



# The Awareness and Attitude of, Midwives Working in Private Offices in Tehran Province, Iran Toward Abortion Laws and Related Factors

Masoumeh Name<sup>1</sup>, Mahbobeh Ahmadi Doulabi<sup>2\*</sup> , Asiye Jafari<sup>3</sup>, Fatemeh Salmani<sup>4</sup> 

<sup>1</sup> Master's Degree Midwifery, Majoring Forensic Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

<sup>2</sup> Assistant Professor, Midwifery and Reproductive Health Research Center, Department of Midwifery and Reproductive Health Shahid Beheshti University of Medical Sciences, Tehran, Iran

<sup>3</sup> Legal Medicine Specialist, Member of Legal Medicine Research Center, Tehran, Iran

<sup>4</sup> Assistant Professor of Biostatistics, Department of Epidemiology and Biostatistics, School of Health Social Determinants of Health Research Center Birjand University of Medical Sciences, Birjand, Iran

\*Corresponding author: Mahbobeh Ahmadi Doulabi, Department of Midwifery and Reproductive Health Research Center, Department of Midwifery and Reproductive Health Shahid Beheshti University of Medical Sciences, Tehran, Iran.

E-mail: mah1372@yahoo.com

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## Abstract

**Introduction:** Legal abortion is performed to prevent maternal and fetal disorders. Midwives' awareness and attitude toward abortion laws have undeniable effects on the decisions made by women with high-risk pregnancies. By recent study, The present study evaluated the awareness and attitudes of midwives working in private offices in Tehran Province, Iran, toward abortion laws and related factors.

**Methods:** This descriptive-analytical study was done in 2016. A total of 236 midwives were selected from Tehran Province took simple random sampling. The data were collected took using a valid and reliable researcher-made questionnaire by items related to demographic characteristics, awareness, and attitude. The collected data were analyzed by descriptive tests (mean, standard deviation, confidence interval, frequency, and relative frequency) and linear regression analysis.

**Results:** The midwives' mean scores of awareness and attitude were  $57.7 \pm 7.44$  (95% CI: 56.61-58.54) and  $99.08 \pm 10.09$  (95% CI: 97.83-100.38), respectively. Midwives' age ( $B = 0.21$ ), work shifts in the midwifery office ( $B = 1.29$ ), being a member of the Midwifery Learner Society ( $B = 3.05$ ), and cooperating with local legal medicine centers ( $B = 3.63$ ) were found to be the predictors of awareness scores. Gain experience in the midwifery office was the only predictor of midwives' attitude, i.e., every one-year increase in work experience decreased the scores of attitude by 1.61 points.

**Conclusions:** The participating midwives had a moderate level of awareness, which was affected by different variables. Cooperating with local legal medicine centers had the most significant effect on improving midwives' awareness. Moreover, the midwives had low scores of attitude, and a few variables predicted their attitude.

## INTRODUCTION

Abortion is defined as the termination of pregnancy (for any reason) during the first 20 weeks or the removal of a fetus weighing less than 500 g, i.e., before the fetus can alive out of the uterus. Abortions can be either spontaneous or induced. Induced abortions can be illegal (intentional) or legal (therapeutic) [1]. In Iran, if the pregnancy threatens the mother's life born, fetal

anomalies are presented, abortions are legally accepted. Permissions from the Iranian Legal Medicine Organization are essential in all cases [2]. Unsafe abortions are considered as a serious global health issue. Forty-six million out of 210 million pregnancies lead to abortion each year, and half of these abortions are unsafe. Laws forbiddance law to abort in many countries

are the cause of unsafe abortions in 3%-4% of cases [3]. Despite the reduced maternal mortality rates in low-income countries, unsafe abortions are still a significant cause of maternal death in these countries [4].

Previous studies have estimated that one-fourth of all pregnancies in the world lead to abortion [5]. According to the World Health Organization (WHO), 200,000 women annually die of complications of illegal abortions, and 99% of these deaths occur in developing countries [6]. Around one-eighth of pregnancy-related deaths are due to illegal abortions [7]. The annual abortion rate in Iran is 7.5 per 1000 married 15-45-year-old women. However, there are no accurate statistics on illegal induced abortions in the country [8]. Overall, 10% of the world's population, who are mainly children, live with some sort of disability. Genetic factors are involved in more than half of all disabilities (The WHO, 2008), and at least 20%-25% of abnormalities are caused by genetic and chromosomal disorders [9]. Due to the absence of effective measures to treat genetic diseases and reduce the prevalence of disabilities, in order to facilitate the proper and safe performance of therapeutic abortion as an acceptable treatment method should be done [10].

Although legal abortion rates have decreased in many countries during recent years, changes in abortion laws have generally increased the rates throughout the world [11], based on needs and possible ways. Abortion laws may prohibit, restrict, or allow to abort.

