

Claims about Medical Malpractices Resulting in Maternal and Perinatal Mortality Referred to Iranian Legal Medicine Organization During 2011–2012

Abstract

Background: Obstetricians, gynecologists, and midwives are the most common specialists of the medical sciences group against whom medical malpractices are claimed, many of which are avoidable and preventable. Therefore, the present study was conducted to investigate the causes of claims regarding medical malpractices resulting in maternal and perinatal mortality. **Materials and Methods:** A descriptive cross-sectional study was conducted and 7616 claims of medical malpractices in the field of obstetrics, gynecology, and midwifery that were referred from all 31 provinces to the central commission of legal medicine were studied during 2011–2012. Therefore, the present research is a national inclusive study covering all the provinces across Iran. To collect information from the transcript of medical malpractices cases, a researcher-made checklist was used, and the collected data were analyzed. **Results:** The results of the present study showed that among all the medical malpractice claims regarding pregnancy and childbirth (42.24%), the majority concerned perinatal death (71.82%) and maternal death (28.16%). **Conclusions:** Medical malpractice complaints are increasing; although, most of these claims are preventable. To achieve this aim, it is necessary for obstetricians, gynecologists, and midwives to try to reduce the complaints by paying more attention to the signs and symptoms of diseases, performing all the diagnostic and therapeutic measures according to the scientific criteria, and fully document patients' records. In addition, patients' acquaintance with the importance of measurements and examinations, before and during pregnancy care and even after childbirth is crucial.

Keywords: Iran, maternal morbidity, medical error, midwifery, obstetric, perinatal mortality

Introduction

Malpractice is inevitable among medical teams because of the complexities of the health and therapeutic system.^[1] However, patients' dissatisfaction and claims are increasing despite efforts of the medical teams.^[2] Medical malpractice cases increased from 184 to 289 cases (from 1995 to 2008) in Iran.^[1] Medical malpractice implies performing a treatment or making a decision which is not according to the accepted medical standards,^[3] leading to injury or death.^[4] Medical malpractice claims can cause psychological and social problems for the medical team while patients can suffer injuries^[5] or death.^[6] Medical malpractice is the eighth common global cause of death after accidents, cancer, human immunodeficiency virus (HIV) infection, etc.^[2] Gynecologists and obstetricians comprise the medical group that most commonly encounters medical malpractice claims.^[7]

In a study conducted by Akhlaqi *et al.*, that assessed the claims referred to the Iranian Legal Medicine Organization (LMO), 76 cases (78.35%) were due to pregnancy and childbirth.^[8] According to Beigi *et al.*, the most medical malpractices associated with pregnancy and childbirth that resulted in the death of the mother, fetus, or neonate were related to obstetricians (55.72%) and midwives (17.95%).^[9] Community's expectations have increased from these specialties^[8] along with their advancements.^[10] The smallest violation of scientific standards may cause dangerous and mortal complications in this field because, unlike other groups of medical specialists, gynecologists and midwives oversee two lives and two human beings rather than one.^[11] Many medical malpractice claims pertain to issues that could be avoided,^[6] and more than 95% are in fact preventable.^[4] Hence, with respect to

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the increase in complainants as well as proven malpractice cases in recent years and regarding the important indicator of the health of the mother and neonate, the present study was conducted to examine the causes of claims made regarding medical malpractices resulting in death across Iran to help increase the awareness of gynecologists and obstetricians about pregnancies with high risk for mortality and to improve patients' safety.

Materials and Methods

This retrospective, descriptive, cross-sectional study examined the records of medical malpractice claims in the field of gynecology, obstetrics, and midwifery (1165 cases) that were referred from all the 31 provinces of Iran to the Iranian LMO from March 21, 2011 to March 20, 2013. After obtaining the approvals of the Ethics Committee and the Iranian LMO, the researchers began their data collection, which lasted 10 months. First, gynecology, obstetrics, and midwifery malpractice claim files (1165) were separated from the entire collection of claim files referred to the LMO (34432) through census sampling. The cases pertaining to pregnancy and childbirth (527) were separated next. Then, the cases leading to maternal and perinatal mortality (284) were separated and analyzed.

