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# Forensic Midwifery

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## Abstract

Midwives who have an important role in “Mother and Child Health Services” in the world; is not included as a specialist area of forensic midwifery within the specialties of forensic sciences. We can see that studies of forensic midwifery are only implemented by forensic obstetric gynecology and forensic nursing. The midwife is one of the health personnel who can see the first forensic evidence, who first see the individual in most judicial cases, who first contacts the family or relatives, touches his or her equipment during the examination, and contacts the laboratory specimens taken individually. The purpose of this chapter is informing about content and characteristic of forensic midwifery that cannot find an application field in the world, attracting attention to forensic midwifery and stating that forensic midwifery can contribute to assessment of forensic apparitions.

**Keywords:** midwife, forensic midwifery, criminal cases, forensic midwifery roles, expertise

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## 1. Introduction

When the health level of the countries and the effectiveness of the health services are evaluated; it is seen that the most important difference between the developing countries and the developed countries is in the field of “Mother and Child Health.” The midwife is one of the most important members of the health care profession in terms of duties, powers and responsibilities [1].

By the World Health Organization (WHO); “A person trained to provide necessary care and counseling during pregnancy, childbirth and postpartum period, having normal births on his own responsibility, taking care of the newborn” [2]. According to the International Confederation of Midwives (ICM) the midwife; is a reliable and responsible professional who

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provides maternity care during pregnancy, childbirth and postnatal periods, performs birth on its own responsibility, provides neonatal care, and cooperates with women throughout life [3].

The aim of midwifery profession as a professional health discipline; advocate, practitioner, educator and researcher [4].

It should not be forgotten that midwives in the world have played a key role in the development of forensic nursing in recent years as a unifying and supporting role between medicine and the forensic. Forensic midwifery; the collection and protection of biological and physical evidence, the support and rehabilitation of victims and their relatives, the writing of a forensic report, the training and counseling of midwives/nursing services, and the role and responsibilities of preventing violence, as well as of victims of violence, trauma and other criminal events and trauma.

Despite the fact that the duties and responsibilities of forensic nurses in the world are defined within the scope of professional qualifications and ethical principles, there are no laws and regulations regarding forensic midwifery, so their fields of study cannot go beyond academic studies.

In this section we will examine the duties and responsibilities of the midwife who will meet forensic events.

## 2. Method

This chapter gives information about the scope and characteristics of forensic midwifery discipline, draws attention to forensic midwifery within the fields of forensic sciences and contributes significantly to the diagnosis, treatment and evaluation of forensic cases. This literature search included the midwives' duties and competences in terms of the factors affecting the health of women and pregnant women and having forensic dimensions (violence against women and pregnant women, etc.). Searches were conducted in PubMed, Cochrane and ScienceDirect, and included studies published in Turkey, English 2000–2018. Further studies were retrieved by detailed searches of the reference lists of identified articles.

## 3. Definition of forensic midwifery

Midwives, field work areas (obstetrics and gynecology clinics, child care and intensive care, child care centers, reproductive health clinics, family health centers, etc.) and legal responsibilities are taken into consideration.

The midwife is one of the health personnel who can see the first forensic evidence, who first see the individual in most judicial cases, who first contacts the family or relatives, touches his or her equipment during the examination, and contacts the laboratory specimens taken individually [5].

According to Hammer, during the forensic investigations where the midwives and nurses are not involved, the team members may not understand the emotional pain and trauma experienced by the victims when performing the legal procedures. Again according to Hammer, some characteristics of those who make medical examinations or who have the authority to impose legal sanctions are likely to be at risk of receiving improper care by the victims, their families and the factions. The approach of midwives to their emotional pain and trauma from the point of view of the mission of their profession is important in communicating with the victim and gathering evidence [6].

In this respect, the main duty of women and child health midwives in forensic events; it should not be forgotten that it will have important roles in history taking, physical examination, identification of evidence, collection of evidence, storage of evidence, provision of evidence protection chain, registration of evidence [7].

