

Original Article

What Do Pregnant Women In Turkey Think About Water Birth?

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Abstract

Objective: Water birth, in which women experience part of their labor and delivery in a tub filled with warm water, is a non-invasive method of childbirth. It is also the most attention-grabbing among all delivery methods. This study aimed to identify the knowledge levels regarding giving birth in water among pregnant women, and to determine and increase their awareness on water birth.

Material and Method: The sample of this cross-sectional study consisted of 1,000 pregnant women in varied phases of their pregnancy who were referred to the Polyclinics of Gynecology and Obstetrics of a university hospital and a state hospital in Eskisehir. Research data were collected using a questionnaire form which was developed through literature review. Data were analyzed using IBM SPSS (version 20.0) and Minitab (version 16.0) statistical software through descriptive statistics, the Chi-square test, the K-Means clustering analysis and the Roc analysis. $P < 0.05$ was accepted as the significance level.

Findings: The mean age of the pregnant women who participated in this study was 26.52 ± 5.17 . Of the pregnant women, 39.5% stated that they wanted to give birth in water. After the pregnant women watched the video on giving birth in water, it was determined that 63.1% of the women wanted to give birth in water. In the study, it was determined that 70.9% of the women had insufficient knowledge on water birth. Statistically significant correlations were found between the knowledge level of the pregnant women on water birth, and their age group, residence, education, employment status, family income, registered health institution, number of deliveries, level of education received on maternal health, and on water birth (for all: $p < 0.05$).

Conclusion: The research found that although pregnant women are aware of water birth, their information level is not sufficient.

Keywords: Pregnant women, Childbirth, Water birth, Midwife

Introduction

Today, more women are seeking alternative methods for delivery, and giving birth in water is becoming increasingly popular in many countries in recent years. This may be an indicator that more and more women are seeking alternative delivery methods. Although giving birth in water has a long history, the benefits and the comfort of water birth have been recognized only in recent years, as the prevalence of giving birth in water has been gradually increasing (Cluett, 2009; Swain, 2013; Toker & Uran, 2015). The first recorded account of a water birth occurred

in France in 1803. After laboring for some 48 hours, a woman was helped into a warm bath in an effort to soothe her and provide temporary pain relief. Shortly after entering the bath the woman's stalled labor quickly progressed, and her baby was born before any effort could be made to remove her from the bath (Geissbuehler, Stein, & Eberhard, 2004; Pairman, 2015; Swain, 2013). Water birth was pioneered in the 1960s by the Russian researcher Igor Tjarkovsky. French Dr. Michel Odent went on to popularize water immersion in the 1970s by installing birth pools in each room at the birth unit where he worked in France (Cluett, 2009).

The use of water during labor has many advantages. During water birth, relaxation of muscles, changes in hormones and buoyancy increase the circulation of blood to the uterus, hence uterine contractions become less painful (Macdonald, 2012; Swain, 2013; Yildirim, 2005). Therefore, this leads to an improved uterine perfusion, less painful contractions, a shorter labor with fewer interventions (Dahlen, Dowling, Tracy, Schmied, & Tracy, 2013; Macdonald, 2012; Toker & Uran, 2015; Zanetti-Daellenbach et al., 2007). In addition, water birth plays an important role in decreasing the use of medicinal or analgesic interventions, and decreases the risk of perineal injury during delivery. Water birth also increases the mobility and active participation of women, therefore increasing the labor satisfaction (Chaichian, Akhlaghi, Rousta, & Safavi, 2009; Garland, 2011; Swain, 2013).

Water birth also has many positive effects on the baby. The comfort of the mother during delivery makes the baby's birth easier (Poder, 2014; Toker & Uran, 2015). Since the baby has already been in the amniotic fluid sac for nine months, birthing in a similar environment is gentler and less stressful for the baby. As they are brought immediately out of the water into the mother's arms, they do not feel abandoned and panic. Babies born in water feel safe, and they are calm at birth (Pairman, 2015; Tritten, 2015). Experiencing a lessening of the effects of gravity, giving birth while sitting up, and having a continuous and uninterrupted labor are important factors, as all of these factors prevent any possible damage on the baby's brain cells. In addition, the baby is protected from the side effects of analgesics or invasive delivery methods (Cluett, 2009; Mollamahmutoglu et al., 2012; Swain, 2013; Toker & Uran, 2015).

