimation error=0.6; Durbin-Watson=1.906; $F=2.866$; $p=0.01$).

4. Discussion

This study enabled us to evaluate how health sciences (medicine, psychology, nursing, midwifery) students perceived obstetric violence with the PercOV-S tool (Mena-Tudela et al., 2020a). The overall PercOV-S results indicated a generalised moderate perception, which was substantially lower on the dimension where obstetric violence was protocolised or visible, with a score obtained with considerable obstetric violence perception for the non-protocolised or invisible dimension. This measurement of the health sciences students' baseline obstetric violence perception is key to action.

When examining our results in more detail, students in midwifery (Leal et al., 2018) and nursing degrees reported a higher obstetric perception for almost all items, and for the dimensions and overall questionnaire score, than students studying medicine and psychology degrees. One possible reason is that while medicine students are educated in a more biomedical paradigm, where a biomechanical and medicalised approach towards birth predominates (Hopkins et al., 2018; Twenge, 2009), midwifery and nursing students tend to receive basic training that centres on a salutogenesis paradigm (Malone et al., 2016), where salutogenesis is understood as a concept which postulates that life experiences help to shape the coherence sense from an overall orientation perspective (Mittelmark and Bauer, 2017). Changing the education approach in relation to women's sexual and reproduction health physiology, including breastfeeding, towards a more women-centred approach for medical students could possibly change perceived obstetric violence (Hearn et al., 2019; Hopkins et al., 2018). Hence evaluating the overall perception, and assessing both items and dimensions, could allow specific learning strategies to be devised in less recognised areas like obstetric violence to accomplish improvements in information, education and awareness raising among health sciences students in relation to obstetric violence problems (Swahnberg et al., 2019). This area is a recommendation for future research.

228 The analysis of obstetric violence perceptions per academic year gave very interesting results.
229 We observed for both the nursing and midwifery degrees, academic year was later and more
230 obstetric violence was perceived. Exactly the opposite occurred with medicine, where two
231 important points are relevant: (a) feminisation of midwifery and nursing professions; (b) the
232 normalisation of obstetric violence in students' learning . In this way, women represent 70%
233 of health care workers worldwide and 80% of nurses in most regions (Boniol et al., 2019). In
234 addition, previous studies have found that perceptions of obstetric violence decrease with
235 advancing training (Mena-Tudela et al., 2020b). No significant differences appeared in
236 psychology. Perhaps psychology syllabi do not cover specific aspects related to childbirth and
237 perinatal mental health, which could explain these results.

238 Both midwifery and nursing professions and studies are feminised; that is, a high percentage
239 of their students/professionals are women (Boniol et al., 2019; Hung et al., 2019). It is
240 important to consider this aspect because these women could have had personal obstetric
241 violence experiences and, therefore, more sensitively detect this problem. It is also plausible
242 that although they had not suffered obstetric violence, women may have a more empathic
243 capacity (Esquerda et al., 2016) because they could find themselves in a similar vulnerable
244 situation to those situations indicated in the PercOV-S questionnaire. We should consider
245 possible gender biases in syllabi (Hung et al., 2019). At this point, it is necessary to reflect on
246 the gendered shame concept. Spain has a considerable problem with obstetric violence
247 (Mena-Tudela et al., 2020c), which may become more serious if women who feel shame tend
248 to hide their oppressive experiences from others and experience them alone (Cohen Shabot
249 and Korem, 2018). Unintentionally, the feminisation of health sciences studies can form a
250 silent vicious circle that hinders political struggle or social change (Cohen Shabot and Korem,
251 2018). Obstetric violence is nurtured and fortified by gendered shame (Cohen Shabot and

252 Korem, 2018). Future research should focus on empathy and gendered shame and explore
253 whether these concepts are related to students respond to obstetric violence in health
254 sciences students.

255 This research does not suggest that medical students perform acts of obstetric violence
256 intentionally, but might be influenced by perpetuating existing structural violence through
257 their teaching (Cohen Shabot and Korem, 2018; Farmer et al., 2006).

258 Normalising obstetric violence as part of health sciences students' learning might also be
259 related to the learning paradigm in which students acquire basic university education if
260 obstetric violence is considered part of structural violence. The need for obstetric violence
261 training for health sciences students has been reinforced by others (RODA-Parents in Action,
262 2019; Šimonović, 2019). It is essential for this learning to be received in a positive context so
263 as to not perpetuate obstetric violence.

