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Investigating the Attitude of Pregnant Women on the Efficacy of Ultrasound in Diagnosing Pregnancy based on Level of Education and Number of Pregnancies in Zabol Amiral momenin Hospital during 2015-2016

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Abstract

Some pregnant women refer to ultrasound centers in appropriate time, without notifying their doctors, expecting desired results. Given the significant of the issue, the present study was conducted to investigate the attitude of pregnant women on the efficacy of ultrasound in diagnosing pregnancy based on level of education and number of pregnancies. 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 questionnaires used in the present study were 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 version 18.71 subjects (23.7%) were experiencing their first pregnancy, 67 subjects (22.3%) their second pregnancy, 96 subjects (32%) their third pregnancy, and 66 subjects (22%) were experiencing their fourth pregnancies . 112 subjects (37.3%) had no academic educational degree and 68 subjects (22.7%) had academic education**.** . in 77 cases (28.6%), ultrasound request was based on anomaly and 15 cases (5%) were based on pregnancy ultrasound and AFI analysis. The majority of poorly educated patients believe that ultrasound is harmful to their embryos and it manages to identify possible genetic and chromosomal disorders and physical complications of the embryo; they also seem to have insufficient information regarding gestational age and limitations, possibilities, and implications of routine pregnancy ultrasounds. Therefore, it is quite necessary to provide sufficient instruction for mothers regarding anomaly ultrasound.

Key word: Pregnant Women, Education, Ultrasound, Pregnancies.

Introduction

1980s yielded significant discoveries regarding initial stages of pregnancy through various advanced methods, such as Radioimmunoassay (RIA), implemented to discover trace amounts of human chorionic genadoprotein (HCG), and high-power ultrasound analysis systems, equipped with andro-vaginal trans-services [1]. New ultrasound systems have made close observation the early stages of pregnancy before the fifth week after the last menstrual period (LNMP) possible.

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An implanted pregnancy is clinically discernable in early stages nowadays [2]. HCG secretion is inaugurated after the implantation of blastocyst into the endometrium of the uterus; this hormone, small amount of which, less than 1 nanograms per milliliter, is identified with RIA method, is produced by evolving Chorionic villous trophoblastic cells; it can also help detect pregnancy before delayed menstruation [3]. Numerous studies, according to which mortality rate is surprisingly high in the early stages of pregnancy, have been conducted to identify pregnancy early. Out of 100 ovum which are exposed to fertility, 84 ones are fertilized and result in the formation of zygote; however, 15 cases do not result in implantation; thus, 69 blastocysts are implanted in the uterus and lead to the production of HCG (chemical pregnancy). 39% (27 cases) of this amount

are ruined due to menstrual abortion. Consequently, half of initial embryo (42 cases out of 84) is aborted prior to identification by either the mother or the doctor. 25% of remaining 42 cases are threatened by abortion and half of them will ultimately get aborted, known as recognized abortion. However, the above statistics should not be interpreted negatively, because, for a large part, they signify a natural way to remove abnormal embryos. Embryos aborted prior to 6 weeks of pregnancy are removed due to the possibility of chromosomal abnormalities [4]. The inclination of doctors and the willingness of pregnant women have caused the increasing implementation of ultrasound as a diagnostic approach for identifying possible diseases and abnormalities [5]. Recent advances in pre-birth diagnostic methods, especially in case of pre-birth ultrasound, have resulted in better understanding of congenital abnormalities, improving surgical and medical procedures for the treatment of birth defects, and, finally, lessening the risk of the prevalence of unmonitored birth defects and disorders [6]. Some advantages of these method include mother's satisfaction and assurance regarding the health of the fetus and removing the risk of unnecessary treatment of abnormal ultrasound findings in order to prevent possible treatment costs [7]. Some pregnant women refer to ultrasound centers in appropriate time, without notifying their doctors, expecting desired results. Given the significant of the issue, the present study was conducted to investigate the attitude of pregnant women on the efficacy of ultrasound in diagnosing pregnancy based on level of education and number of pregnancies.

Material and Methods

The present descriptive-analytical study was conducted on pregnant women referring to Zabol Amiralmomenin Hospital during 2015-2016. 200 samples were collected with certainty level of 95%and error rate of 5% through the following formula [8]; samples were collected randomly and a questionnaire, prepared based on former studies, experiences of authors [9], gynecologists, and radiologists of Iran, was used to acquire necessary information through face to face interaction. the questionnaire included items on demographic information and the history of the pregnancy of the subject, age, educational level (illiterate, lower than associate degree, associate degree, and academic education), residence (city, village), number of children, the applicant of ultrasound (the doctor or the patient herself), and the number of ultrasounds conducted during one pregnancy. Normal, risk-free pregnancy with no necessity of special medical observation was the inclusion criterion of the present study; thus, mothers with, according to the definitions and standards of previous studies, high-risk pregnancy, such as history of previous fetal death, fetal chromosomal or structural abnormalities, previous cervical incompetence, premature rupture of membranes, a family history of genetic problems, and any miscellaneous disease such as high blood pressure, or heart disease, were excluded from the present study [10]. Collected information was analyzed in terms of frequency, percent, mean, and SD through SPSS, version 18 [11-14].