The researchers designed a checklist validated by 12 experts at the Iranian LMO, gynecologists, reproductive health doctors, and midwives, and then used it for collecting and summarizing the data obtained from the claim files. Uncompleted cases were excluded from the study (7 cases) and repeated cases were merged; the researchers only assessed the results of LMO's last meeting votes in those cases (6 cases). Because medical malpractice files contained the patients' and the involved medical teams' confidential data, the plaintiffs and gynecologists, obstetricians, and any other members of the medical team against whom the claims were made remained anonymous and their address was not disclosed; rather, only general data on the claims were collected in compliance with medical ethics to avoid potential problems.

Ethical considerations

Ethical considerations of this study were followed. The integrity on the data extraction from documents and the principle of confidentiality of data were respected.

Results

The results of this study revealed a total of 284 cases that were referred to the Iranian LMO between 2011 and 2012 and were related to maternal and perinatal death. Results show that the most common causes of medical malpractice claims related to pregnancy and childbirth included neonatal death (43.30%), fetal death (28.52%), and maternal death (28.16%).

Examining medical malpractice claim files related to pregnancy and childbirth divided neonatal death into three

categories of maternal causes, fetal and placental causes, and unspecified causes [Table 1]. Fetal deaths were also divided into the same three categories [Table 2]. Maternal deaths were then divided into five categories of causes pertaining to pregnancy, causes pertaining to childbirth,

Table 1: Absolute and relative frequency of medical malpractice claims relating to pregnancy and labor due to neonatal death referred to LMO during 2011-2012

Causes of neonatal death	Number (%)
Maternal causes	
Preeclampsia	13 (10.56)
Pregnancy diabetes	5 (4.06)
Uterine Rupture	3 (2.43)
Other (Meningitis, incorrect intubation, Respiratory-cardiac complications)	3 (2.43)
Fetal and placental causes	
Respiratory distress	18 (14.63)
Respiratory insufficiency	15 (12.19)
Ischemic hypoxic encephalopathy	15 (12.19)
Congenital anomaly	12 (9.75)
Preterm birth	10 (8.13)
Meconium aspiration	6 (4.87)
Cerebral palsy	2 (1.62)
Placenta Abruption	4 (1.62)
Others (bacterial meningitis, TORCH ⁺ syndrome, fracture of skull bone, blood infection, severe jaundice)	5 (4.06)
Unspecified cause	
Unknown	8 (6.50)
No referral of body for autopsy	4 (3.25)
Total	123 (100)

Table 2: Absolute and relative frequency of medical malpractice claims relating to pregnancy and labor due to fetal death referred to LMO during 2011-2012

Causes of fetal death	Number (%)
Maternal causes	
Preeclampsia and eclampsia	16 (19.75)
Pregnancy diabetes	4 (4.93)
Uterine Rupture	4 (4.93)
Preterm birth	3 (3.70)
Others (cytomegalovirus infection, spasm, Thrombotic thrombocytopenic purpura, thrombophilia, maternal -fetal blood inconsistency, mola hydatidosa)	6 (7.40)
Fetal and placental causes	
Meconium aspiration	6 (7.40)
Twin pregnancy	5 (6.17)
Wrap-around-fetal-neck	4 (4.93)
Fetal anomaly	1 (1.23)
Placenta Abruption	6 (7.40)
Unspecified cause	
Unknown	15 (18.15)
No referral of placenta or body for autopsy	11 (13.58)
Total	81 (100)

postpartum causes, causes pertaining to underlying diseases during pregnancy, and unspecified causes [Table 3].

According to the results of this study, the most common causes of medical malpractice claims in the cases that led to maternal death during pregnancy included postpartum hemorrhage (40%), followed by preeclampsia and eclampsia (20%); the most common causes in the cases that led to neonatal death included neonatal respiratory distress (14.63%) and unspecified causes.

