

Article

The Midwifery Student's Observations about the Implementation of International Guidelines and Protocols in Greek Maternity Hospitals

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Abstract: Background: Childbirth is a unique experience in a woman's life and always remains indelibly engraved in her memory. For this reason, it is necessary to ensure appropriate conditions to have a positive birth experience. Thus, guidelines and protocols have been developed by major international organizations that aim to promote normal labor and better care for the mother and fetus without unnecessary interventions. The aim of this study is to investigate whether the international guidelines and protocols are observed in Greek maternity hospitals. Methods: The study involved 124 male and female students from the three departments of Midwifery: University of West Attica, International Hellenic University and University Western Macedonia, which completed an equal number of self-report questionnaires with their socio-demographic data and were then asked to answer questions posed by instructions for normal childbirth. Results: It was observed that many of the guidelines are not followed, such as grooming and enema, prohibition of feeding and fluid intake, application of pressure on the bottom of the uterus, frequent vaginal examination, prohibition in the presence of sessions, continuous cardiotocographic follow-up in low-risk pregnancies, termination of delivery only in a supine gynecological position, routine perineotomy and immediate ligation of the umbilical cord. Conclusions: The purpose of the guidelines is to maintain the natural course of childbirth by avoiding a series of unnecessary acts that alter the naturalness and undermine the rights of women in childbirth.

Keywords: guidelines; protocols; normal delivery; medical delivery; cesarean section; midwife; midwifery care; midwifery students



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1. Introduction

The purpose of midwifery education is to prepare midwifery students to enter the midwifery profession with the skills needed to provide safe and high-quality documented maternity care to women experiencing normal pregnancies and deliveries while also supporting complex pregnancies and deliveries, according to the International Confederation of Midwives (ICM) [1]. The basis of midwifery education is mainly concerned with full-time training based on international standards, aiming at acquiring knowledge and skills related to obstetrics, adequate knowledge of the ethics of the profession, sufficient knowledge of general medical knowledge and sufficient clinical experience acquired in approved institutions [2]. However, midwifery education differs significantly between countries, considering that it is influenced by society, the needs of women and the context in which midwives work [3].

The majority of midwives in Greece work in maternity wards. However, midwives can also work in the community or as independent midwives for home births.

The period of pregnancy is for midwives the opportunity to promote women's health in the short and long term, with a positive impact on Public Health so that midwives can

have a significant impact on pregnancy, childbirth and the postpartum period. Thus far, there are several guidelines [4], interventions [5] and recommendations on antenatal [6,7], intrapartum [8] and postnatal care [9,10], which midwives are called upon to apply for optimal midwifery care [1].

In Europe, there are several deaths each year due to pregnancy or postpartum complications. Many of these deaths and related morbidity can be avoided through appropriate maternity care and midwifery interventions. In recent decades, much has changed, and many of the changes have arisen from questioning many interventions that had previously been considered to be appropriate or even essential. Therefore, informed midwifery interventions are aimed at allowing those who care for women in pregnancy, labor and the postnatal period to gain a deeper understanding of such care for women, newborns and their families [11].

More specifically, the European Midwives Association (EMA) [4] developed some guidelines for low-risk births [12]. According to this report, normal childbirth is defined as spontaneous labor and delivery, and the neonate is born spontaneously in the vertex position between 37 and 42 weeks of pregnancy. After the birth, the mother and infant are in good condition. The report also supports the encouragement of the woman by a person of her own during childbirth, informing pregnant women about the organization of the maternity unit and informing pregnant women about the various stages of labor and the practices applied in the delivery room.

The Royal Australian and Zealand College of Obstetricians and Gynecologists [5] prescribed interventions during childbirth on assisted delivery, episiotomy and induced labor. In more detail, concerning the induction of labor, the reasons may include multiple pregnancies, diabetes, kidney problems, high blood pressure or when a pregnancy is past 41 weeks. Furthermore, an episiotomy may be recommended if the fetus develops a condition known as “fetal distress” and not as a routine.

