



The Study of Pregnant Women's Attitude toward Using Ultrasound in Pregnancy and its Diagnostic Value based on the Demographic Features in Amir-al-Momenin Hospital of Zabol, 2015-2016

Razieh Behzadmehr¹, Khadijeh Rezaie Keikhaie^{2*}, Naziyeh Soltan Pour³

¹Assistant Professor, Department of Radiology, Faculty of medicine, Zabol University of Medical Sciences, Zabol, Iran.

²Department of obstetrics and Gynecology, Zabol University of Medical Sciences, Zabol, Iran.

³Student of Medicine, Students Research Committee, Zabol University of Medical Sciences, Zabol, Iran.

***Corresponding author:** Khadijeh Rezaie Keikhaie, Department of obstetrics and Gynecology, Zabol University of Medical Sciences, Zabol, Iran.

Email: ilamacademic@gmail.com

Abstract

Ultrasound is widely used in pregnancy and it is considered as a part of the routine cares given in pregnancy. Ultrasound is also applied for screening during pregnancy. The present research aims at studying the pregnant women's attitudes toward using ultrasound in pregnancy and its diagnostic value based on the demographic variables in Amir-al-Momenin Hospital of Zabol from 2015 to 2016. The present study is a descriptive-analytical one conducted on pregnant women referring to Amir-al-Momenin Hospital of Zabol from 2015 to 2016. The questionnaire used in the present study was made by the Iranian gynecologists and radiologists; the questionnaire includes demographic features, the participant's pregnancy history, and the number of ultrasound performed during the recent pregnancy. The data collected were analyzed with respect to frequency, percentage, mean, and standard deviation through using SPSS 18. In the present study, from among the 300 patients studied, 148 patients (%49.3) were 20-30 years old, 96 patients (%32) experienced their third pregnancy, 112 patients (%37.3) had degrees lower than high school diploma, and 68 participants (%22.7) had college degrees. According to 223 participants (%74.3), ultrasound can show the fetus' physical problems. Moreover, 71 participants (23.7) believed that performing ultrasound in the second three months of pregnancy could show the fetus' chromosomal as well as genetic abnormalities. The findings of the present study indicated that most of the patients maintain that ultrasound is necessary for their fetuses. They have also added that ultrasound can show the fetus' chromosomal-genetic abnormalities and its physical problems. It is recommended that training courses be provided to familiarize pregnant mothers with anomaly ultrasound.

Keywords: Pregnant Women, Ultrasound, Demographic Features, Zabol.

Introduction

Ultrasound in midwifery was first introduced by Donald in 1958; it created a revolution in the diagnostic process of the prenatal cares and fetal monitoring (1). Ultrasound is widely used in pregnancy. It is considered as a part of the routine cares given in pregnancy. Ultrasound is also applied for screening during pregnancy (2). At present, ultrasound has turned out to be an indispensable part of the modern prenatal cares in both developing and developed countries (3). Moreover, most of the women maintain that ultrasound is an essential part of the pregnancy cares and they are willing to have an ultrasound image as the first picture they have from their child (4). Safe ultrasonography is portable, non-aggressive, and less expensive than other methods of imaging (5). Moreover, it has the capability of measuring the real age of pregnancy that is necessary in midwifery (6). The most important reasons behind parents' happiness after the ultrasound scanning are finding out the baby's gender and receiving guarantee about their health (7). Given the public's increasing awareness about the benefits of ultrasound, demands have increased for performing ultrasound scanning by both doctors and patients (8). Moreover, recent developments in the prenatal diagnostic methods, especially prenatal ultrasound, have resulted in a better understanding of specific congenital anomalies; it has thus led to an improvement in the surgical as well as medical methods of treating birth defects (9). The potential advantages of this method include mother's satisfaction and her certainty of the fetus' health against the risk of unnecessary treatments arising from unnatural ultrasound findings and their costs (10). The benefits of diagnostic ultrasound have been well recognized and accepted in both developing and developed areas (11). Although pregnant women do not need urgent ultrasound in doctors' view, they intend to perform an ultrasound (12). Because of wasting the rare resources, especially in developing countries, the high costs of diagnostic and medical services are often referred to as the main disincentives for using the women and delivery services (13). During ultrasound, the pregnant women in the developing countries ask for information such as the gender of the fetus, expected date of delivery, and fetus's health (14). Regardless of its limitations, in the developing countries, mothers' expectation from this diagnostic method is often high (15). Ultrasound is provided as a part of the pregnancy cares in 16-18 weeks of pregnancy (for diagnosing multiple embryos, determining the fetus' age and placental location, and diagnosing fetal abnormalities). Ultrasound is then