Discussion

International reports on the frequency of claims against physicians in recent years in different countries suggest an increasing trend in the rate of complaints despite the tremendous scientific and technological advances in diagnostic and medical services. According to the studies reported by Gomez-Duran *et al.* and Siabani *et al.*, the field of obstetrics and gynecology resulted in the highest number of complaints among all the other medical disciplines.^[7,12]

In the present study, claims regarding medical malpractice were most frequently related to obstetrics and gynecology, pertaining to pregnancy and childbirth only. In studies conducted by Buken *et al.*^[13] and Gomez-Duran *et al.* the majority of claims were also associated with pregnancy and childbirth. In a study conducted by Akhlaqi *et al.*, that surveyed the claim files referred to the Iranian LMO, 76 (78.35%) cases were related to pregnancy and childbirth.^[8] Comparing the results of the present study with the results of Akhlaghi *et al.*, which were reported

10 years ago revealed an increasing trend of medical malpractice complaints associated with obstetrics and gynecology across the country; it could be due to this medical discipline's potential of simultaneously threatening the lives of two people (the mother and the fetus). According to a 2013 World Health Organization (WHO) report, the global rate of maternal mortality reached 287,000 in 2010.^[14] In Iran, based on the country's Fifth National Development Plan, this rate should be decreased to 15 per 100,000 live births.^[15] The gap between developed and developing countries in maternal mortality rate is an alarming problem.^[16]

In the present study, the majority of medical malpractice claims were associated with maternal deaths followed by postpartum hemorrhage, preeclampsia, and eclampsia. In a study conducted by Buken *et al.*, the majority of complaints about maternal deaths concerned postpartum hemorrhage. Hemorrhage, pregnancy hypertension, and embolism are the three main causes of maternal death.^[17] Similarly, in a study conducted by Sharma *et al.* in developed countries, maternal death is first caused by embolism and hypertension followed by hemorrhage.^[18] According to a study conducted by Keshavarzi *et al.* and as reported by the WHO, the four main causes of maternal death in Iran included hemorrhage, hypertension, infection, and difficult childbirth.^[19,20] As a result, despite the advances in medical sciences and the dramatic reduction in obstetric complications and deaths, hemorrhage is still a major cause of maternal death.^[17] Uterine atony is the most common cause of postpartum hemorrhage.^[18]

According to the results of the present study, postpartum hemorrhage presents a valid concern of maternal death. On one hand, it shows that the medical team has not paid sufficient attention to the postpartum risk factors, as some cases of hemorrhage occurred with a delay (48 hours after discharge). On the other hand, some cases occurred due to occult hemorrhage caused by the critical nature of the disease or common complications of surgery following severe bleeding.

According to the national healthcare system's performance and achievement report on maternal death care, most cases of medical malpractice occur after delivery. It should be noted that many cases of postpartum hemorrhage could be prevented.^[21] In this study, except for cases that were not caused by medical malpractice, the most common causes of complaints included the medical team's failure to predict the risk of hemorrhage and recognize its predisposing factors in women, the medical team's poor preparation, their failure to perform early and proper medical or surgical interventions (especially on the part of the midwives and gynecologists), and the failure to educate mothers regarding the risk factors of delayed postpartum hemorrhage.

The next leading causes of maternal death and subsequently fetal or neonatal death after postpartum hemorrhage

Table 3: Absolute and relative frequency of medical malpractice claims relating to pregnancy and labor due to maternal death referred to LMO during 2011-2012

Causes of maternal death	Number (%)
During pregnancy	
Preeclampsia and eclampsia (pregnancy hypertension)	16 (20)
Ectopic pregnancy	3 (3.75)
Hydatidiform mole	1 (1.25)
During labor	
Bowel rupture resulting from caesarean section	4 (5)
No correct intubation of mother during caesarean section	3 (3.75)
After labor	
Postpartum haemorrhage	32 (40)
All types of emboli	9 (11.25)
Cardiomyopathy	3 (3.75)
Infection (Septicaemia and Peritonitis)	2 (2.5)
Systemic diseases in pregnancy (Meningitis, epilepsy, Thrombotic thrombocytopenic purpura, acute cardiac -pulmonary insufficiency, brain stroke)	5 (6.25)
Unspecified	
No referral of body for autopsy	2 (2.5)
Total	80 (100)

included preeclampsia and eclampsia. In studies conducted by Buken *et al.* and Elliott *et al.*, preeclampsia and eclampsia, followed by intrauterine fetal death, were the most common causes of maternal death after postpartum hemorrhage. In fact, preeclampsia is a major complication of pregnancy and comprises one of the three leading causes of maternal death and contributes to a significant proportion of pregnancy-related disabilities and deaths.