World Health Organization (WHO) [6] published its comprehensive recommendations on routine for antenatal women in 2016. In accordance with a human rights-based approach, the guidance is intended to respond to the complex nature of the issues surrounding the practice and antenatal care, giving priority to person-centered care and well-being—not only the prevention of death and morbidity.

This guideline, published by WHO in 2018 [8], highlights the importance of woman-centered care to optimize the experience of delivery for women and their infants through a holistic, human rights-based approach. It introduces a global model of intrapartum care, which takes into account the complexity and diverse nature of prevailing models of care and contemporary practice. The report published by WHO on Postpartum care of the mother and newborn [9] includes a view of maternal and infant needs at a time that is decisive for the life and health of both the mother and her child.

NICE guidelines aim to reduce variation in maternity care and support practitioners in developing appropriate plans of care in partnership with women during the perinatal period [13,14].

However, the ICM has developed global standards, wishing to promote the mechanism that protects women and their families by ensuring that midwives provide high midwifery standards [15]. More specifically, ICM Position Statements describe the beliefs and principles of the Confederation, along with guidance for midwives. This includes issues that relate to the midwifery position, maternal and neonate health, or socioeconomic issues. International guidelines, recommendations and protocols constitute the framework of the midwife's practice in all contexts. They do not apply only to specific countries or regions and recognize the differences that exist worldwide at the level of health services available within and between countries [8].

In Greece, at present, based on the lack of available data from the literature, it is impossible to accurately determine the observance or not of the guidelines and protocols by maternity hospitals. However, the current knowledge about the Greek situation is based mainly on a few observational studies on cesarean section rates [16], which reach 60%

and far exceed the WHO guidelines [17]. Given that this whole situation may indicate a malfunction in the implementation and observance of midwifery care protocols, it was considered appropriate to conduct a study to investigate this current situation. Therefore, the aim of this study is to investigate whether the international guidelines and protocols are observed in Greek maternity hospitals.

2. Materials and Methods

This cross-sectional study took place from June to May 2021 through a Google Form platform. It was approved by the University of Western Macedonia Ethics Commission. Approval: 53-2021. The present study uses a self-report questionnaire which was distributed electronically to all students from 3 midwifery departments after informing them of their confidentiality.

2.1. Participants

The sample of the study consisted of 124 undergraduate students of the three Greek Midwifery departments: University of West Attica, International Hellenic University and University Western Macedonia, who have attended clinical workshops in delivery rooms in public universities or general hospitals throughout Greece. Table 1 shows the characteristics of the student sample. The reason that students were selected and not specialists for the study was that graduate students are just finishing a curriculum based on international midwifery practices and are required to apply through their internships at maternity hospitals.

Table 1. Sample characteristics.

Gender	Age	Frequency
Man	>30	0
Woman	>30	6
Man	21–25	1
woman	21–25	106
Man	25–30	0
woman	25–30	11

2.2. Data and Measures

The data were obtained from a questionnaire that was divided into four parts:

- Demographic characteristics. This section of the questionnaire includes questions about the student's demographics, gender, age, university, current semester of study, and the type of hospital (general or university) internship or clinical practice;
- Introductory questions. General questions are included in this section. Two multiple-choice questions with more than one answer, 1 multiple choice question and linear scale questions 8 "from 1 (never) to 5 (always) how often do you notice the presence of a companion during childbirth" and 9 "from 1 (never) to 5 (always) how often midwives carry out childbirth on their own";
- Guidelines for the 1st and 2nd stages of delivery. Specifically, it contains 9 multiple choice questions and 6 linear scale questions 13 "from 1 (never) to 5 (always) how often do you observe continuous cardiotocography in low-risk women", 17 "from 1 (never) to 5 always which methods of analgesia (epidural analgesia, opioids, nitrous oxide, relaxation techniques, water, hypnosis, change in position, movement) are observed to be used more often", 20 "from 1 (never) to 5 (always) how often is labor induced over 41 weeks of pregnancy", 21 "from 1 (never) to 5 (always) how often do you notice induction of labor below 41 weeks in low and high risk of pregnancy", 22 "from 1 (never) to 5 (always) how often do you observe childbirth in different positions besides the supine gynecological position" and 24 "from 1 (never) to 5 (always) how

often are the following techniques used (perineal massage, hot compresses, perineal support, perineotomy) to avoid perineal ruptures”;