264 The relational autonomy concept is critical (Cohen Shabot, 2020). This concept attaches
265 importance to relationships when executing autonomy. According to these personal
266 relationships and social links, it is something that is vital and indivisible of a person and,
267 therefore, of the autonomy capacity (Busquets Gallego, 2019). Students are capable of
268 justifying disrespectful and abusive care while women give birth (Rominski et al., 2017). By
269 considering this relational autonomy, research should be conducted into how health sciences
270 students' learning impacts obstetric violence with their tutors, teachers and/or superiors. The
271 traditional hierarchical structure between male doctors and female midwives and nurses still
272 exists in many places. It is necessary to explore how relational autonomy can influence the
273 learning and normalisation of obstetric violence because this kind of autonomy reinforces the

274 horizontality of human relations (Busquets Gallego, 2019). All this discussion appears to be
275 reflected in the obtained multivariate models.

276 We should reflect on how obstetric violence is perceived according to the ethnic group, socio-
277 economic status and/or the immigrant condition of the woman giving birth. Normalising
278 obstetric violence also involves such details because learning also offers more disparities of
279 care to minority groups of women can occur (Bryant et al., 2010; de Oliveira Ribeiro et al.,
280 2020). Indeed female nurses and midwives, and the academy, can no longer be accomplices
281 of silencing structural, individual and ideological racism (Burnett et al., 2020). Remaining
282 silent is not acting neutrally and breaking down racism in the education of future health
283 professionals becomes a professional obligation (Burnett et al., 2020).

284 Although the obtained results might guide educators, the academy and future research, they
285 must be interpreted cautiously because of some limitations. The main limitation lies in
286 collecting data with a self-administered online questionnaire because it can lead to lower
287 response rates. Fewer medical students participated and they could have been influenced by
288 this study being promoted by nurses. This was not a randomised study and was conducted in
289 only two institutions. Despite these limitations, the obtained results are interesting because
290 they reveal that health students consider obstetric violence and also adds value because it
291 indicates future research is needed.

292 **Conclusions**

293 Health Sciences students perceive obstetric violence to different extents depending on
294 whether the violence is protocolised/visible or non-protocolised/invisible. Students' enrolled
295 degree may be related to perceived obstetric violence as nursing and midwifery students
296 obtained higher scores for the PercOV-S questionnaire overall score, dimensions and items.

Medical students score lower on both the overall PercOV-S questionnaire and on the dimensions (protocolised/visible or non-protocolised/invisible). As obstetric violence becomes integrated and normalised while academic years pass by with medical degree students, it should be studied. There is a need to highlight a greater perception of obstetric violence among female students, awareness of the concept of obstetric violence, ethnicity, immigrant status and/or socio-economic status of the woman being treated. These considerations can help to devise specific syllabi to offer obstetric violence training according to the areas where obstetric violence is less perceived.

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Table 1. The sample's socio-demographic and control variables (n=540).