With the exception of cases not caused by medical malpractice (i.e., when the mother suffered from a critical case of preeclampsia and eclampsia), the complaints were mostly caused by lack of proper attention to the initial warning signs of this disease, failure to request diagnostic tests and medical procedures according to the standardized national booklet, failure to provide adequate training to the mothers regarding the symptoms and consequences of this disease, failure to provide necessary treatments for mothers, and hospitals' failure to dedicate intensive care units to these particularly high-risk patients.

In this study, the majority of medical malpractice claims due to neonatal death were caused by respiratory distress.^[22] Neonatal respiratory distress should be more carefully considered by medical teams by obtaining proper knowledge of its symptoms, providing proper early treatments, and training mothers about the warning signs of the condition, which can lead to a significant reduction in cases of neonatal death. The majority of medical malpractice studies in the field of obstetrics and gynecology have focused on the fetus rather than the neonate. In a study by Akhlaqi *et al.*, the most common cause of medical complaints regarding neonatal death was respiratory distress. In a study conducted by Gomez-Duran *et al.* in Spain, the most common cause of medical claims about neonatal death was found to be neurological deficiencies. As can be seen, in developed countries, congenital defects contribute to a greater portion of medical complaints about neonatal death than respiratory problems.

A large number of medical complaints, which were surveyed in the present study, did not have a specified cause because the placenta or the mother's or neonate's body was not sent for autopsy, histopathology, toxicology, and pathology examinations by their families. In a study conducted by Buken *et al.* in Turkey, no autopsies were performed in most of the cases following maternal (55.6%), fetal, or neonatal death (77.7%). In addition to its importance in examining the cases of maternal and neonatal death, autopsy could help in determining the exact cause of death in cases of intrauterine fetal death, particularly when the plaintiff claims the incidence to be a case of neonatal death occurring after childbirth, while it is in fact a case of fetal death. The full assessment of pregnancy-related deaths is only possible when different circumstances are taken into account, medical and obstetrical histories are obtained, and laboratory tests are performed along with a full autopsy and comprehensive histopathological and toxicological examinations.^[23]

Given the increasing trend of medical malpractice in obstetrics and gynecology and the growing number of medical complaints and dissatisfaction with gynecologists, obstetricians, and midwives, and according to Beigi *et al.* who reported that most medical malpractices related to pregnancy and childbirth resulted in the death of the mother, fetus, or neonate were related to obstetricians (55.72%) and midwives (17.95%),^[9] to increase job security for this group of medical practitioners and to increase the safety of pregnant women and their neonates in high-risk cases that could lead to maternal, fetal, and neonatal death, it is essential for the medical team (especially the midwives and obstetricians) to fully explain the complications and consequences of diseases and medical procedures that might be performed in pregnant women because many reported claims were filed to complain about medical malpractice rather than to prove malpractice; moreover, many of these complaints were really caused by the the critical nature of diseases or common medical or surgical complications and not necessarily due to medical malpractice.

Given that the investigation of medical malpractice claims after their closure is in fashion and that it may take several years to issue the final verdict after filing the case, conducting a prospective study was not possible and a lot of information on medical malpractice, which could be obtained only by interviewing people, could not be obtained by investigating the cases. The researcher could, however, acquire the necessary information using a large scale (nationwide) investigation of medial malpractices.

Conclusions

Considering that more than half of the malpractice claims made in the field of obstetrics and gynecology are related to pregnancy and childbirth, identifying high-risk cases that could result in medical malpractice claims and devising plans to reduce medical errors, protecting vulnerable groups, and promoting the security of this group of medical specialists appear essential.

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Conflicts of interest

There are no conflicts of interest.

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