The Prevalence of Violence Against Women During Pregnancy and After Delivery in Saudi Arabia: A Cross-Sectional Study

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Abstract
Introduction
Violence against pregnant women has become a public health issue and a violation of human rights. The World Health Organization (WHO) defines violence as any act (physical or verbal) that causes physical or psychological harm. Obstetric violence committed by healthcare providers can lead to significant health consequences harming both mother and child. During pregnancy, violence is more frequent than some obstetric complications that are routinely recorded or screened. Therefore, this study aims to assess the prevalence of violence against women during pregnancy and labor, and postpartum.

Materials and methods
In this cross-sectional study, our study population consisted of women who have experienced pregnancy and labor in the Najd region. We used both face-to-face and online questionnaires that evaluated the knowledge and practice outcomes of women who have experienced violence during labor, in addition to the behavior of healthcare providers toward these women.

Results
In our analysis of demographic data, we found a significant association between age and having experienced violence before/during birth. Most women who experienced violence were between 25 and 45 years old (p=0.002). Furthermore, the history analysis revealed a significant association between follow-up regularity and violence experiences (p=0.010). Nursing students delivered most women (71%), and they did not provide information regarding the women’s rights or procedures. Of the respondents, 39.6% did not feel comfortable and were afraid of the healthcare providers’ words, phrases, or behaviors.

Conclusion
Our study concluded that many women experience violence committed by healthcare providers before, during, and after labor without realizing it. As a result of the ignorance of their rights, violence is more prevalent among these women. As a recommendation, to expand on the rights, women organizations should dedicate more efforts and throw campaigns to raise the awareness of violence among other women.

How to cite this article
Al-Khushayban F A, Alharbi M K, Alsheha M A, et al. (June 29, 2022) The Prevalence of Violence Against Women During Pregnancy and After Delivery in Saudi Arabia: A Cross-Sectional Study. Cureus 14(6): e26417. DOI 10.7759/cureus.26417
healthcare professionals. In Mexico, the national human rights commission and the government have included obstetric violence in the general law. Physical or verbal violence should be routinely assessed at obstetric clinics [8] because, despite its increased frequency and serious consequences, roughly two million newborns die within the first 24 hours of their lives every year. Pregnancy, childbirth, and the postpartum period account for more than 600,000 deaths among women each year [9].

Many factors contribute to violence during pregnancy, such as low educational levels, smoking, drug abuse, unwanted pregnancies, insufficient income, unemployment, forced marriage, and the physical and mental health of the couple [10]. As a result of a lack of awareness, some Saudi women justified violence. It is difficult for some women who have experienced violence to report it to the authorities [11].

The WHO and Pan American Health Organization have developed a series of information sheets that revealed the prevalence, patterns, consequences, risk factors, and strategies to prevent different forms of violence against women [1]. This study aimed to determine the prevalence of violence against women during pregnancy and after delivery, assess the awareness of obstetric violence among women, and evaluate the quality of healthcare assistance during childbirth in hospitals in the Najd region of Saudi Arabia.

Materials And Methods

Study design, area, population, and sampling

This is a cross-sectional study carried out in the Najd region of Saudi Arabia. We obtained ethical approval from the Committee of Research Ethics, Deanship of Scientific Research, Qassim University, Buraydah, Saudi Arabia (approval number 190104). We distributed the questionnaire online and at any female social gatherings. All women who gave birth were included. Women participated conveniently, and their consent was taken preceding the questionnaire. They agreed to participate in the study and were informed of the purpose, confidentiality rights, and right to withdraw at any time without any obligation to the study team.

Tools, size, and selection of sample

We received a total of 753 women. Our minimum sample size was 350 calculated using the following formula:

\[
N = \frac{z^2pq}{d^2}
\]

\[
N = \frac{1.96^2(0.35)(0.65)}{0.05^2} - 350
\]

p is the expected prevalence, which is 35% based on previously published studies; q=1-p; d is the absolute error or precision, which is 5% (0.05); z is the standard normal variant at 5% type 1 error (p<0.05), which is 1.96. The total population of Riyadh is about five million, and that of Qassim is about 1.5 million.