In this context forensic midwifery is; "Who monitors and reports traumatic injuries of victims (all age groups of women, pregnant women, postpartum, 0–6 age group) who are applying midwifery education and the knowledge and experience of clinical midwife practitioners using legal procedures for forensic medicine, the application area of forensic sciences working on the forensic cases, collecting evidence, analyzing the facts and evidence, taking part in the examination team of the sexual crime unit, working in a defendant and witness protection program, witnessing as an expert in the court and conducting scientific researches related to forensic midwifery studies" [8].

## **4. States showing characteristics of forensic midwifery**

### **4.1. Violence against women**

The midwife is in a far more strategic position, preventing the violence against women and the grounds for serving women in violent situations. Therefore, midwives have important duties in the early detection of cases of violence against women, and in the fact that women have acceptable ways of coping with the situation they are in, providing physical and psychological help [9].

WHO has listed the obligations of health workers in combating domestic violence against women as follows [10]:

- First, in the families where violence behaviors are experienced, the causes of violence and the assessment of possible risk factors.
- Emergency medical treatment for cases experiencing violent behavior and creation of social support environment.
- Police support in case of violence, participation of social workers, cooperation of health workers in cooperation with center help.

Midwife is a position that can provide adequate care for the victims, as well as nursing and emergency health nurses and public health nurses, in terms of domestic violence.

The first time the woman reports violence to her:

- The woman is examined, the trauma of the body is identified and the first intervention is made for the treatment.
- Make laboratory tests, radiological examinations and/or consultations as required.
- The hospital police are informed. The police station in the hospital starts the necessary judicial proceedings. This fact is considered a forensic case when the patient's health is impaired, when another person's careless, careless or negligent behavior or deliberate action is held responsible.
- The report records the examination findings.
- Fill in the registration form for domestic violence against women.
- If the patient decides on inpatient treatment, he will pay the appropriate service. If the hospital conditions are not sufficient for the patient and the physician considers it necessary, the patient will be referred to an advanced center. No patient can be discharged without urgent care without stabilization. In cases where necessary care is not provided, the patient and the relatives refer to the cause of the referral in detail and send the patient/injured with a suitable vehicle or ambulance after consultation with the interested physician in the hospital and the care guarantee.
- If the patient does not need to be hospitalized, the risk assessment is done. If the risk is not considered, the prescription is arranged and, if necessary, a follow-up plan is initiated by informing about the legal rights and the institutions that may be applied if there is a risk of violence again.
- If violence is considered to be a risk, the woman will be guided by the police to the institutions affiliated to the 'Social Services and Child Protection Agency' [11].

Midwives are also exposed to violence against women and violence against pregnancy in the work areas of nurses. Domestic violence during pregnancy; spouse/partner is defined as the threat of physical, sexual, economic or psychological/emotional violence applied by parents, siblings or other relatives to the pregnancy [12]. Increased maternal, fetal and newborn morbidity and mortality were associated with pregnancies exposed to physical, sexual and psychological violence during pregnancy. Domestic violence rates during pregnancy in international studies range from 1 to 20% due to cultural differences [13]. It shows that violence in marriage continues in pregnancy and that it is not obstructive to pregnancy in terms of physical violence [14]. According to WHO, it is inevitable for women to be exposed to violence during their pregnancies, as the search for domestic violence in communities cannot be done. Despite the prepared protocol, guidelines or special trainings on the subject, it is not routinely used by midwives, nurses and physicians [15].

In terms of midwives, the reasons for this situation; difficulties in defining violence, lack of information and education on family and pregnancy violence, lack of maintenance continuity, lack of time, recognition of social taboos and violence, evaluation of the evaluation outside of the tasks, authorities and responsibilities of the evaluation. However, the majority of women experiencing domestic violence in pregnancy acknowledge that the midwife profession is responsible for defining violence, providing first aid and adequate care. Midwives that working in women's health and maternity areas will create in their relationships with women; identification of the violence, evaluation of the incident, maintenance continuity and collection of evidence [13].

In this regard, midwives working in primary care should be able to identify risk groups and risk factors, particularly at the level of interrelationships between individuals, families and persons, to prevent domestic violence and direct women to supportive services to prevent the crisis [16].