- (d) Guidelines for the 3rd stage of delivery and neonate care. This section of the questionnaire included the guidelines for the 3rd and 4th stages of labor, and there are 10 multiple choice and 1 linear question from the newborn’s nasopharynx immediately after birth.

In order to ensure the face validity of the questionnaire, the supervising professor (midwife) of the dissertation and the competent authority of the University of Western Macedonia were assigned the task of checking how appropriate the questions are for the purpose of the research and suggesting some changes. The corresponding bibliography was used to formulate the questionnaire, and we used the guidelines for the normal birth of the World Health Organization, which were translated into the Greek language to be used in the questionnaire.

2.3. Statistical Analyses

The statistical program was used for the statistical processing of the data SPSS 22. In each statistical test, we used 0.05 as the level of statistical significance. The statistical tests selected to check the statistical significance of the research variables are the χ^2 test and the binomial test, which were used in the crown work to estimate the difference between the variables in terms of their occurrence rates. The binomial test is always used between two percentages, and since we have a sample $n = 124$, we can use it in any comparison.

3. Results

Data from 124 undergraduate students, the majority of whom were women aged 21–25, were analyzed. The results with positive answers according to the students’ views are presented in Table 2.

Table 2. Affirmative answers regarding the application of midwifery practices.

<i>n</i> = 124	95% CI	<i>p</i> -Value
	% YES	
Grooming before	79% (70–85%)	<0.0001
Enema before	85% (78–91%)	<0.0001
Feeding/per os liquids	13% (7.5–20%)	<0.0001
Encouraging position change	56% (47–65%)	0.1777
Encouraging pushing	44% (35–53%)	0.1777
Pressure at uterus bottom to accelerate 2nd stage labor	80% (71–86%)	<0.0001
Contact with mother—1st breastfeeding	52% (43–61%)	0.52
Vitamin K to neonate	93% (87–97%)	<0.0001
Preventive antibiotics	46% (37%–55%)	0.42
Antibiotics following episiotomy	71% (62–79%)	<0.0001
Close follow-up of postpartum	80% (72–87%)	<0.0001
Administration of uterotonic drugs to avoid hemorrhage	97% (93–99%)	<0.0001
Always the same person for vaginal examination	11% (6–18%)	<0.0001

Percentage difference YES/NO.

When asked, “if you have noticed that women are being groomed before giving birth?” Yes/No, the majority of students answered “Yes”. More specifically, 79% of students stated that they had noticed that women were groomed before giving birth, while 21% had not. There is a statistically significant difference between the percentages of women who were raped (p -value < 0.0001). To the question “if you have noticed women being given an enema before giving birth?” Yes/No, the majority of students answered “Yes”. However, 85% of students stated that they had noticed women being given an enema before giving birth, while 15% had not. The results show that there is a statistically significant difference between the percentages of women who were given an enema (p -value < 0.0001). Furthermore, 13% of students stated that women were given the opportunity to eat and receive oral fluids, while 87% were not. Therefore, there is a statistically significant difference (p -value < 0.0001). As shown in Table 2, 79% of students reported having observed the application of pressure to the bottom of the uterus to accelerate the 2nd stage of labor. However, there is a statistically significant difference between the two percentages (p -value < 0.0001). In addition, 93 students stated that an intramuscular injection of vitamin K was given to the newborn. Therefore, there is a statistically significant difference between the two percentages (p -value < 0.0001). Furthermore, the majority of students stated that they had observed close surveillance and monitoring of women after labor since 80% of students responded positively (p -value < 0.0001). In addition, the answer to the question proved to be just as important as the one “If they are given contraceptives to prevent postpartum hemorrhage”. The results showed a statistically significant difference (p -value < 0.0001), as 98% of students answered positively. As shown in Table 1, 11% of students stated that they had noticed that the vaginal examination was always performed by the same person, while 89% had observed that it was performed by a different person. The binomial test showed that there is a statistically significant difference between the two percentages (p -value < 0.0001).