provided in 31-34 weeks of pregnancy for studying the fetal development and determining the Amniotic fluid volume by the specialists in special centers (16, 17). Sometimes pregnant women refer to centers performing ultrasounds without the doctor's request; at the wrong time, they expect to receive information that is not often given to them, and this is considered as a main source of dissatisfaction among the patients. The present research aims at studying the pregnant women's attitudes toward using ultrasound in pregnancy and its diagnostic value based on the demographic variables in Amir-al-Momenin Hospital of Zabol from 2015 to 2016.

Materials and Methods

The present study is a descriptive-analytical one conducted on pregnant women referring to Amir-al-Momenin Hospital of Zabol from 2015 to 2016. For determining the sample 200 samples were selected through using the following formula at the confidence level %95 with the probability of 0.85 (18) and the error rate of 5 percent. The samples were selected randomly. The data collection tool was questionnaire that was completed through conducting face-to-face interviews. The questionnaire used in the present study was prepared according to the studies published earlier as well as the experiences of Iranian researchers (6), gynecologists, and radiologists. This questionnaire includes the demographic features and the participant's pregnancy history; the items included are age, educational level (illiterate, lower than high school diploma, high school diploma, and college degrees), place of residence (urban, rural), number of children, the applicant for performing ultrasound (the patient himself, the doctor), and the number of ultrasound performed during the recent pregnancy. The inclusion criterion of the present study was normal pregnancy free from any risk factors (that are likely in need of further cares and studies during pregnancy). According to the definition provided in the previous studies (19), mothers with risky pregnancy were not included in the present study; they include those with previous fetal death, previous fetus' structural or chromosomal abnormalities, cervical insufficiency, premature rupture of membranes, familial history of genetic problems, and any diseases such as high blood pressure, or heart diseases and etc. The data collected were analyzed with respect to frequency, percentage, mean, and standard deviation through using SPSS version 18 (20-22).

Findings

Among the 300 women studied, 31 women (%10.3) were under 20 years old, 148 women (%49.3) were 20-30 years old, 105 women (%35) were 30-40 years old, and 16 women were over 40 years old. Moreover, 71 participants (%23.7) experienced their first pregnancy, 67 participants (%22.3) experienced their second pregnancy, 96 participants (%32) experienced their third pregnancy, and 66 participants (%22) experienced their fourth pregnancy and more. From among the participants of the present study, 112 women (%37.3) had degrees lower than high school diplomas, and 68 women (%22.7) had college degrees. From among the participants of the present study, 118 women (%39.3) stated that they had experienced performing 3-4 ultrasound scanning in their recent pregnancy, and 45 women (%15) had reported that they had experienced performing more than 5 scanning in their recent pregnancy (table 1).

Moreover, the reason behind requesting ultrasound was anomaly ultrasound in 77 cases (28.6); in 15 cases (%5) it was pregnancy ultrasound and studying the AFI (table 2). From among the 300 pregnant women studied, 63 women (%21) believed that ultrasound can show the chromosomal and genetic abnormalities in the first three months. However 71 women (%23.7) maintained that ultrasound can show the chromosomal and genetic abnormalities in the second three months, and 22 women (%7.3) maintained that ultrasound can show the chromosomal and genetic abnormalities in the third three months. According to 34 women (%11.3), ultrasound can show the chromosomal and genetic abnormalities at any age (table 3). Furthermore, according to 223 women (%74.3), ultrasound can show the fetus' physical problems, and 50 women (%16.7) believed that ultrasound is not capable of showing the physical problems. However, 27 women (%9) maintained that ultrasound can show the fetus' physical problems to some extent.