A validated questionnaire [12] was distributed both online and face-to-face. The questionnaire consisted of three sections. The first section included the demographic data of the participants, including age, education, marital status, work, and monthly household income. The second section included obstetric history, which includes the number of pregnancies, abortions, fetal outcome, follow-up, privacy, and forced supine position. In addition to pre-labor data, data on labor time, companion, rules notification, help, checking fetal pulse, intravenous treatment, and vaginal examination were also collected. The third section included data of delivery, such as method, place, help, doctor, position, drinks offered, verbal violence, questions, induction, cuts, and wounds. In addition to postdelivery data, data about holding the child, breastfeeding, mothers’ satisfaction, maternity leave, and cleaning up were included.

Statistical analysis

Data analyses were performed using SPSS Statistics for Windows version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were summarized using numbers, percentages, means, and standard deviations. The chi-square test was used to determine if there is a significant relationship between two nominal (categorical) variables. There are several factors to consider, such as marital status (married, divorced, or widowed), educational level (educated or not educated), monthly household income, the type of hospitals (private or public), the number of deliveries, the type of violence (verbally or physically), and the position of the delivery. P-value < 0.05 was considered statistically significant.

Results

Demographic characteristics of women

A total of 753 women participated in this study, of whom most (84.1%) were between the ages of 25 and 45, with just 7% of them being over 45 years. Based on their educational level, it was found that 169 (22.4%) had stopped at preparatory school, while the majority of 534 (70.9%) had completed secondary school. In the high education group, 15 (2%) participants received bachelor’s degrees, six (0.8%) earned master’s degrees,
and two (0.3%) received doctoral degrees. The majority of women (n=713 (94.7%)) were married, 32 (4.2%) were divorced, and eight (1.1%) were widows. As regards work, 437 (58%) respondents reported being employed, whereas 316 (42%) reported being housewives. The financial status of working women revealed that 343 (45.6%) had an income exceeding 10,000 RS, 308 (40.9%) between 5,000 and 10,000 RS, and 102 (13.5%) only had an income below 5,000 RS (Table 1).

| Variables     | Frequency | Percentage |
|---------------|-----------|------------|
| Age           |           |            |
| Less than 18 years | 1         | 0.1        |
| 18-25 years    | 66        | 8.8        |
| 25-30 years    | 357       | 47.4       |
| 30-45 years    | 276       | 36.7       |
| More than 45 years | 53        | 7          |
| Education     |           |            |
| Uneducated     | 12        | 1.6        |
| Primary school | 15        | 2          |
| Preparatory school | 169      | 22.4       |
| Secondary school | 534      | 70.9       |
| Bachelor’s degree | 15       | 2          |
| Master’s degree | 6        | 0.8        |
| PhD           | 2         | 0.3        |
| Marital status|           |            |
| Married       | 713       | 94.7       |
| Divorced      | 32        | 4.2        |
| Widow         | 8         | 1.1        |
| Working       | 437       | 58         |
| Not working   | 316       | 42         |
| Income        |           |            |
| Less than 5,000 | 102     | 13.5       |
| Between 5,000 and 10,000 | 308 | 40.9       |
| More than 10,000 | 343     | 45.6       |

**TABLE 1: Demographic characteristics of women (n=753)**

**Pre-labor period**

Based on their pre-labor data, 618 (82.1%) were born full-term with normal labor. A total of 452 (60%) did not have the right to choose a companion, and 462 (60.9%) were forced into a supine position, while only 56 (31.0%) of the participants were not forced into a specific position during labor. Out of 753 participants, 512 (68%) were not informed of the rules to having a companion during childbirth. The study found that 365 (48.5%) respondents had not received helpful instruction, with a significant association (p=0.060). Almost all (90%) of the 753 women were examined vaginally during labor, of which 370 (53.5%) were examined by nursing students, and only 117 (17%) were examined by doctors (Table 2).