Rape crimes show a ratio approaching 3% of all crimes per year in the World. The vast majority of those who have been attacked are concerned that the legal and medical systems may be inadequate and that this attack cannot be provoked by family members and society as evidenced by the family members and society, prefer to keep secret. In addition to the delays in the application of the forensic examination, the forensic examination equipment and devices may be inadequate, and the lack of knowledge and experience of the health care personnel may result in inadequate evidence [17]. A victim of sexual assault can cause tragic and traumatic events as well as almost sexual assault in a hospital where they are referred to on complaint. On the other hand, victims are kept in emergency services for hours, sometimes not available, and the fact that the clinics are referred to other cities or districts for reasons of inadequacy, while the judicial proceedings and the necessary evidence for the courts to be convened with appropriate methods must be meticulously and promptly collected. It is important to educate midwives who have been trained to ensure that the needs of all victims of child or women exposed to sexual assault in this stage are met accurately and completely.

The scope of the examination for sexual violence is also defined below:

- Informing the patient and taking his/her request.
- Taking the detailed history of the patient, including events that can be classified as sexual violence.
- Exact "top to bottom" physical examination.
- Detailed examination of the sexual organs and anus region.
- Recording and classification of identified injuries.
- Collection of identified medical samples for diagnostic purposes.
- Acquisition of forensic specimens.
- Influence of the obtained evidence in terms of the protection, packaging and delivery of necessary places.

- Investigation of psychological support possibilities and provision of magic (may be close to).
- Implementation of regulations regarding patient follow-up after examination.
- Bringing together all documents related to the patient and archiving.
- Preparation of medical and judicial reports (Authorized institutions) [18, 19].

According to Royal Midwifery College, the importance of ebelerin in the medical approach to violence victimized pregnancies is emphasized [20]. It also describes the approach of Ebecer from the forensic clinic staff as a professional healthcare provider to victims of sexual abuse according to the Guidelines for Forensic Clinical Approach to the Irish National Sexual Assault Victims [21].

“The role of health personnel in combating domestic violence against women and procedures to be implemented” is given for the personnel (doctors, nurses, nurses) who work in emergency services of institutions and hospitals in countries. However, these trainings should not be limited to the staff working in the emergency service but should be given to the women and children who work in the health field in all steps.

#### **4.2. Substance dependency in pregnancy**

Abuse of the substance is an important public health issue that concerns societies all over the world. There is also an increase in the use of drugs in females, such as smoking and alcohol. Cigarettes, alcohol and substance abuse are common in pregnant women who are particularly exposed to violence, and there are delays in taking prenatal care or applying to a health institution.

Substance use during pregnancy, maternal risks, fetal physical and mental problems increase, antenatal follow-up is also missing compared to other pregnancies. According to the 2005 National Survey on Drug Use and Health (NSDUH), among women between 15 and 44 years of reproductive age, the rate of substance use in pregnant women is 4% and in non-pregnant women is 10% [22]. It is estimated that between 20 and 30% of cigarette consumption, 15% of alcohol consumption, 3–10% of cannabis use, and 0.5–3% of cocaine use are among pregnant women [23]. When substance use in pregnancy is encountered, a multidisciplinary approach should be included in the patient evaluation of the midwives, together with the obstetrician, psychiatrist, public health specialist and pediatrician.

The most used items in pregnancy are alcohol, cocaine, opiates, amphetamines and cigarettes. Although the mechanism of fetal alcohol consumption, fetal pathophysiology and teratogenicity is not well known, alcohol itself or its metabolite acetaldehyde is considered to be one of the main factors affecting fetal development. The limit value that will lead to anomaly formation has not yet been determined. Alcohol affects the growth and development of the fetus by reducing protein synthesis [24].

Alcohol increases spontaneous abortion and stillbirth during pregnancy. Alcohol use in western societies is the leading cause of mental retardation. In the United States, 1 in 100 births

is affected by it. If the mother consumes 4 drinks per day during pregnancy, the risk of fetal alcohol syndrome is 20%, 8% is 50% in domestic.