Table 1. The frequency distribution of number of ultrasound scans in the pregnant women studied.

Number of ultrasound scans in the recent pregnancy	Frequency	Percent
One scan	64	21.3
Two scans	73	24.3
3-4 scans	118	39.3
More than 5 scans	45	15

Table 2. The frequency distribution of the purpose of performing ultrasound in pregnancy with regard to the doctor's prescription in the pregnant women studied.

purpose of performing ultrasound in pregnancy with regard to the doctor's prescription	Frequency	percent
Full pregnancy ultrasound	82	27.3
Anomaly ultrasound	77	28.6
NT ultrasound	45	15
Pregnancy diagnosis confirmation and analyzing GA	21	7
Analyzing AFI	27	9
Pregnancy ultrasound and analyzing AFI	15	5
Biophysical profile ultrasound	13	4.4
Without doctor's prescription	20	6.7

Table 3.The frequency distribution of pregnant women’s attitudes and ideas toward this question “at what age of pregnancy can ultrasound show the chromosomal-genetic abnormalities?”

At what age of pregnancy can ultrasound show the chromosomal-genetic abnormalities?	Frequency	Percent
First three months	63	21
Second three months	71	23.7
Third three months	22	7.3
At any age	34	11.3

Discussion

Ultrasound is widely used in the diagnosis and treatment of prenatal problems; most of the clinical requests for performing ultrasound includes cases such as pregnancy confirmation, multiple pregnancy diagnosis, pregnancy age estimation, determining the placental location, controlling the fetus’ health, evaluating the location of Cesarean scar, and studying the causes of post-delivery bleedings (23). It has been recently stated that, except for the women living in the rural areas and underdeveloped countries, one can hardly find a woman in the world that has not performed at least one ultrasound during her pregnancy; most of the women perform at least 10 ultrasounds and even more during their pregnancy (24, 25). The present research aims at studying the pregnant women’s attitudes toward using ultrasound in pregnancy and its diagnostic value based on the demographic variables in Amir-al-Momenin Hospital of Zabol from 2015 to 2016. In the present study, 47 percent of the individuals maintained that ultrasound could show the fetus’ chromosomal as well as genetic abnormalities. There are many indications for ultrasound in the second and third three months, and the anatomical study is one of them. A main purpose behind performing ultrasound is the classification of the fetal components into two groups: normal anatomy and abnormal anatomy. As a result, ultrasound can show only those chromosomal and genetic abnormalities that can result in physical anomalies and malformations of the fetal components. However, most of the chromosomal and genetic abnormalities do not bring about any changes in the physical appearance of the fetus. Thus, ultrasound does not exactly show the fetus’ chromosomal and genetic abnormalities (26). In the study conducted by Harris et al, 2009, 30 percent of the women reckoned that ultrasound could diagnose Down syndrome and other chromosomal abnormalities (27). Therefore, providing

appropriate information about the capabilities and limitations of ultrasound is deemed necessary to reduce unreasonable requests (14). In the present study, according to 53.3 percent of the women studied, ultrasound scanning is harmful. In the study conducted by Ranji et al, 2010, 62.8 percent of the women studied maintained that ultrasound is harmful for the fetus (7). In the present study, the main cause behind mothers’ request for ultrasound was estimating the delivery time (%68.6) that is followed by fetal gender diagnosis (%40), and in the later phases mother’s health (%15) and analyzing the kind of delivery (%12.6). In the study conducted by Stephens et al, 2000, the most frequent cause for requesting ultrasound by mothers was determining the fetal gender that was followed by ensuring the fetal health, ensuring the exact time of delivery, and ensuring the fetal development (12). In the study conducted by Gudex et al, 2006, the main causes behind mothers’ requests for ultrasound without medical indications were reported as analyzing the fetal health as well as fetal anomalies (%60), ensuring that everything is normal (%5), and the individual’s certainty (%44) (28). Given that most of the participants of the present study were rural patients with low educational level, in the present study most of the participants were worried about the delivery time. In the study conducted by Bashour et al, 2005, one of the reasons behind ultrasound without any indications was determining the fetal gender that was followed by the optional abortion of the female fetus (29). In the study conducted by Sharami et al, 2011, the most frequent cause of mothers’ request for ultrasound was determining the fetal gender. However there was no significant relationship between the ultrasounds requested and the gender of the children (only male, only female, and both male and female) (30). The individuals studied, regardless of their previous children’s gender, were willing to determine their present child.