Abortion laws may prohibit, restrict, or permit abortions based on the current demands and the availability of the procedure [12]. According to the Iranian Legal Medicine Organization, the number of women presenting for legal (therapeutic) abortion has continuously increased from 3480 in 2009 to 7616 in 2013 (5404 of which were legally permitted). The mean maternal age in these cases of abortion 26.6 years. Moreover, fetal anomalies and maternal illnesses were responsible for, respectively, 87% and 12% of legal abortions in Iran [1]. The Single-Article Law of June 20, 2005 (passed by the Iranian Parliament) permits abortion only before the insufflation of spirit (four months of pregnancy), with the mother's consent, and upon a definite diagnosis by three specialists and with the approval of the Iranian Legal Medicine Organization. According to the national guidelines, abortions are legally permitted if fetal diseases cause hardship for the mother or if the mother develops life-threatening diseases [13].

Midwives are responsible for providing maternal and child health (MCH) services and play a key role in promoting public knowledge and health. Since one of the goals of MCH is to prevent pregnancy complications such as unsafe abortions, increasing midwives' awareness can improve the health of pregnant women and the public [14]. According to previous studies,

while only 25% of midwives and gynecologists in Yazd, Iran were fully aware of legal abortion and abortion laws [6], the rate was as high as 86% in Kerman, Iran [15]. Due to their late presence at legal medicine centers, a significant number of women fail to receive permission for legal abortion. These rules lead to unsafe and illegal abortions and the birth of disabled children and threaten the family and public health. The presence of experienced consultants is hence necessary to provide pregnant women with information about abortion laws and complications of illegal abortions. Increasing the awareness of the medical team, including midwives and gynecologists, about the required coordination for the timely referral of pregnant women for legal abortion is also critical to solving pregnant women's problems. While previous studies in Iran have mainly compared the awareness levels of midwives and gynecologists, no research has mainly focused on the awareness of midwives, as the first group of maternity care providers, in Tehran, Iran. The present study was, therefore, conducted to investigate the awareness and attitudes of midwives working in private offices in Tehran toward abortion laws.

## METHODS

The present descriptive, analytical, cross-sectional study was conducted in 2016. A total of 236 midwives with offices in Tehran Province were recruited in the study. The following formula was used to calculate the sample size:

$$n = \frac{(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta})^2 \sigma^2}{d^2}$$

A two-tailed test with a significance level of  $\alpha = 0.05$  and a test power of 80% ( $d = 0.3$ ) was used to confirm sample size adequacy.

Upon the approval of the Ethics Committee of Shahid Beheshti University of Medical Sciences (Tehran, Iran), a list of midwives with private offices in Tehran Province was obtained from the Iranian Medical Council. Simple random sampling was used to select samples from Tehran and other cities of the province in proportion to their populations. The selected individuals were then interviewed in their offices. The inclusion criteria had a bachelor's or master's degree in midwifery, having at least one year of work experience in their private office, and having a license to practice midwifery in a private office in Tehran or other cities of Tehran Province. The Midwives who had violated the law and had thus been banned from working by government officials were excluded.

A three-part researcher-made questionnaire was used to collect data. The first part of the questionnaire collected demographic characteristics. The second part included 30 yes/no questions to evaluate the midwives' awareness of the Iranian abortion law (10 items) and the

conditions and procedures of obtaining a permit for legal abortions (15 and five items, respectively). The scores of this part ranged between 30 and 90, with higher scores indicating higher awareness. The third part of the questionnaire assessed the respondents' attitude through 30 items, including 15 items on abortion laws and 15 on the conditions and procedures of issuing permissions for legal abortions. Items of this part were scored on a five-point Likert scale (strongly disagree, disagree, no comment, agree, and strongly agree). The scores of this part ranged from 30 to 150, and higher scores indicated better attitudes.

The validity of the questionnaire was first confirmed through content analysis and then by five faculty members of the Department of Midwifery of the School of Nursing and Midwifery and five faculty members of the Department of Legal Medicine, Shahid Beheshti University of Medical Sciences. The content validity rate (CVR) and content validity index (CVI) were also calculated as  $> 0.65$  and  $> 0.79$ , respectively.

The internal consistency of the awareness and attitude subscales of the questionnaire was also confirmed by obtaining Cronbach's alpha coefficients of 0.76 and 0.75, respectively. The intraclass correlation coefficient (ICC) for the attitude subscale was computed as 0.76 using the two-way mixed-effects model [16]. Test-retest and Pearson's correlation coefficients of respectively 0.86 and 0.85 also confirmed the reliability of the awareness and attitude subscales.