The definition of fetal alcohol syndrome (FAS) was first described in 1973. It contains a number of congenital anomalies that are associated with chronic alcohol use during pregnancy.

This syndrome should contain one or more items from each group of statements collected in the three main headings.

1. Intrauterine and/or postnatal growth retardation
2. Craniofacial anomalies
3. MSS dysfunctions [24, 25].

Alcohol dependence should be explained to the mother, frequent prenatal control should be done during the pregnancy, ultrasonographic examination should be repeated for follow-up. The patient should be included in counseling and rehabilitation programs.

Cocaine-induced cardiovascular effects in pregnancy are more pronounced due to increased progesterone. For the first time in 1985, the relationship between cocaine use and fetal anomaly in humans has begun to be investigated. One study shows an increase in the risk of minor anomalies by 1.6, major anomalies by 4.99, and urogenital anomalies by 6.5 times. Its use in pregnancy is a serious public health problem in terms of maternal, fetal and neonatal risks. The risk of placental abruption in cocaine-using pregnancies is significantly higher. This can be explained by reduced placental perfusion due to increased vasoconstriction in uterine vessels. Premature rupture of membranes, premature labor, intrauterine growth retardation, and the incidence of meconium and spontaneous abortion in amniotic fluid have also increased in cocaine-exposed pregnancies. Migraine attacks and hyperthermia are also detected during the mother's pregnancy. The fetus increases the risk of intrauterine cerebral infarction and urinary tract anomaly. Sleeping, eating disorders, hypertension, tremor can be seen in long-term follow-ups of these children. The rate of cognitive impairment in adolescents increased in these children. HIV and other infections may also be passed on to the child during maternal pregnancy [26].

Opiates, including morphine and codeine, are obtained from the poppy called *Papaver somniferum*. Opioid includes synthetic narcotics such as heroin, meperidine, fentanyl, propoxyphene and methadone. According to 2010 National Survey on Drug Use and Health, the rate of drug use in the United States is 4.4%, and heroin use is 0.1%. Perinatal complications of opioid use include intrauterine growth retardation, preterm delivery, fetal death, small head circumference, low Apgar score, meconium in amnios fluid, premature rupture of membranes and chorioamnionitis [27].

Amphetamines stimulate the sympathetic nervous system by increasing neurotransmitter release from the presynaptic terminal. Oral, iv or smoking can be taken. In a study involving women who did not use amphetamine in their pregnancy and those who did not, there was an increase in anemia, preterm birth, meconium amniotic fluid, and intrauterine growth retardation

rates according to the control group. Its use in pregnancy poses significant risks to both mother and fetus. In addition, when children who were exposed to intrauterine amphetamine were examined, a 1-year delay was found in school achievement at 14–15 years of age [28].

About 250 million women smoke in the world. Nicotine and carbon monoxide adversely affect the development of fetus. Nicotine reduces vasoconstriction and uterine artery blood flow, while carbon monoxide reduces oxygen transport to fetal tissues. Circadian cyanide levels are higher in smokers and this substance has toxic effects on dividing cells. There is a relationship between low cigarette smoking, ectopic pregnancy, fetal growth retardation, ablative placenta, preterm birth, early rupture of membranes and low birth weight in pregnancy. Perinatal mortality is more than 150% [29].

Use of drugs by the health personnel and their awareness of the effects on the pregnant, fetus and newborn may enable them to be vigilant in this regard and take an active role in the policies to be set up for the prevention. In the determination of maternal substance and metabolites used in the baby, blood, urine, gaita saliva and hair analysis should be done besides mother's story. Although urine and blood tests provide information on the substance currently being used, hair analysis also gives an idea of the use of substances in the past. It is stated that newborn infants should not be satisfied with urine analysis but also meconium examination should be done. There are research findings indicating that substance metabolites have been detected in meconium of negative cases [29].