| In which month did the labor begin? | Frequency | Percentage |
|------------------------------------|-----------|------------|
| Before 28 weeks                    | 16        | 2.1        |
| Before 34 weeks                    | 13        | 1.7        |
| Before 36 weeks                    | 106       | 14.1       |
| 36-40 weeks                        | 618       | 82.1       |
| Did you have the right to choose a companion with you during labor and childbirth? | Yes | 250 | 33.2 |
|--------------------------------|-----|-----|------|
| No                            | 452 | 60  |
| Not sure                      | 51  | 6.8 |
| Husband                       | 137 | 55  |
| Mother                        | 66  | 26  |
| If yes, who was he/she?       |     |     |      |
| Sister                        | 42  | 17  |
| Friend                        | 5   | 2   |
| Total                         | 250 | 100 |
| Have you been notified of the accompanying rules? | Yes | 174 | 23.1 |
| No                            | 512 | 68  |
| Not sure                      | 67  | 8.9 |
| Breathing exercises           | 52  | 34  |
| Massages                      | 60  | 39  |
| What kind of help did you receive? |     |     |      |
| Walking                       | 52  | 34  |
| Shower                        | 60  | 39  |
| Others                        | 60  | 39  |
| Yes                           | 654 | 86.9|
| No                            | 48  | 6.4 |
| Not sure                      | 51  | 6.8 |
| During labor, did the medical staff check the fetus’s pulse? | Yes | 523 | 69.5 |
| No                            | 48  | 6.4 |
| Not sure                      | 51  | 6.8 |
| Did they put intravenous treatment when you entered? | Yes | 523 | 69.5 |
| No                            | 130 | 17.3|
| Not sure                      | 100 | 13.3|
| Have you been instructed not to drink or eat during labor? | Yes | 678 | 90  |
| No                            | 678 | 90  |
| Not sure                      | 678 | 90  |
| Have you been examined through your vagina during labor? | Yes | 678 | 90  |
| No                            | 58  | 7.7 |
| Not sure                      | 17  | 2.3 |
| If yes, who did the vaginal examination? | Nurse | 193 | 28  |
| Doctor                        | 117 | 17  |
| Nursing student               | 370 | 53.5|
| Medical student               | 2   | 0.5 |
| Other                         | 3   | 0.5 |

**TABLE 2: Pre-labor period (n=753)**

Based on our analysis of pre-labor help provided by hospital medical staff to pregnant women to relieve cramps or pain, 59.8% answered no help, 37.3% answered some help, and 2.9% were not sure if any help was provided (Figure 1).
The analysis of some incidents related to pregnant women (history and pre-labor) found a significant association between age and violence \( (p=0.002) \); educational level also showed a significant association with violence \( (p=0.000) \). There was a significant association between the number of pregnancies and violence exposure among participants \( (p=0.010) \). Of the participants, 258 (34%) had one miscarriage, and 39 (5.2%) had a dead baby after delivery, with a significant association \( (p=0.040) \). In addition, there is a significant association between the experience of violence and regularity of follow-up, feeling of privacy, and forced supine position (Table 3).

| Demographic data                      | Yes (frequency (%)) | No (frequency (%)) | \( \chi^2 \) | p-value $^\text{§}$ |
|---------------------------------------|---------------------|-------------------|-----------|----------------|
| Age (years)                           |                     |                   |           |                 |
| >18                                   | 1 (0.4)             | 0 (0)             | 24.660a   | 0.002**         |
| 18-25                                 | 17 (7.4)            | 40 (8.2)          |           |                 |
| 25-30                                 | 119 (51.7)          | 232 (47.3)        |           |                 |
| 30-45                                 | 80 (34.8)           | 181 (36.9)        |           |                 |
| >45                                   | 13 (5.7)            | 37 (7.5)          |           |                 |
| Level of education                    |                     |                   |           |                 |
| Uneducated                            | 2 (0.8)             | 10 (2.04)         | 12.997a   | 0.000           |
| Primary education + intermediate education | 64 (13.06)      | 112 (22.9)        |           |                 |
| High school education + higher education | 164 (71.3)       | 368 (75.1)        |           |                 |
| Number of pregnancies (have you had an accident/violence before/during birth?) |                     |                   |           |                 |
| One-time pregnancy                    | 47 (20.4)           | 109 (22.2)        |           |                 |
| Two-time pregnancy                    | 109 (47.4)          | 256 (52.2)        |           |                 |
| Three-time pregnancy                  | 27 (11.7)           | 50 (10.2.1)       |           |                 |
| Four-time pregnancy                   | 25 (10.9)           | 25 (5.1)          |           |                 |
| Five-time pregnancy                   | 9 (3.9)             | 20 (4.08)         | 31.943a   | 0.010**         |
| Six-time pregnancy                    | 4 (1.7)             | 13 (2.7)          |           |                 |
| Seven-time pregnancy                  | 7 (3.04)            | 10 (2.04)         |           |                 |
| Eight-time pregnancy                  | 2 (0.9)             | 5 (1.02)          |           |                 |