Variable	Total		Nursing		Medicine		Psychology		Midwifery	
	n	%	n	%	n	%	n	%	n	%
Gender										
Masculine	95	17.6	36	17.0	17	26.2	34	22.8	8	7.0
Feminine	445	82.4	176	83.0	48	73.8	115	77.2	106	93.0
Year										
First	241	44.6	49	23.1	19	29.2	86	57.7	87	76.3
Second	119	22.0	73	34.4	8	12.3	11	7.4	27	23.7
Third	121	22.4	55	25.9	21	32.3	45	30.2	-	-
Fourth	46	8.5	35	16.5	4	6.2	7	4.7	-	-
Fifth	8	1.5	-	-	8	1.5	-	-	-	-
Sixth	5	0.9	-	-	5	0.9	-	-	-	-
Experience in maternity services										
Yes	134	24.8	39	18.4	14	21.5	1	0.7	80	70.2
No	406	75.2	173	81.6	51	78.5	148	99.3	34	29.8
Years experience										
< 1 year	72	52.2	28	71.8	7	50.0	37	43.5	72	52.2
1 – 4 years	54	39.1	8	20.5	7	50.0	39	45.9	54	39.1
> 4 years	12	8.7	3	7.7	-	-	9	10.6	12	8.7
Present during woman birth										
Yes	104	22.0	50	23.6	13	2.0	3	2.0	38	82.6
No	368	78.0	162	76.4	52	80.0	146	98.0	8	17.4
Time since woman birth										
< 1 year	32	30.8	26	52.0	4	30.8	-	-	2	5.3
1 – 4 years	55	52.9	17	34.0	7	53.8	2	66.7	29	76.3
> 4 years	17	16.3	7	14.0	2	15.4	1	33.3	7	18.4
Different treatment according to										
Ethnic group	66	39.8	17	26.2	6	20.7	1	25.0	41	61.8
Socio-economic status	51	31.3	13	21.0	7	24.1	2	50.0	29	42.6
Immigrant	56	34.6	13	21.3	9	31.0	1	25.0	33	48.5
Own maternal experience										
Pregnancy	23	4.3	8	3.8	1	1.5	3	2.0	11	9.6
Birth	19	3.5	7	3.3	1	1.5	3	2.0	8	7.0
Time since own pregnancy										
< 1 year	3	13.0	-	-	-	-	-	-	3	27.3
1 – 4 years	7	30.4	2	25.0	-	-	2	66.7	3	27.3
> 4 years	13	56.5	6	75.0	1	100	1	33.3	5	45.5
Time since own birth										
< 1 year	1	5.0	-	-	-	-	-	-	1	12.5
1 – 4 years	6	30.0	1	12.5	-	-	2	66.7	3	37.5
> 4 years	13	65.0	7	87.5	1	100	1	33.3	4	50.0
Obstetric violence concept										
Yes	277	56.5	140	66.0	38	60.3	36	24.5	63	92.6
No	213	43.5	72	34.0	25	39.7	111	75.5	5	7.4

Table 2. PercOV-S results, its dimensions and items according to studied degrees (n=540).

PercOV-S	Nursing		Medicine		Psychology		Midwifery		p ¹
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Overall score	3.94	0.57	3.63	0.54	3.54	0.64	4.11	0.61	≤0.001
Protocolized-visible OV	2.76	0.88	2.44	0.71	2.46	0.74	3.64	0.69	≤0.001
1. Intravenous access	1.91	1.109	2.02	1.053	2.12	1.166	2.09	0.974	0.142
2. Manage position	1.92	1.329	1.51	0.921	1.44	0.910	2.67	1.425	≤0.001
3. Artificially accelerate birth process	3.09	1.287	2.92	1.203	2.77	1.201	3.94	1.024	≤0.001
4. Administer routine enema	3.05	1.354	2.68	1.312	2.76	1.324	4.11	1.092	≤0.001
6. Routine genital shaving	3.42	1.389	3.02	1.317	3.15	1.331	4.23	1.039	≤0.001
15. Lithotomy position	3.09	1.386	2.54	1.276	2.41	1.239	4.38	0.896	≤0.001
16. Accompanied while giving birth	2.38	1.467	2.25	1.380	2.05	1.125	3.56	1.451	0.001
28. Early umbilical cord cutting	3.26	1.307	2.64	1.338	2.96	1.379	4.16	0.974	≤0.001
Non protocolized-invisible OV	4.30	0.61	4.01	0.59	3.88	0.72	4.26	0.65	≤0.001
5. Routine amniorexis	3.94	1.171	3.54	1.312	3.36	1.296	4.00	1.031	≤0.001
7. Immobilizing the mother	4.21	1.110	3.94	1.144	3.54	1.227	4.74	0.810	≤0.001
8. Vaginal palpation with no consent	4.72	0.770	4.52	0.954	4.23	1.105	4.82	0.771	≤0.001
9. Not offering measures for pain	4.48	0.948	4.45	0.848	4.36	0.988	2.60	1.890	≤0.001
10. Encouraging epidural use	3.89	1.120	3.63	1.039	3.44	1.280	4.31	0.923	≤0.001
11. No intimacy	4.76	0.718	4.78	0.515	4.53	0.965	2.54	1.919	≤0.001
12. Convincing women to have a cesarean to quickly end birth painlessly	4.35	1.012	4.18	1.029	3.65	1.324	4.69	0.884	≤0.001
13. Women's decision not considered	4.75	0.770	4.69	0.727	4.44	0.977	4.81	0.727	0.536
14. Taking pictures without permission	4.80	0.766	4.78	0.760	4.70	0.922	4.76	0.845	≤0.001
17. Routine episiotomy	4.34	0.929	4.12	1.038	3.83	1.240	4.25	0.976	0.003
18. Being told: "You don't know how to push"	4.77	0.726	4.52	0.954	4.55	1.001	4.78	0.726	≤0.001
19. Kristeller maneuver	3.89	1.306	3.00	1.272	3.29	1.221	4.21	1.035	0.113
20. Episiotomy without anesthetic	4.41	0.957	4.34	1.122	4.16	1.069	4.32	1.007	≤0.001
21. Not allowing women to eat/drink	3.32	1.362	2.97	1.307	2.89	1.320	4.18	0.955	≤0.001
22. No covering/heat provided during childbirth	4.16	1.018	4.05	1.110	4.10	1.173	4.54	0.853	0.629
23. Being told: "Stop complaining, it's not that bad"	4.80	0.687	4.78	0.745	4.69	0.913	4.79	0.722	0.004
24. Not allowing women to shout	4.43	0.959	4.16	1.101	4.22	1.169	4.58	0.911	≤0.001
25. Performing cesarean due to slow dilation	4.13	1.059	3.62	1.128	3.59	1.318	4.35	0.912	≤0.001
26. Emergency cesarean without consent	4.45	0.952	4.11	1.286	3.72	1.225	4.47	0.924	≤0.001
27. No-one accompanying them during instrumentation or cesarean	4.16	1.077	3.37	1.257	3.66	1.205	2.38	1.695	≤0.001
29. Suturing tears without anesthetic	4.40	0.868	4.28	1.097	4.12	1.082	4.59	0.860	≤0.001
30. Separating newborn from mother	4.69	0.806	4.35	1.205	4.42	1.006	4.81	0.763	≤0.001
31. Skin-to-skin contact after pediatric checks	3.37	1.436	2.84	1.417	2.69	1.322	4.12	1.146	≤0.001
32. Taking baby to baby unit	3.63	1.259	3.00	1.098	2.96	1.214	4.20	1.049	≤0.001
33. Giving artificial milk without mother's consent	4.73	0.778	4.38	1.106	4.19	1.217	4.76	0.779	≤0.001