It is obvious that water birth is a natural method for delivery and an effective option to manage labor pain. When water birth is chosen, steps should be taken to have an educated and experienced healthcare team. Appropriate maternal care and proper monitoring should be provided, and measures should be taken against infections. Although Turkey is surrounded by the sea on three sides, Turkish society is still not fully aware of the means and benefits of giving birth in water. In recent years, women who use the Internet more extensively, and who work outside the home may request to give birth in water. But, the number of institutions who can

meet this demand of water birth is limited in Turkey. This study aimed to determine the knowledge level of Turkish women regarding giving birth in water, and to identify and increase their awareness of water birth, which is an increasing phenomenon in recent years. These kinds of studies will reveal the level of interest in water birth in Turkey, as well as provide the opportunity to identify wrong information and provide accurate information.

Material and Method

Study Design: The design of this study is cross-sectional.

Universe and Sample of the Study: There were two institutions with the highest number of deliveries in the city where this study was conducted. The research included all pregnant women referred to the Polyclinics of Gynecology and Obstetrics of Eskisehir State Hospital (an annual number of births of 5.726 in 2014) and Eskisehir Osmangazi University Health Practices and Research Hospital (an annual number of births of 850 in 2014). The study volunteer group included pregnant women who sought care at the polyclinics in March and April 2016.

The size of the research sample was calculated through the power analysis based on the following assumptions: the sufficiency in knowledge of the pregnant women on water birth was 50% (p1), alternatively 57% (p2), error margin was ($\alpha=0.05$) and test power was 0.85. The sample size was calculated as 892. Parallel with the total number of pregnant women who were referred to these institutions, 85% of the study group (n=850) consisted of the pregnant women who were referred to the State Hospital, 15% of them (n=150) consisted of the pregnant women who were referred to the polyclinics of the University Hospital. The research was completed with 1,000 pregnant women, in case of any data loss.

Data Collection Tool: Research data were collected using a questionnaire form which was developed through a literature review (Cluett, 2009; Ovali, 1999; Pairman, 2015; Poder, 2014; Swain, 2013). The first draft consisted of 68 questions. Thirty pregnant women were asked to complete the form, and after necessary corrections, the final version was prepared.

The questionnaire form consists of three sections. The first section includes descriptive personal information, the second section includes the

obstetrical characteristics of the pregnant women, as well as their opinions on delivery and water birth. The third section includes a questionnaire form consisting of 35 statements to measure the general information level of the pregnant women regarding giving birth in water.

Data Collection: Data were collected by researchers through face-to-face interviews within the working hours of institutions, assuring the privacy of all participants. After the questionnaire form was completed, the pregnant women watched a five-minute water birth video summarized from the movie titled “Gentle Birth Choices” by Barbara Harper. The pregnant women were then asked again for their opinions on giving birth in water (Harper, 2008). Each interview was almost 20-25 minutes long.

Data Evaluation: Thirty-five statements regarding water birth which were included in the questionnaire were scored; each correct answer got “1 point”. The possible scores ranged between 0 and 35.

A normally distributed “DUMMY variable” with a mean of 0.0001 and standard deviation of 0.00001 was introduced. Using this variable, the pregnant women were divided into two different groups according to their information scores. These scores were obtained through the K-Means clustering analysis, and the scores were evaluated using the Roc Analysis. As a result of the Roc Analysis, the value with maximum sensitivity and specificity (100%) was accepted as the cut-off point, and the pregnant women who received scores more than or equal to 9.50 were accepted as “the ones with a sufficient information level” (Ozdamar, 2004).

The data were analyzed using IBM SPSS (version 20.0) and Minitab (version 16.0) statistical software through descriptive statistics, the Chi-square test, the K-Means clustering analysis and the Roc analysis. $p < 0.05$ was accepted as the significance level.

Ethics of the Research: The research was approved by the Non-Interventional Clinical Research Ethics Committee of Eskisehir Osmangazi University on the date of 28.04.2016 with a decision number of 80558721/G-98. Written and oral consents of the participants were obtained in order to conduct the study, and

those willing to participate were asked to fill out the questionnaire.

Results

The mean age of the pregnant women who participated in this study was 26.52 ± 5.17 years, and 33.5% of them were in the age group of 25-29 years. Sixty-eight % of the pregnant women lived in city centers, 37% of them were primary school graduates, 76.1% were housewives, and 73.6% had a medium income level. It was determined that 51.5% of the pregnant women were primipara, and 83.3% of them were in the third trimester. Of the pregnant women, 84.7% stated that they did not receive any education on pregnancy. Also, 33.3% of the pregnant women who received training stated that they also received information on giving birth in water (Table 1).