$^\text{§}$ Denotes statistical significance at \( p < 0.05 \)}
During labor

When we asked the participants about their delivery, 720 (95.6%) were in the delivery room, and 737 (95.6%) had medical assistance, but nursing students delivered most of the women (n=526 (71%)). A total of 737 (97.9%) women delivered their babies while in the supine position. Of the participants, 514 (68.3%) underwent episiotomy, and 281 (46%) received anesthesia, while 190 (31%) did not. Since 143 (23%) respondents were uncertain about the use of anesthesia, we asked if they felt pain while their perineums were sewn; 336 (51%) responded in the affirmative and 243 (37%) in the negative (Table 4).
| Medical student | 3 | 1 |
|-----------------|---|---|
| Lying on back   | 737 | 97.9 |
| Lying on side   | 2 | 0.3 |
| Squatting       | 13 | 1.7 |
| Standing        | 1 | 0.1 |
| Sitting         | 0 | 0 |
| **In which position was the delivery done?** | | |
| **Yes**         | 77 | 10.2 |
| **No**          | 644 | 85.5 |
| **Not sure**    | 32 | 4.2 |
| **Did the medical staff offer drinking liquid (water, juice, and/or tea) during childbirth?** | | |
| **Yes**         | 196 | 26 |
| **No**          | 524 | 69.6 |
| **Not sure**    | 33 | 4.4 |
| **Have you been notified/advised of other positions to help you during childbirth?** | | |
| **Yes**         | 298 | 39.6 |
| **No**          | 407 | 54.1 |
| **Not sure**    | 48 | 6.4 |
| **Have you ever felt uncomfortable and afraid of any word/phrase/behavior mentioned or done by the medical staff during labor and delivery?** | | |
| **Yes**         | 474 | 62.9 |
| **No**          | 48 | 6.4 |
| **Not sure**    | 48 | 6.4 |
| **Did you ask any questions while you were in labor?** | | |
| **Yes**         | 350 | 65 |
| **No**          | 226 | 30 |
| **Not sure**    | 53 | 7 |
| **If yes, have your questions been answered?** | | |
| **Yes**         | 380 | 50.5 |
| **No**          | 140 | 26 |
| **Not sure**    | 50 | 9 |
| **Have labor induction been used?** | | |
| **Yes**         | 328 | 43.6 |
| **No**          | 348 | 46.2 |
| **Not sure**    | 77 | 10.2 |
| **Has your belly been pressed to facilitate the delivery process?** | | |
| **Yes**         | 514 | 68.3 |
| **No**          | 514 | 68.3 |
| **Not sure**    | 77 | 10.2 |
| **Was the perineum cut during delivery?** | | |
| **Yes**         | 281 | 46 |
| **No**          | 200 | 26.6 |
| **Not sure**    | 39 | 5.2 |
| **If yes, did you receive anesthesia while the perineum was cut?** | | |
| **Yes**         | 190 | 31 |
| **No**          | 190 | 31 |
| **Not sure**    | 143 | 23 |
| **Total**       | 614 | 100 |
| **Yes**         | 336 | 51 |
| **No**          | 243 | 37 |
| **Not sure**    | 76 | 12 |
| **Have you felt pain while the perineum was sewn even with anesthesia?** | | |
| **Yes**         | 336 | 51 |
| **No**          | 243 | 37 |
| **Not sure**    | 76 | 12 |
| **Total**       | 655 | 100 |
According to our assessment of the prevalence of violence experienced by our participants before or during labor, 31% of the 753 women experienced violence before or during childbirth, 65% had no accident in their opinion, and 4% were not sure (Figure 2).