NOTE: ¹Kruskal-Wallis test

Table 3. Descriptive and comparative results of the PercOV dimensions and overall score according to academic year.

	Overall score			Protocolized-visible OV ¹			Non protocolized-invisible OV ¹		
	M	SD	p ²	M	SD	P ²	M	SD	p ²
Nursing			<0.001			<0.001			<0.001
First	3.43	0.49		2.38	0.84		3.88	0.52	
Second	3.90	0.51		3.02	0.73		4.31	0.59	
Third	4.29	0.51		3.91	1.06		4.54	0.65	
Fourth	4.10	0.39		3.33	0.85		4.48	0.36	
Psychology			0.276			0.335			0.308
First	3.53	0.56		2.70	0.79		3.89	0.62	
Second	3.87	0.58		3.19	0.86		4.21	0.55	
Third	3.53	0.73		2.91	0.94		3.83	0.83	
Fourth	3.21	0.93		2.85	0.85		3.44	1.15	
Midwifery			0.790 ³			<0.001 ³			0.089 ³
First	4.09	0.67		4.02	0.81		4.27	0.73	
Second	4.19	0.32		4.61	0.51		4.24	0.31	
Medicine			0.137			0.003			0.504
First	3.90	0.33		3.23	0.62		4.22	0.38	
Second	3.67	0.64		3.09	0.63		3.98	0.82	
Third	3.52	0.51		2.27	0.72		4.01	0.52	
Fourth	3.49	0.43		2.75	0.24		3.84	0.53	
Fifth	3.46	0.58		2.55	0.93		3.86	0.66	
Sixth	3.34	0.89		2.74	0.98		3.64	0.92	

NOTE: ¹ OV: Obstetric Violence. ² Kruskal-Wallis Test. ³ Mann-Whitney U test

Table 4. Descriptive and comparative results of the dimensions and overall score per socio-demographic and control variable