Conclusion

The findings of the present study indicated that most of the patients believed that ultrasound is harmful for their fetus. Moreover, most of the participants maintained that ultrasound could show the fetus' chromosomal-genetic abnormalities and physical problems. However, they had little information about the pregnancy age as well as the limitations of routine pregnancy ultrasounds. In fact, providing training courses are necessary to familiarize the pregnant mothers with the anomaly ultrasound.

References

1. Donald I, Macvicar J, Brown T. Investigation of abdominal masses by pulsed ultrasound. *The Lancet* 1958; 271(7032): 1188-95.
2. Georgsson Öhman S, Waldenström U. Second-trimester routine ultrasound screening: expectations and experiences in a nationwide Swedish sample. *Ultrasound in obstetrics & gynecology* 2008; 32(1): 15-22.
3. Gammeltoft T, Nguyen HTT. The commodification of obstetric ultrasound scanning in Hanoi, Viet Nam. *Reproductive Health Matters* 2007; 15(29): 163-71.
4. Maksuti E. *Imaging and modeling the cardiovascular system*, 2016.
5. Stanton K, Mwanri L. Global Maternal and Child Health Outcomes: the role of obstetric ultrasound in low resource settings. *World Journal of Preventive Medicine* 2013; 1(3): 22-9.
6. Shung KK. Diagnostic ultrasound: Past, present, and future. *J Med Biol Eng* 2011; 31(6): 371-4.
7. Ranji A, Dykes A-K. Ultrasound screening during pregnancy in Iran: womens' expectations, experiences and number of scans. *Midwifery* 2012; 28(1): 24-9.
8. Obeidi N, Russell N, Higgins JR, O'donoghue K. The natural history of anencephaly. *Prenatal diagnosis* 2010; 30(4): 357-60.
9. Saadai P, Runyon T, Farmer DL. Fetal neurosurgery: Current state of the art. *Future neurology* 2011; 6(2): 165-71.
10. Kieler H, Haglund B, Cnattingius S, Palmgren J, Axelsson O. Does prenatal sonography affect intellectual performance? *Epidemiology* 2005; 16(3): 304-10.
11. Kongnyuy EJ, Van Den Broek N. The use of ultrasonography in obstetrics in developing countries. *Tropical doctor* 2007; 37(2): 70-2.
12. Stephens MB, Montefalcon R, Lane DA. The maternal perspective on prenatal ultrasound. *Journal of Family Practice* 2000; 49(7): 601-02.
13. Omo-Aghoja L, Aisien O, Akuse J, Bergstrom S, Okonofua F. Maternal mortality and emergency obstetric care in Benin City, South-South Nigeria. *Journal of clinical medicine and research* 2010; 2(4): 55-60.
14. Tautz S, Jahn A, Molokomme I, Görden R. Between fear and relief: how rural pregnant women experience foetal ultrasound in a Botswana district hospital. *Social Science & Medicine* 2000; 50(5): 689-701.
15. Kalish RB, Thaler HT, Chasen ST, Gupta M, Berman SJ, Rosenwaks Z, et al. First-and second-trimester ultrasound assessment of gestational age. *American journal of obstetrics and gynecology* 2004; 191(3): 975-78.
16. Ewigman BG, Crane JP, Frigoletto FD, LeFevre ML, Bain RP, McNellis D. Effect of prenatal ultrasound screening on perinatal outcome. *New England Journal of Medicine* 1993; 329(12): 821-27.
17. Khalilabadi, AJ, Shahraki MK, Rezaeifard R, Khalilabadi RJ, Zarooei JM, Salarzadeh M, Zaare MA. The relationship between CT scan findings, level of consciousness and outcome score in patients with traumatic brain hemorrhage. *Der Pharmacia Lettre* 2016; 8(20): 140-44.
18. Beke A, Papp C, Tóth-Pál E, Mezei G, Joó JG, Csaba A, et al. Trisomies and other chromosome abnormalities detected after positive sonographic findings. *The Journal of reproductive medicine* 2005; 50(9): 675-91.
19. Guinn DA, Atkinson MW, Sullivan L, Lee M, MacGregor S, Parilla BV, et al. Single vs weekly courses of antenatal corticosteroids for women at risk of preterm delivery: a randomized controlled trial. *Jama* 2001; 286(13): 1581-87.
20. Havasian MR, Panahi J, Pakzad I, Davoudian A, Jalilian A, ZamanianAzodi M. Study of Inhibitory effect of alcoholic and aqueous extract of *Scrophularia striata* (tashnedari) on candida albicans in vitro. *J of Pejouhesh* 2013; 36(5): 19-23.
21. Panahi J, Havasian MR, Roozegar MA. Knowledge of physical education teachers' toward tooth avulsion in Tehran, Iran. *J Oral Health Oral Epidemiol* 2014; 3(2): 66-71.
22. Panahi J, Havasiyan MR, Gheitasi S, Pakzad I, Jaliliyan A, Hoshmandfar R, Havasiyan M. The in Vitro Inhibitory Effects of the Aqueous Extracts of Summer Onion on Candida Albicans. *J of IlamUni Med Sci* 2013; 21(1): 54-9.