As shown in Table 3, the majority of female students stated that they had not usually noticed the presence of a companion. More specifically, 81% of students stated that a companion was “Never” to “Rarely” noticed. As a result, there is a statistically significant difference between the two percentages (p -value < 0.0001). Moreover, the majority of students (89%) reported that normal delivery was not usually performed by midwives; thus, there is a statistically significant difference between the two percentages (p -value < 0.0001). However, 7% of students also reported that continuous cardiotocography was not usually performed on low-risk women. Another factor that also proved to be statistically significant is induced labor before 41 weeks. In more detail, 32% of students stated that labor was induced from “Never” to “Rarely”, so there is a statistically significant difference between the two percentages (p -value < 0.0001). On the question “How often do you see labor in different positions besides the supine gynecological position”, a percentage of students (96%) stated that labor is not usually seen in different positions besides the supine gynecological position.

Table 3. Negative answers regarding the application of midwifery practices.

	% Never-Rarely	
Companion	81% (73–88%)	<0.0001
Midwives perform normal childbirth	90% (82–94%)	<0.0001
Continuous cardiotocography at low-risk pregnancy	7% (3–13%)	<0.0001
Labor induction >41 weeks	32% (24–41%)	<0.0001
Labour in different posture	96% (91–99%)	<0.0001
Aspiration of secretions in neonates	38% (30–47%)	0.011

Percentage difference % Never-Rarely.

According to Table 4, two questions were asked related to how often the students noticed induction of labor in less than 41 weeks. The first one is on low-risk women, and the second is on high-risk. With an average of 3.27, we conclude that in low-risk women, labor induction in less than 41 weeks is “Frequent”, while with an average of 3.59 in high-risk women, it is “Quite Common”. The Welch t-test for the two means resulted in a p -value = 0.02 < 0.05, so there is a statistically significant difference between the two means. In other words, there is a distinction as to the frequency that labor is induced, depending on the risk.

Table 4. Difference between low-risk and high-risk groups.

Difference between low-risk and high-risk groups for labor induction	Low-risk: Frequently High-risk: Quite frequently	0.02
More frequent analgesia method: epidural	43%	<0.0001
More frequent technique to avoid perineal rupture: episiotomy	56%	<0.0001
Midwives offer more frequently: support	28%	0.63
Factors affecting protocol application: staff and time	34%	0.0003
Vaginal examination: every 2 h	48%	<0.0001
Placenta delivery actively	35% (26–44%)	0.0008
Placenta delivery actively with manipulations	40%	0.24
Umbilical cord ligation immediately after birth:	76% (67–83%)	<0.0001
First bath: after 24 h	68%	<0.0001

The question “Which analgesia methods do you notice to be used most often” received eight answers (Epidural analgesia, Opioids, Entonox, Relaxation techniques, Water, Hypnosis Position changes or Movement), for which we obtained the highest score (most common). The control has a p -value < 0.0001. Therefore, epidural analgesia is definitely the most common method of analgesia. From the four possible answers to the question “How often are the following techniques used to prevent perineal ruptures?”, perineal massage, hot compresses, perineal support or perineotomy, the control has a p -value < 0.0001. Therefore, Perineotomy is definitely the most common technique to prevent perineal ruptures.