**FIGURE 2: Prevalence of accidents/violence before or during delivery**

### TABLE 4: During labor (n=753)

| Experience | Frequency | Percentage |
|------------|-----------|------------|
| Yes        | 31        | 4.0%       |
| No         | 65        | 85%        |
| Not sure   | 4         | 0.5%       |

N=753

**Post-labor period**

When we asked the mothers whether they held their newborns after delivery, 356 (47.3%) did not hold them in the delivery room, while 378 (50.2%) did. Of the women, 332 (44.1%) had not been notified of the need to breastfeed during the first hour following delivery. A total of 294 (39%) women reported feeling unsatisfied or unsupported by the medical staff during labor and childbirth, and 23 (3.1%) women were unsure whether they felt supported and satisfied by the medical staff. Meanwhile, 230 (30.5%) respondents did not have the right to take maternity leave during childbirth, while 312 (41.2%) did (Table 5).

| Experience                                      | Frequency | Percentage |
|------------------------------------------------|-----------|------------|
| Did you hold your child in the delivery room?   |           |            |
| Yes                                            | 378       | 50.2       |
| No                                             | 356       | 47.3       |
| Not sure                                       | 19        | 2.5        |
| Have you been notified of the need to breastfeed your baby during the first hour after birth? |           |            |
| No                                             | 332       | 44.1       |
| Not sure                                       | 23        | 3.1        |
| Have you felt satisfied/supported by the medical staff during labor and childbirth? |           |            |
| No                                             | 294       | 39         |
| Not sure                                       | 42        | 5.6        |
| Have you had the choice to take maternity leave during your childbirth? |           |            |
| No                                             | 230       | 30.5       |
| N/A                                            | 211       | 28         |
| Have you been washed/cleaned topically?         |           |            |
| Yes                                            | 519       | 68.9       |
| No                                             | 128       | 17         |
| Not sure                                       | 106       | 14.1       |

**TABLE 5: Post-labor period (n=753)**
Discussion

Violence against women is becoming one of the most common social, public, human rights, and health concerns [13]. Violence against women may occur during pregnancy, according to global research. Based on a multicity study, up to 28% of pregnant women have experienced physical violence [14]. In addition, there is evidence that violence may negatively impact the health of women and infants, resulting in delays in seeking antenatal care, miscarriage, preterm delivery, and low birth weight [6]. During pregnancy, violence is more frequent than some obstetric complications, because women are not fully aware of their rights during this critical and valuable time. In this study, most of the respondents' ages (84.1%) ranged from 25 to 40 years, and 70.9% had a secondary educational level. In addition, 35% did not feel privacy, 60% did not have the right to choose a companion, and 68% had not been notified about the rules. There are several types of violence, such as verbal, emotional, and physical, as well as even obscure laws and rights intended to protect women [14]. We estimated that 450 (59.8%) participants in our study did not receive any medication to relieve pain nor were provided reassurance. According to our study, some answers reflected the percentage of clueless women. During childbirth, 33 (4.4%) participants are unaware of other positions available to help them; 7%-25% of women did not receive any information about their rights, including asking questions and trying the essential procedures that could be helpful. Although most women have had multiple pregnancies, they report violence only during one of their pregnancies. It is necessary to conduct further research to gain a deeper understanding of this issue and develop appropriate prevention strategies [15].