23. Brezinka C. Training, certification and CME in obstetric ultrasound scan in Europe. *European Clinics in Obstetrics and Gynaecology* 2006; 1(4): 223-26.
24. Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Rouse DJ, Sponge CY. Breech presentation and delivery. *Cunningham, FG, Leveno, K., Bloom, SL Gilstrap, L., Williams obstetrics*, 2005:565-86.
25. MasoudNemati, ParisaHajalioghli, ShahramJahed, RaziehBehzadmehr, MandanaRafeey, Daniel Foulad. Normal Values of Spleen Length and Volume: An Ultrasonographic Study in Children. *Ultrasound in medicine & biology* 2016; 42(8): 1771-78.
26. ZohrehMahmoodi, Mohamad Reza Havasian, JavadAfshari, MortezaSalarzaei. Comparison of the Time Interval between the Onset of Clinical Symptoms and Receiving Streptokinase in Patients with Acute Myocardial Infarction (AMI) at Amir Hospital in Zabol, Iran, 2013. *Int J Adv Res BiolSci* 2017; 4(5): 95-100.
27. Harris RD, Marks WM. Compact Ultrasound for Improving Maternal and Perinatal Care in Low-Resource Settings. *Journal of Ultrasound in Medicine* 2009; 28(8): 1067-76.
28. Gudex C, Nielsen BL, Madsen M. Why women want prenatal ultrasound in normal pregnancy. *Ultrasound in obstetrics & gynecology* 2006; 27(2): 145-50.
29. Bashour H, Hafez R, Abdulsalam A. Syrian women's perceptions and experiences of ultrasound screening in pregnancy: implications for antenatal policy. *Reproductive health matters* 2005; 13(25): 147-54.
30. Sharami S, Faraji R, Khoramnia S, DalileHeyrati S. Survey the Reason of Maternal Request for Prenatal Ultrasound in Low Risk Pregnancy. *Journal of Guilan University of Medical Sciences* 2011; 20(78): 49-55.

Access this Article in Online	
	Website: www.ijarbs.com
Quick Response Code	Subject: Medical Sciences
DOI: 10.22192/ijarbs.2017.04.06.010	

How to cite this article:

Razieh Behzadmehr, Khadijeh Rezaie Keikhaie, Naziyeh Soltan Pour. (2017). The Study of Pregnant Women's Attitude toward Using Ultrasound in Pregnancy and its Diagnostic Value based on the Demographic Features in Amir-al-Momenin Hospital of Zabol, 2015-2016. *Int. J. Adv. Res. Biol. Sci.* 4(6): 58-63.

DOI: <http://dx.doi.org/10.22192/ijarbs.2017.04.06.010>