The Ethics Committee approved the study protocol of Shahid Beheshti University of Medical Sciences (approval ID 171). All the participants were briefed on the study objectives and applications and ensured the confidentiality of data and their right to withdraw from the study at their discretion. The statistical analyses were conducted using SPSS 22.0 (SPSS Inc., Chicago, IL, USA). Kolmogorov-Smirnov tests were applied to investigate the normal distribution of continuous quantitative data. Analytical and descriptive tests (mean, standard deviation, and confidence interval) were used to analyze the data. Linear regression analysis was also adopted to predict the effects of predictor variables on midwives' levels of awareness and attitude. The variables were first individually entered into the regression model. All variables were then entered into the multiple linear regression model using the backward

method. The Durbin-Watson test was performed to confirm the assumption that residuals from the linear regression were independent (independent errors). Tolerance and the variance inflation factor (VIF) were used to ensure the absence of multicollinearity. A significance level of 0.05 was considered in all tests.

## RESULTS

The mean age of the participants was  $37.2 \pm 6.59$  years. Overall, 220 participants (93.2%) had a bachelor's degree, and 74 midwives (31.4%) had graduated within 16-20 years before the study. Most participants had their own offices for 11-15 years, and 133 midwives (56.4%) worked five-six days a week in their office. While 154 midwives (65.3%) had an experience of working in public hospitals, only 25 participants (10.6%) had worked in private hospitals. Most participating midwives were not members of any learned societies associated with their field of study ( $n = 171$ ; 72.5%) and had no cooperation with the legal medicine centers of the province or their city ( $n = 221$ ; 99.3%). Moreover, 126 midwives (53.4%) participated in continuing education courses, and 169 (71.6%) attended national congresses related to their field of study.

The participants' mean scores of awareness and attitude were  $57.57 \pm 7.44$  (95% CI: 56.61-58.54) and  $99.08 \pm 10.09$  (95% CI: 97.83-100.38), respectively. According to the results of the adjusted multiple linear regression analysis, age, work shifts, being a member of the Midwifery Learned Society, and cooperation with local legal medicine centers were the only variables predicting awareness (Table 1). Every one-year increase in age increased the scores of awareness by 0.21. Furthermore, the scores of awareness increased by 1.29 points for shifts, by 3.05 points for being a member of the Midwifery Learned Society, and by 3.63 points for cooperating with local legal medicine centers. Furthermore, after adjustment for other variables, the results of multiple linear regression analysis showed the experience of working in a private midwifery office as the only predictor of the midwives' attitudes. The participants' score of attitude increased by 1.61 points with every one-year increase in work experience (Table 2).

**Table 1.** Predicting the Effects of Independent Variables on the Scores of Awareness of Midwives Owing a Private Office in Tehran Province, Iran in 2016: The Crude and Adjusted Linear Regression Models

Predictor Variable	Crude Model				Adjusted Model			
	B	Beta	95% CI	P	B	Beta	95% CI	P
Age	-0.279	-0.182	-0.474	0.085	0.005			
Level of education	-3.225	-0.080	-8.375, 1.925	0.219				
Year of graduation	-1.243	-0.157	-2.249	0.016				
Work experience in a private office in Tehran	-1.610	-0.212	-2.568, -0.652	0.001	-0.161	-0.212	-2.568, -0.652	0.001

Number of working days in the office	-0.186	-0.012	-2.212, 1.841	0.857
Work shift	-0.605	-0.049	-2.206	0.458
Work experience in public hospitals	1.499	0.071	-1.221, 4.220	0.279
Work experience in private hospitals	3.458	0.106	-0.739, 7.654	0.106
Membership in the Midwifery Learned Society	-0.987	-0.044	-3.891, 1.918	0.504
Participation in continuing education courses	-1.370	-0.068	-3.967, 1.228	0.300
Participation in related congresses	-2.268	-0.101	-5.133, 0.598	0.120
Cooperation with local legal medicine centers	-2.921	-0.071	-8.231, 2.390	0.280

**Table 2.** Predicting the Effects of Independent Variables on the Scores of Attitude of Midwives Owing a Private Office in Tehran Province, Iran in 2016: The Crude and Adjusted Linear Regression Models

Predictor Variable	Crude Model				Adjusted Model			
	B	Beta	95% CI	P	B	Beta	95% CI	P
Age	-0.233	0.207	0.376, 0.091	0.001	0.210	0.187	0.350, 0.070	0.003
Level of education	-2.568	-0.087	-6.360	0.184				
Year of graduation	0.954	0.164	0.210, 1.698	0.012				
Work experience in a private office in Tehran	0.873	0.156	0.155, 1.592	0.017				
Number of working days in the office	-0.589	-0.050	-2.103, 0.924	0.443				
Work shift	1.355	0.148	0.178, 2.531	0.024	1.291	0.141	0.165, 2.416	0.025
Work experience in public hospitals	1.499	0.071	-1.221, 4.220	0.279				
Work experience in private hospitals	3.154	0.129	0.012, 6.297	0.049				
Membership in the Midwifery Learned Society	3.729	0.224	1.625, 5.832	0.001	3.059	0.184	0.977	0.004
Participation in continuing education courses	2.738	0.184	0.841, 4.636	0.005				
Participation in related congresses	1.522	0.092	-0.617, 3.661	0.162				
Cooperation with local legal medicine centers	4.111	0.136	0.222, 7.999	0.038	3.636	0.120	-0.131, 7.403	0.058