	Overall score			Protocolized-visible OV ¹			Non protocolized-invisible OV ¹		
	M	SD	p ²	M	SD	p ²	M	SD	p ²
Gender			<0.001			<0.001			<0.001
Masculine	3.56	0.61		2.86	0.89		3.91	0.64	
Feminine	3.89	0.62		3.34	1.04		4.20	0.65	
Experience in maternity service			<0.001			<0.001			0.001
Yes	4.06	0.63		3.89	0.98		4.28	0.64	
No	3.75	0.61		3.02	0.96		4.10	0.68	
Present during woman birth			<0.001			<0.001			<0.001
Yes	4.03	0.69		3.59	1.04		4.33	0.72	
No	3.74	0.61		2.94	0.92		4.10	0.67	
Different treatment according to ethnic group			<0.001			<0.001			<0.001
Yes	4.07	0.49		4.07	0.86		4.24	0.47	
No	3.82	0.63		3.37	1.06		4.12	0.66	
Different treatment according to socio-economic status			0.201			0.048			0.793
Yes	4.03	0.43		3.91	0.96		4.22	0.40	
No	3.88	0.65		3.56	1.07		4.15	0.67	
Different treatment according to being an immigrant			0.222			0.047			0.969
Yes	4.01	0.48		3.89	0.98		4.21	0.46	
No	3.87	0.64		3.54	1.06		4.14	0.66	
Own pregnancy			0.579			0.281			0.846
Yes	3.77	0.92		3.49	1.19		4.04	0.96	
No	3.86	0.62		3.23	1.02		4.15	0.65	
Own birth			0.744			0.951			0.805
Yes	3.65	0.94		3.25	1.11		3.97	1.01	
No	3.84	0.62		3.24	1.03		4.15	0.65	
Obstetric Violence Concept			<0.001			<0.001			<0.001
Yes	3.95	0.59		3.49	1.02		4.24	0.65	
No	3.57	0.560		2.73	0.85		3.96	0.61	

NOTE: ¹ OV: Obstetric Violence. ² Mann-Whitney U Test.

Table 5. Multivariate analysis between the socio-demographic/control variables and PercOV-S.

Overall PercOV score	Coefficients				
	β	SE (β) ¹	EC (β) ²	95%CI (β)	P ³
Constant	4.191	0.217	---	3.756 / 4.626	<0.001
Medicine	-0.566	0.193	-0.353	-0.954 / -0.177	0.005
Psychology	-0.515	0.374	-0.170	-1.267 / 0.237	0.175
Gender: Masculine	-0.324	0.200	-0.190	-0.725 / -0.077	0.111
Experience in maternity services (yes)	-0.191	0.227	-0.138	-0.646 / 0.264	0.404
Time since woman birth					
1 -4 years	-0.103	0.167	-0.077	-0.437 / 0.232	0.541
> 4 years	-0.675	0.244	-0.347	-1.164 / -0.186	0.008
Treated according to ethnic group (yes)	0.213	0.182	1.169	-0.153 / 0.580	0.248
OV concept ⁴ (yes)	0.123	0.240	0.512	0.143 / 0.397	<0.001
Protocolised-visible OV					
Constant	4.286	0.303	---	2.982 / 5.590	0.005
Nursing	0.429	0.247	0.191	-0.636 / 1.493	0.225
Medicine	-0.429	0.391	-0.131	-2.112 / 1.255	0.388
Time since woman birth					
< 1 year	1.000	0.303	0.305	-0.304 / 2.304	0.081
> 4 years	-2.429	0.277	-0.970	-3.619 / -1238	0.013
OV concept ⁴ (yes)	-0.143	0.277	-0.057	-1.333 / 1.047	0.657
Non protocolized-invisible OV					
Constant	4.255	0.157	---	3.942 / 4.568	<0.001
Gender: masculine	-0.167	0.190	-0.091	-0.544 / 0.210	0.380
Medicine	-0.475	0.146	-0.346	-0.765 / -0.185	0.002
Psychology	-0.448	0.324	-0.143	-1.093 / 0.197	0.171
Experience in maternity services (yes)	0.100	0.167	0.008	-0.321 / 0.342	0.951
Present during human birth	-0.130	0.167	-0.098	-0.463 / 0.202	0.438
OV concept ⁴ (yes)	-0.285	0.158	0.208	-0.029 / 0.600	0.075
Different treatment for being an immigrant (yes)	0.106	0.153	0.072	-0.198 / 0.411	0.486

NOTE: ¹Standard error for β . ² Standardized β coefficient. ³ANOVA. ⁴OV: Obstetric Violence.