When examining whether the participants wanted to give birth in water, it was determined that 39.5% of the pregnant women did want to give birth in water. After the pregnant women watched the video on giving birth in water, it was determined that 63.1% of the women wanted to give birth in water. It was found that 72.9% of the pregnant women wanted their husbands as birth companions, and 48.4% wanted to give birth in water with the help of the doctor and midwife together (Table 2).

The scores of the participants obtained from questions regarding giving birth in water ranged between 0-29, and the mean score was 5.99 ± 8.57 . The study determined that 70.9% of the pregnant women had insufficient information on water birth (Table 1). It was determined that the most frequently repeated accurate statement was “Giving birth in water reduces pain during delivery” and the most frequently repeated false statement was “Giving birth in water increases the risk for bleeding during or after labor.”

Statistically significant correlations were found between the knowledge level of the pregnant women on water birth and their registered health institution, residence, age, education, employment status, family income, number of deliveries, and level of education received on maternal health and water birth (Table 1) (for all: $p < 0.05$).

Table 1. Distribution of knowledge levels of pregnant women on water birth according to some of their descriptive characteristics.

Sociodemographic characteristics	Knowledge level on water birth			Test value X ² ; p
	Insufficient n (%) [*]	Sufficient n (%) [*]	Total n (%) ^{**}	
Registered health institution				
University Hospital	79 (52.7)	71 (47.3)	150 (15.0)	28.436; 0.001
State Hospital	630 (74.1)	220 (25.9)	850 (85.0)	
Place of Residence				
City center	438 (64.4)	242 (35.6)	680 (68.0)	47.037; 0.001
District center	186 (81.6)	42 (18.4)	228 (22.8)	
Rural area	85 (92.4)	7 (7.6)	92 (9.2)	
Age group				
≤19	74 (94.9)	4 (5.1)	78 (7.8)	42.264; 0.001
20-24	237 (77.2)	70 (22.8)	307 (30.7)	
25-29	208 (62.1)	127 (37.9)	335 (33.5)	
30-34	132 (66.3)	67 (33.7)	199 (19.9)	
≥35	58 (71.6)	23 (28.4)	81 (8.1)	
Education Status				
Illiterate	33 (97.1)	1 (2.9)	34 (3.4)	160.698; 0.001
Primary school	313 (87.4)	45 (12.6)	358 (35.8)	
High school	265 (71.6)	105 (28.4)	370 (37.0)	
University	98 (41.2)	140 (58.8)	238 (23.8)	
Employment Status				
Employed	123 (51.5)	116 (48.5)	239 (23.9)	57.500; 0.001
Unemployed	586 (77.0)	175 (23.0)	761 (76.1)	
Family Income Status				
Good	110 (50.9)	106 (49.1)	216 (21.6)	57.581; 0.001
Medium	556 (75.5)	180 (24.5)	736 (73.6)	
Bad	43 (89.6)	5 (10.4)	48 (4.8)	
Number of Births				
Primipara	330 (64.1)	185 (35.9)	515 (51.5)	23.955; 0.001
Multipara	379 (78.1)	106 (21.9)	485 (48.5)	
Gestational Week				
1st trimester	31 (68.9)	14 (31.1)	45 (4.4)	3.472; 0.176
2nd trimester	78 (63.9)	44 (36.1)	122 (12.2)	
3rd trimester	600 (72.0)	233 (28.0)	833 (83.3)	
Receiving Maternal Health Education during Pregnancy				
Received	56 (36.6)	97 (63.4)	153 (15.3)	102.997; 0.001
Not received	653 (77.1)	194 (22.9)	847 (84.7)	
Receiving Information on Water Birth in Maternal Health Education (n=153)				
Received	11 (21.6)	40 (78.4)	51 (33.3)	6.510; 0.011
Not received	45 (44.1)	57 (55.9)	102 (66.7)	
Total	709 (70.9)	291 (29.1)	1000 (100.0)	

*: Percentage over row total, **: Percentage over column total.