The question “What factors do you think influence the successful implementation of the protocols” received five answers (personal time, logistics, instruction content, professional autonomy and freedom, defective staff training. For completeness, we apply the χ^2 test to ensure a statistically significant difference in the distribution of responses. The control has a p -value = 0.0003. Thus, lack of staff and time is the most common factor of influence. The same applies to the question “How often does the vaginal examination take place?” (<1 h, 2 h, 4 h). The test has a p -value < 0.0001. Therefore, «more often» means every 2 h.

The question “Do you notice the placenta coming out more often actively or conservatively”, The binomial test finds that the difference in the percentages of answers, 35% and 65% for Active and Conservative, respectively, is also statistically significant. In addition, the question “Do you notice umbilical cord ligation more often immediately after delivery or later” the binomial test (76% and 24%), respectively, proves a significant difference between the two percentages, with a p -value < 0.0001. Therefore, umbilical cord ligation is most often performed immediately after delivery. Finally, the question “When do you see the

newborn take its first bath after birth”, received the answers (>24 h after birth, 2–4 h after birth, immediately after birth). According to the results, the neonate takes its first bath after 24 h, as the *p*-value of the chi-square test is less than 0.0001. Thus, the neonate’s first bath is observed to occur more often after 24 h after birth.

4. Discussion

Although the guidelines and protocols were compiled to create better birth experiences for women and to increase normal births, it is striking that many of the guidelines are not followed by midwifery staff. As claimed by the student’s observation, there are some practices that are not followed by midwives and gynecologists. For example, according to the students’ observation, there was almost never a companion as per the woman’s wishes for this very special moment of her life, and not enough privacy was provided for the woman.

It was also observed that vaginal examination, which is an essential method for assessing the progress of labor, does not occur every 4 h, as recommended by the WHO [8,18–21], but was observed at a more frequent rate every 2 h or less. In addition, freedom of choice seems to be almost non-existent during childbirth. For example, the performance of the enema in all women before childbirth, although it should be discouraged as it is proven in the literature that the enema causes dissatisfaction [22,23]. Similarly, grooming before giving birth does not seem to differentiate the effect of infections in women and newborns; on the contrary, they cause side effects, such as irritation, erythema, abrasions on the skin due to increased pain and equally dissatisfaction [24,25].

Another burning issue is the parturients diet. The results of the study showed that women were not fed as defined by international protocols and guidelines. However, labor itself is a condition that can last for several hours and requires a lot of energy in order not to disturb the health of the mother and the fetus. Fear of urgency and, consequently, the need to use general anesthesia on a full stomach and the risk of aspiration caused staff to be more cautious and prohibit the intake of food and fluids by mouth. Thus, in order to prevent possible dehydration and ketonuria, women receive glucose intravenously, but according to randomized studies [11,26], in large quantities, it was observed: “in the mother blood serum rise in mean glucose levels, accompanied by an increase in insulin levels and in the fetus also an increase in glucose levels, which can lead to a drop in pH in the arterial blood of the umbilical cord and hyperinsulinemia that occurs when glucose intake is high, resulting in neonatal hypoglycemia and high blood glucose levels on newborn”.

Moreover, intravenous fluids, continuous cardiotocography and the supine position are routine methods during childbirth, according to midwifery students, in contrast to international guidelines. However, intravenous fluids in combination with continuous cardiotocography, which is the main method of monitoring fetal heart function, make it more difficult to move and change positions and postures of women [8,27]. This is why it is recommended that women be encouraged to adopt any position they desire, which will be most comfortable and comforting for them and to avoid the supine position as it delays childbirth due to the fact that the intensity of the contractions is reduced. However, a different position from lying down for birth is almost never observed, as it is the most convenient for the staff but not always for the woman [8,28,29].