## DISCUSSION

According to the results of the present study, midwives working in private offices in Tehran had a moderate level of awareness about abortion laws and procedures of permission issues for legal abortions. However, the participants had low levels of awareness about the conditions of gain permissions for legal abortions. While the score of an attitude of these midwives toward abortion laws was low, their scores of attitude toward the conditions and procedures of permission issues for legal abortions were moderate. Following the adjustment of the effects of variables on awareness and attitude, only variables with high predictive power remained in the final regression models. In the present study, every one-year increase by aging the scores of awareness by 0.21 points.

Similarly, a previous study found a significant relationship between the age and awareness levels of Brazilian midwives and gynecologists. A mere 5% of the subjects under 39 years of age were well aware of the national abortion laws [3]. These findings indicate that dealing with a large number of patients increases the awareness of older midwives working in private midwifery offices. Although the present study found no significant relationships between the age and attitudes of the participants, a similar study conducted on British gynecologists in 2008 found that young people approved of decreasing abortion restrictions. Meanwhile, older individuals in the same population

were against easing the restrictions [17]. These different results might be caused by the fact that Iranian midwives cannot contribute to the revision of abortion laws, and they hence have no attitudes in this regard. Cultural differences may also cause the difference.

In the current study, the experience of working in a private office had no relation with the midwives' awareness scores but was negatively associated with their attitude scores. Every one-year increase in work experience in a private office decreased attitude scores by 1.61 points. Comparable results were reported by a study in Yazd, Iran [6], which found no significant relationships between the subjects' awareness and their work experience. Another study in Kerman, Iran, however, detected a significant relationship between the participants' awareness and their work experience [15]. Moreover, the present study failed to establish a significant relationship between experience of working in public (university) hospitals and level of awareness. In contrast, research in Yazd [6] and Kerman [15] showed higher levels of awareness among midwives working in university hospitals than in those working in other health centers. This might be caused by the fact that legal medicine centers refer women to university hospitals for performing legal abortion, and this enhances the awareness of midwives working in these hospitals.

The present study also found higher levels of awareness in midwives working in their offices in both morning and evening shifts than in those working only in the morning or evening shifts. In Brazil, Faundes et al. reported a significant relationship between midwives' awareness of the rules and documents required for legal abortion and their medical experience (measured through hours of daily practice). In other words, working hours are positively associated with the number of clients and can thus promote awareness.

In the present study, midwives' level of awareness was significantly related to cooperating with local legal medicine centers, i.e., this cooperation increased the scores awareness by 3.63 points. A study in the US has indicated that gynecologists who provided abortion services were more aware of the time of waiting and the necessity of legal permissions for abortion than those who provided prenatal care without abortion services. However, the two groups had no significant differences in terms of awareness of abortion laws [18]. This signifies the importance of establishing relationships between prenatal care providers and the national legal system for protecting the health of pregnant women and promoting public health.

Based on our findings, being a member of the Midwifery Learner Society increased midwives' scores of awareness by 3.05 points. This indicates the absence of a relationship between the Midwifery Learner Society and academic education in Iran and highlights a critical issue neglected by education policymakers. To the best of our knowledge, no previous studies have evaluated this relationship.

A noteworthy finding of this study was the significant relationship between being a member of the Midwifery Learner Society and the participants' awareness, which underscores the importance of this organization in delivering up-to-date scientific issues. In contrast, continuing education courses and national congresses had no significant relationships with midwives' level of awareness. Therefore, executive directors of these courses seem to neglect the importance of their

contents. Given that midwives' awareness of the new rules is vital, more attention should be paid to relevant courses and seminars. Abortion laws can even be added as a course to the midwifery curriculum. Finally, the present study had no particular limitations.

Midwives' performance review in therapeutic abortion can be considered in later researches.

## CONCLUSIONS

The result of researches has shown that midwives' awareness, and attitude toward the abortion laws in therapeutic abortion in the country isn't synchronous with reviewing the law, and the Midwives association needs constant education and get notified of revised laws in the therapeutic abortion field and adjustment of the therapeutic abortion in-country. To update knowledge and information of practitioners, including Midwives' as a provider of mother and child's health care, is vital.

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## Conflict of Interest

None to declare.

## Authors' Contribution

The first author: study design, data collection, and drafting the manuscript. Corresponding author: Study design, drafting, and revising the manuscript, responding to the reviewers. The third author: Advisor. The fourth author: Data analysis and writing the results section

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