Table 2. The Distribution of Pregnant Women according to their Desire to Give Birth in Water

Features	Number	Percentage
Willingness to give birth in water		
Want to give birth in water	395	39.5
Do not want to give birth in water	414	41.4
Do not know	191	19.1
Willingness to give birth in water after watching the video on water birth		
Want to give birth in water	195	19.5
Do not want to give birth in water	631	63.1
Do not know	174	17.4
The person that she wants as a birth companion (n=417)*		
Her husband	304	72.9
Her mother-her sister	86	20.6
Nobody	27	6.5
The health personnel that the expectant mother wants to be at labor		
Obstetrician and gynecologist	309	30.9
Midwife	155	15.5
The doctor and midwife as a team	484	48.4
Do not know	52	5.2
Total	1000	100.0

*The pregnant women who want to give birth in water may have more than one person as their birth companions, therefore the numbers are calculated by the numbers of people that they want (n=417) during the labor.

Discussion

Water birth is one of the alternative delivery methods. Water birth may be highly preferred by women who wish to remember the birth, one of the most important events in a woman’s life, with pleasure. In recent years, expectant mothers have been much more curious about water birth, which centers on the woman to the center. It is an attractive option for women who wish to have a non-invasive experience (Menakaya, Albayati, Vella, Fenwick, & Angstetra, 2013). This study determined the knowledge level of pregnant women in Eskisehir regarding water birth, which is becoming increasingly popular in Turkey and in the world. The knowledge level of the participants on water birth was compared with some of their individual and obstetrical characteristics. The literature review indicated that there have been a limited number of studies assessing the knowledge level of pregnant women regarding water birth.

In our study, it was determined that 39.5% of the pregnant women wanted to give birth in water. Ovali (1999) determined that 40% of the pregnant women wanted to give birth in water (Ovali, 1999) These percentages may reflect the

fact that Turkish society is not informed or fully aware of water birth. In Turkey, there may be a prejudice against water birth. In our study, the pregnant women were asked to watch a short video on water birth, and it was determined that the rate of the pregnant women who wanted to give birth in water increased to 63.1% after the women viewed the video (Table 2). The expectant mothers saw how water birth can provide more comfort during labor. Therefore, visual media tools will play a significant role in providing information and increasing social awareness regarding water birth.

Giving birth is one of the most special moments in a woman’s life; therefore, it is very normal that women want their husbands as birth companions. In a study by Sapkota et al, women stated that their husbands play a major role in giving them emotional, physical and informative support during the delivery (Sapkota, Kobayashi, & Takase, 2011). It was reported that during water birth, the massages and touch of husbands have positive effects on the expectant mother (Atalla & Weaver, 1995). In this research, most of the pregnant women (72.9%) stated that they wanted their husbands to be present during the delivery

(Table 2). Also, in Ovali's study, 62.7% of the pregnant women stated that they want their husbands to be present during the delivery (Ovali, 1999).

Studies suggested that labor during a water birth is much less painful for mothers (Menakaya et al., 2013; Mollamahmutoglu et al., 2012; Swain, 2013). In our research, the pregnant women gave the most accurate answers regarding this issue. The proposition of "Giving birth in water reduces labor pain" was the most frequently reported accurate statement among the women's answers. In Ovali's study, 32% of the pregnant women stated "painless labor" as the positive effect of water birth on the mother (Ovali, 1999).

Studies on delivery in water stated that the relaxation effect of warm water may affect the contractility of the smooth muscles within the uterus, which may increase the risk of bleeding during and after labor. But, all studies reported that there is no certain evidence regarding water birth being riskier than other delivery methods regarding bleeding (Cluett, 2009; Pairman, 2015; Toker & Uran, 2015). In our study, the false statement repeated most frequently was determined to be "Giving birth in water increases the risk for bleeding during or after labor". Therefore, it was observed that the pregnant women were not accurately informed about the possible complications of water birth. While suggesting water birth as an alternative delivery method, it is also important to accurately report the possible complications.

The scores of the participants from answers of questions about giving birth in water ranged between 0-29. It was determined that 70.9% of the pregnant women had insufficient information on water birth. In our study, it was found that the knowledge level of the pregnant women regarding water birth was higher for those who were registered in the university hospital, compared with those who were followed by the state hospital. Statistical analysis showed that the difference between those different hospital groups was statistically significant ($p < 0.05$) (Table 1). In a study by Pirdal et al, no significant difference was found between the knowledge level of the pregnant women and their registered institution (Yalcin, Pirdal, & Unal, 2016). This result may be associated with the fact that in our study, the pregnant women who were referred to the university hospital had higher levels of

education than the other group of women who were referred to the state hospital.