In addition, the induction of labor occurred in the majority of cases before the 41st week of pregnancy. However, labor induction at low risk of pregnancy is recommended after 41 weeks to avoid the complications of prolonged labor and not earlier; however, it is quite common for women to undergo labor induction under 41 weeks, which can lead to a number of interventions [30–32]. Labor induction intensifies labor pains, as a result of which the pain becomes even more intense. In our hospitals, epidural analgesia seems to be the main method of pain relief, which is recommended to be performed at the request of the mother. In this case, the mother should be strongly informed that this method of analgesia is associated with prolonged first and second stages of childbirth and with invasive delivery. Expectant mothers, on the other hand, should be encouraged to

use non-pharmacological methods, such as relaxation techniques, massage, freedom of movement and posture, water and hypnosis, which are intended to distract the woman from pain and thus offer relief [8,33,34].

At the same time, the large percentage of pressure on the bottom of the uterus to accelerate the second stage of childbirth, with the ultimate goal of accelerating childbirth, can cause uterine rupture, sphincter rupture, perineal trauma of the mother and, respectively, in the newborn's shoulder dystocia, mesh arm and increased risk of suffocation [8,35,36].

Regarding umbilical cord ligation, in contrast to what was observed, a delay is recommended as it has significant benefits for full-term and premature infants and, at the same time, does not increase the risk of postpartum hemorrhage. In premature infants, delayed ligation is associated with improved circulation, better red blood cell volume formation, reduced need for blood transfusions, a lower incidence of necrotic enterocolitis and intra-abdominal bleeding [8,37]. In addition, for the best thermoregulation of the newborn, the first bath is recommended to take after 24 h; this is attributed to the fact that the fetal sebum present in the newborn's skin reduces the risk of infection, helps stabilize blood sugar and helps to strengthen mother-infant connection and breastfeeding [38–40].

On the other hand, some of the guidelines seem to be followed by Greek maternity hospitals. For example, midwives are usually quite supportive; they respect women and inform them immediately during childbirth, creating a climate of trust. Furthermore, when entering the 3rd stage of labor, as seen, the placenta is usually removed conservatively. In accordance with international guidelines and protocols, in women who are not at high risk of bleeding, it is recommended to remove it conservatively, waiting for the placenta to detach on its own without administering contractions for up to 60 min as is usually the case according to our research. If the detachment is performed actively, the administration of matrices and the application of various manipulations such as pulling the umbilical cord and massaging the bottom of the uterus are observed. In this way, the risk of bleeding can be significantly reduced, but there is a risk of uterine rotation, placental retention and umbilical cord amputation, which makes these manipulations dangerous [8,41,42].

As far as breastfeeding is concerned, it seems that international protocols are observed, and the majority of neonates breastfeed within the first 30 s after birth, according to WHO recommendations [43], while aspiration of secretions into neonates is avoided [44]. Regarding the first bath of the neonates, the practices in the Greek maternity hospitals seem to be harmonized with the international protocols and guidelines and usually perform the first bath of the newborn after 24 h [45].

5. Conclusions

This is the first study conducted in Greece regarding the observance of international midwifery protocols through the observation of students. We can see that many of the guidelines are not accepted and implemented by maternity staff, while the protocols concerning the newborn's first bath, breastfeeding and close monitoring of the postpartum woman seem to be supported by the Greek maternity hospitals. According to the student's observation, this is attributed to the lack of staff in the Greek maternity hospitals and, at the same time, to the lack of time they have because the care is not based on a woman-midwife basis, but a midwife is called to take care of more than one parturient. Inviting health policymakers to reflect on the results of the study, we aim to prioritize adherence to international protocols during childbirth. Focusing on these needs of the obstetric care system, we emphasize the need for in-service obstetric education; we aim to improve the skills of the staff, which in turn will contribute to improving the quality of care provided.

The small size of our research sample clearly does not prove that Greek maternity hospitals are underperforming, nor is there any attempt to generalize the results. However, we cannot ignore the great shortage of staff, the non-execution of vaginal deliveries by midwives and the high rates of cesareans deliveries that reach rates above 50% [46]. In the future, it would be interesting to investigate this issue further in related studies in order to be food for thought for health professionals.

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