After analyzing our results, we found that many women are victims of various types of abuse during the delivery process. It was reported that medical and premedical staff at health institutions treated them disrespectfully. The effects of this reality were felt in several countries throughout the world. Abusing these women violates their right to quality healthcare, and it also puts their physical and mental integrity at risk at a time of extreme vulnerability [16]. Several studies have found an association between violence and poor pregnancy outcomes. For example, women who had experienced abuse during pregnancy are more likely to register for late prenatal care, experience premature labor, and give birth to low-weight children [17]. Besides the physical trauma caused by assaults, such as punches or slaps, continuous stress also has another consequence. It has been shown that continuous stress has a negative impact on the perinatal outcome through changes in individual behavior or physiological responses. Individuals can engage in various types of behaviors, which can interfere with their ability to maintain a healthy nutritional status, rest, or receive medical care [18]. We found that 462 (61.4%) participants had been forced into a supine position without receiving intravenous treatment. Contrary to WHO recommendations, women should give birth in the position they are most comfortable in [19]. In addition, 90% of the participants underwent vaginal examination (53.5%) by nursing students during the pre-labor period, which is considered physical abuse during pregnancy. Compared to the Multi-country Study on Women’s Health and Domestic Violence against Women, sponsored by the World Health Organization, between 2000 and 2003, this result is very similar [14].

During all stages of pregnancy, pregnant women are subjected to multiple forms of violence, but despite this, health-seeking behavior is minimal following the violent assault. Their results reflect poor awareness of gender-based violence among healthcare providers [20]. When testing multiple factors associated with having an accident or violence before birth, there was a significant association between most labor factors and having an accident or violence before or during birth. The incidence of perinatal and neonatal mortality is higher in women who have suffered physical violence during pregnancy than in women who did not suffer such violence during pregnancy [21]. We found that 67% of women who experienced violence during labor delivered in public hospitals. While most of them (95.6%) were in the delivery room, 39.6% reported feeling uncomfortable or afraid. Multicountry studies of the prevalence of different abuse types among women seeking antenatal care suggest that these women are likely to have a history of abuse. The different forms of abuse prevailed and varied significantly between the participating countries, with or without adjusting for age, education, and gestational length [22]. In contrast, estimates of the prevalence of past and present violence and abuse in pregnant women vary greatly and may be difficult to compare. This is because they differ regarding the type of abuse assessed, the time of occurrence, and the perpetrator [23]. They added that methodological factors such as the study design, measuring instrument, and population studied could influence results. Our study found that 187 (65%) women experienced verbal violence and 111 (37%) women experienced physical violence but never reported these incidents. These results were consistent with a retrospective, cross-sectional study in Bangladesh [24]. Furthermore, the authors linked violence against women to postpartum depression, which can be life-threatening in some cases. It is important to consider all of these factors as indicators that can alert healthcare providers. This will enable them to develop or improve guidelines and plans of action to help pregnant women who have been exposed to violence [3].

Limitations

The obstetric field faces many challenges, particularly in Saudi Arabia. Our study represents a region, not the whole country. The results are based on a self-administered survey; hence, reporting bias cannot be eliminated. The generalization of this study’s results should be made carefully.

Conclusions

Whole country. The results are based on a self-administered survey; hence, reporting bias cannot be improved guidelines and plans of action to help pregnant women who have been exposed to violence [3].

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Pregnancy on its own is a very stressful event for the mother’s body and mental health. Healthcare providers should work better for pregnant women to eliminate the unnecessary physiological and psychological suffering during and after giving birth. Some of the practices developed in the daily routine of obstetric services are inconsistent with public health recommendations. Our results suggest that unnecessary interventions may result in physical or psychological abuse and serious problems. Therefore, obstetric healthcare providers, especially nurses and doctors, must seek continued professional development to develop their care activities according to public health policies. We concluded that screening for violence during prenatal care must be further studied and applied since the gestation period is sensitive and critical to a mother’s future health. We must encourage women to seek help if they are facing any type of violence. We recommend health organizations in the region to throw campaigns to enhance the awareness of women in the community about their rights during pregnancy and labor, and postpartum.

Additional Information

Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. The Deanship of Scientific Research, Subcommittee of Health Research Ethics, issued approval number 190104. Animal subjects: All authors have confirmed that this study did not involve animal subjects or tissue. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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