In our study, place of residence was another factor affecting the knowledge level of the pregnant women. It was determined that the pregnant women who lived in city centers had a higher knowledge level about water birth than other pregnant women. Statistical analysis showed that there is a statistically significant difference among the place of residence of the pregnant women and their knowledge level in regard to water birth ($p < 0.05$) (Table 1). Maseresha et al. found that pregnant women who lived in a city center were more knowledgeable about danger signs during pregnancy, childbirth, and the postpartum period (Maseresha, Woldemichael, & Dube, 2016). Today, sociocultural and economic developments are mutually interacting significant dynamics. Therefore, it is possible that women who live in city centers where many rapid industrial and technological developments are observed, have a higher level of education, and are more knowledgeable. On the other hand, women in city centers are expected to be more knowledgeable about pregnancy and delivery because they have easier access to health care. They are able to have regular follow-up during pregnancy, and attend education classes; therefore, they are expected to be more aware of alternative birth methods and more knowledgeable about delivery.

In our study, a statistically significant relationship was determined between age and knowledge level regarding water birth ($p < 0.05$). The number of pregnant women who had a sufficient knowledge level on water birth was the lowest for the women who were younger than 19 years of age (5.1%), while it was determined that the highest number of pregnant women who had sufficient knowledge on water birth was observed in the age group of 25-29 (37.9%) (Table 2). Similar to our study results, Ovali found that the women from the age group of 25-29 gave the highest number of correct answers on water birth (Ovali, 1999).

It was determined that the knowledge level of the pregnant women on water birth increased with an increase in their level of education. Statistical analysis showed that there was a statistically significant difference among the groups in terms of their level of education ($p < 0.05$) (Table 2). Ovali determined that there was an increase in positive and accurate opinions on giving birth in

water as the level of education of the participants increased (Ovali, 1999). Pirdal et al. also stated that the knowledge level of the pregnant women regarding pregnancy increased with an increase in their level of education (Yalcin et al., 2016). Education increases understanding and improves learning ability in general, which may lead to this result.

In our study, it was found that the pregnant women who worked outside the home and had an income, as well as a good family income, had higher levels of knowledge on water birth (Table 2). Similar to our study findings, Ovali found that working pregnant women gave more correct answers about water birth, and this was found to be a statistically significant difference ($p < 0.05$) (Ovali, 1999). Yanikkerem et al. stated that pregnant women with a higher family income have higher levels of knowledge on health practices (Yanikkerem, Kavlak, & Saruhan, 2012). This may be explained in that socioeconomic level affects knowledge and awareness as well as the health practices of individuals.

In our study, the number of deliveries was determined as another factor which affected the knowledge level of the pregnant women. It was determined that the knowledge level on water birth is higher in primipara women (Table 1). Ovali found that multipara women had more positive and correct information on water birth, and this was determined to be a significant difference among the groups ($p < 0.05$) (Ovali, 1999). Our study findings are different than Ovali's findings.

In our study, it was determined that the pregnant women who received maternal health education during their pregnancy, and received information on water birth during that education, had a higher level of knowledge on water birth, and this difference among the groups was statistically significant ($p < 0.05$) (Table 1). Maseresha et al. found that pregnant women who received education on maternal health were more knowledgeable about obstetric danger signs during pregnancy, childbirth and the postpartum period (Maseresha et al., 2016). McCants determined that the preferences and attitudes of pregnant women about childbirth changed after they attended a pre-natal education program (Henley McCants, 2015). These results indicated the importance of maternal health education to

inform pregnant women on the delivery process and alternative delivery methods.

Conclusion

It was determined that although the pregnant women had information on water birth, their knowledge level was insufficient. Turkey has a 54% cesarean delivery rate, and the awareness of Turkish women on water birth as an alternative delivery method has increased with the viewing of the video shown during this research. In view of how the tendencies of pregnant women changed toward water birth with just the viewing of a five-minute video, it is predicted that the awareness on water birth will increase with more educations on water birth, and the inclusion of information on this method in pre-natal classes. Under the right conditions, and with the awareness of the necessary precautions, water birth is an effective option as a natural method in coping with pain during labor and delivery. An increasing number of water births may play a significant role in the promotion of a natural delivery and a reduction in cesarean delivery rates. It is suggested that all maternal health professionals in Turkey, particularly midwives, learn more about water birth.

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