Knowledge of the characteristics of women with substance abuse is important for early detection and intervention of risk groups. These features:

- Women who have not had a positive relationship with their parents.
- Those who have not seen a positive parental role model.
- Those who have lived in an environment where domestic violence has been practiced.
- Those who have experienced physical, emotional and sexual abuse and neglect in the family environment.
- Parents are drug addicts.
- In marriage, they are abused by their wives. Detection of pregnant women in early period and pregnant women using substance should be taken into intensive prenatal care program and substance use in pregnancy should be informed about adverse effects on fetus and mother.

## **5. Forensic midwifery roles and responsibilities**

Forensic midwifery is a new concept and is a concept used together with medicine, law and criminology. It can also be seen as an example of innovation in terms of expanding the roles of midwives in the field of women's health and safety.

In this respect, the tasks of forensic midwifery; suspicion of violence against women and children, identification of statements, gathering of evidence, crisis intervention, and directing the necessary actions.

In this regard, midwives can work in emergency rooms, suicide prevention centers, rape crisis centers, crime scene investigations, death investigations, prisons, law offices and forensic pathology laboratories and at the same time as expert witnesses in court [17].

While the forensic midwife performs its roles and responsibilities, she is accompanied by a forensic team consisting of forensic scientists, forensic scientists, psychologists, gynecologists, social workers, members of the judiciary (judges, prosecutors, lawyers) and security members (police, gendarmerie) can work. In addition, forensic nurses can work with Forensic Medicine Institution, Forensic Medicine Institutes and expert institutions [30–33].

### **5.1. Collection of physical evidence**

Evidence collection is one of the processes that are important in a review and the midwife is part of this process. The midwives should be sure that nothing has been missed by taking part in each of the techniques and stages of evidence collection. Criminal cases such as murder, rape, rape, traffic accidents are first applied to emergency services. Forensic midwives are inadvertently served by the investigator/investigator when a victim is brought to the emergency service. At this stage, the midwives evaluate and record all the data about the victim and the medical conditions, bruising, cuts, lacerations and places that require treatment. Forensic examinations may be assisted by civil servants in the case of saliva, sirens, lead, the removal of bullets from the body, and the evaluation of clothes and items of the victim for further examination. When physical evidence is collected, gloves must be worn to minimize contamination and to observe basic techniques and procedures. Anything remaining at the scene must be collected, and evidence that DNA analysis can be performed should be obtained by appropriate techniques.

They have more favorable conditions than other healthcare team members, such as having nursing nurses on the collection, preservation and storage of medical evidence. The midwives' sensitive attitudes about the collection, preservation and protection of forensic evidence provide for the identification and reporting of healthier and richer evidence in the judicial investigation process [34–36].

### **5.2. Record of evidence**

It must be ensured that the medical records that are held are legally available. It should be avoided that the terminology is such as to ignore the evidence. The victim must use his/her expressions directly when taking the statement. The prescribed medical treatments should be recorded, the bruises and injuries should be indicated by color, number and size [34–36].

### **5.3. Storage of evidence**

Health care institutions should develop procedures for recording and tracking suspect deaths. Standard practice procedures should be developed and the team should know how to act in a

suspicious situation. All health professionals should know how to protect evidence and how to behave in judicial cases and follow these procedures [34–36].

#### **5.4. Provision of evidence protection chain**

As you walk through the evidence, each person should record the date and time they opened the package. In this way, the disappearance of evidence can be prevented. You should be asked to write the name, surname, job and department you are evaluating. The duration of the evidence chain and evidence must be kept as short as possible. Precautions must be taken to ensure that the evidences are not altered and that they are not affected by external conditions when the collected evidence is sent into or out of the institution [34–36].

#### **5.5. Testimony in court**

Forensic examinations can be witnessed in courts. If the midwife is called as a witness to a court; should be consistent with the written statements and the resulting physical evidence collected. The use of improper terminology can make it more difficult to enlighten. The terms used in the emblem should be in a way that everyone understands, and the possible causes and mechanisms of injury should be understood and explained appropriately. It should be avoided to give an idea about the issues outside the field of expertise. By following these steps and collecting the appropriate evidence, the victim's fear of the legal system can be avoided [37, 38].

In this context, we can list the specific areas where judges can fulfill their roles and responsibilities as follows;

#### **5.6. Clinical forensic midwifery**

Midwives working in emergency services intervene especially in victims of trafficking or victims. Forensic midwives working in this location are responsible for the care and treatment of the patient during the period between the hospital and the discharge of the patient, the collection and storage of the forensic evidence, the accurate and complete medical records, the taking of the prosecutor's office and court order for biological and chemical examinations, to be properly removed and stored, and to collect information and evidence in accordance with the relevant regulations [30, 32, 34, 37, 38].

#### **5.7. Sexual assault examination midwifery**

They are specializing in special care and treatment for victims of sexual assault. Among his tasks are; to investigate sexually transmitted diseases and to advise the victim on this issue, to collect, store and transmit the forensic evidence, to help the victim, to evaluate the injuries, to take medical narratives, to make physical examinations, to record criminal information.

The legal process midwife should be a professional who is helping the family in this abusive process, treating medical records and photos in child abuse, monitoring criminals in hospitals, watching victims in courts or nursing homes [31, 32, 34].

### **5.8. Pediatric forensic midwifery**

This field of midwife is responsible for monitoring the possibility of events such as acceptance and evaluation of child abuse and neglect cases, treatment, referral to preventive service units, domestic violence, battered child syndrome and sudden child death, monitoring and rehabilitation of the victim. Midwives are responsible for providing care to children who need help with issues such as abuse, neglect and violations of human rights. While they should provide care for children, it should be carefully assessed to see if there are any signs and symptoms of children experiencing ill-treatment [36, 37].

### **5.9. Obstetrics and gynecology forensic midwifery**

This field-based midwife is responsible for taking and recording accurate and complete stories about the physical and psychological trauma of women, domestic violence, assessment of substance abuse in pregnancies, general follow-up of pregnant women allegedly traumatized, low, early or stillbirth- and as a witness when necessary [36, 37].

### **5.10. Midwifery in rape crisis centers**

The nurse working in this area is required to make a visit to sexually assaulted persons, to ensure that evidence is collected and maintained in a proper and appropriate manner, to provide information to the victim and his relatives at every stage of the treatment, to ensure that the victim is safe to leave the center, to serve him in the rehabilitation and presentation of the place to stay at the center until he comes from the center [36, 37].

### **5.11. Expertise**

Forensic midwives should be able to function in the application of neglect and malpractice and medical records.

## **6. Discussion**

Midwives' activities are medical interventions and the conditions of activity and legal compliance are the same. Midwives who provide health care are the persons who are trained to provide medical services, are authorized to take medical care in the area where they are qualified and responsible for this action. Therefore, the important duties of the midwife in the diagnosis, treatment, rehabilitation of the factors that affect the health of women and pregnant (such as violence, rape, dependence) and the transfer of information between institutions (such as forensic institutions) are determined by the laws and regulations of the countries. The concept of forensic midwifery is important in terms of the effective use of the roles of advocates, practitioners, educators and researchers. Therefore, although the duties and responsibilities of the forensic nurses in the world are defined within the scope of occupational characteristics and ethical principles, they should add studies on the forensic midwives to the theoretical and practical applications of midwives working in the field of women's health.

## 7. Conclusion

The addition of forensic midwifery to the undergraduate and postgraduate midwife education curriculum, the issuance of necessary laws and regulations on the subject and the regulation of scientific research, courses and seminars will contribute to the development of forensic midwifery.

In this respect, forensic midwives, midwives with licensed professional licenses should be formed. In addition, after attending regular undergraduate midwifery trainings, they must become specialized and participate in courses in the field of forensic sciences and must be trained on issues such as the protection of physical evidence, identification of injury, and detection of laws.

As a new area of expertise, forensic midwifery serves as a bridge to closing the gap between law and medicine. The need for a forensic midwife will become more and more likely to perceive and accept the critical and important role of the forensic midwife in establishing the link between civil servants, lawyers, other health professionals, the law and the health system within the justice system [38].

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