Findings

Out o5f 300 studied pregnant women, 31 subjects (10.3%) aged less than 20 years, 148 subjects (49.3%) were between 20 to 30 years, 105 subjects (35%) aged between 30 to 40 years, and 16 subjects were more than 40 years old. 71 subjects (23.7%) were experiencing their first pregnancy, 67 subjects (22.3%) their second pregnancy, 96 subjects (32%) their third pregnancy, and 66 subjects (22%) were experiencing their fourth pregnancies (Table1).112 subjects (37.3%) had no academic educational degree and 68 subjects (22.7%) had academic education (Table2). 118 subjects (39.3%) had conducted 3-4 and 45 subjects (15%) had conducted more than 5 ultrasound scans during their current pregnancy. in 77 cases (28.6%), ultrasound request was based on anomaly and 15 cases (5%) were based on pregnancy ultrasound and AFI analysis. Out of 300 studied pregnant women, 63 subjects (21%) were supposed to show possible genetic and chromosomal complications in the ultrasound of the first trimester, 71 subjects (23.7%) in the second, and 22 subjects (7.3%) in the third trimester ultrasound; it was possible for 34 cases (11.3%) to show genetic and chromosomal complications in any conducted ultrasound at whatever age desired (Table3). It also seems that ultrasound can identify possible embryonic abnormalities in 223 subjects (74.3%) and it fails to identify possible abnormalities in 50 subjects (16.7%); it seems that ultrasound can partially identify possible abnormalities in 27 subjects (9%).

Discussion

Ultrasound is quite effective in diagnosing and treating prenatal issues and clinical complications, such as identifying pregnancy, diagnosis of multiple pregnancy, estimating gestational age, location of placenta, fetal monitoring, assessment and investigation of the cause of post-labor bleeding, and caesarean scar [15]. The majority of formerly

conducted studies on ultrasound are focused on the consequences of low-risk pregnancies and medical aspect of ultrasound and there have been few studies on the attitude of the mothers and the causes of the conduction of ultrasounds. Thus, the present study was conducted to investigate the attitude of pregnant women on the efficacy of ultrasound in diagnosing pregnancy based on level of education and number of pregnancies in Zabol Amiralmomenin Hospital during 2015-2016. The majority of studied mothers, 67.7%, have a positive attitude towards ultrasound. Larson and et al study, 2000 showed positive feedback of participating subjects regarding ultrasound [16]. According to Venice et al study 2002, 21.2% of studies women showed partially positive and 62.7% of them showed totally positive attitude towards pregnancy ultrasound [17]. According to the findings of Ranji et al study 2010, 42.9% of studies subjects gave positive feedback to ultrasound because it ensured the health of the embryo and showed the sex of the baby [18]. 47% of subjects participating in the present study believe that ultrasound can identify possible genetic and chromosomal abnormalities of the embryo; there turned out to be a positive, significant relationship between the level of education of the mothers and their feedback to the efficacy of ultrasound (P=0.001); a more number of mothers with lower educational degree believed in the efficacy of ultrasound in identifying possible genetic and chromosomal abnormalities. According to Harris et al study, 2009, ultrasound can identify Down syndrome and miscellaneous chromosomal complications in, almost, 30% of studies subjects [19]. Therefore, presenting appropriate information about the capabilities and limitations of sonography is necessary to reduce the unreasonable demands [20]. There was a significant relationship between the number of ultrasounds and the educational level of the mother in the present study; i.e. the higher the educational level, the more the number of ultrasounds (P=0.005). Based on Sharemi et al study 2011, there is a significant relationship between the number of ultrasounds and the educational level of the subject; i.e. the higher the educational level, the more the number of ultrasound requests [21]; this was consistent with the findings of the present study. However, there was no significant relationship between different age, income, educational groups and the expectations of ultrasound in Stephen's study [22]. There was, also, a significant relationship between the number of ultrasounds and the times of pregnancy; there was also higher rate of ultrasound frequencies in those groups which included fewer alive babies (P=0.0001), which can signify a willingness resulting from the first pregnancy. According to Sharemi et al study, women with less pregnancies and deliveries had asked for more number of ultrasounds. Therefore, midwifery variables (number of pregnancy, number of delivery, number of children) were the main causes for requesting ultrasound; the lower the number of deliveries and children, the higher the number of ultrasounds. These findings belonged to Godox et al study 2006, according to which nulliparous women showed more inclination for ultrasound in comparison to women who had children [23]. Despite the rarity of prenatal ultrasound as a diagnostic method, it seems that patients enjoy and ask for this procedure [22].

Conclusion

According to the findings of the present study, the majority of poorly educated patients believe that ultrasound is harmful to their embryos and it manages to identify possible genetic and chromosomal disorders and physical complications of the embryo; they also seem to have insufficient information regarding gestational age and limitations, possibilities, and implications of routine pregnancy ultrasounds. Therefore, it is quite necessary to provide sufficient instruction for mothers regarding anomaly ultrasound.

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Table 1: Frequency distribution of the number of pregnancies in studied pregnant women

Number of pregnancies	Frequency	Percent
First pregnancy	71	23/7
Second pregnancy	67	22/3
Third pregnancy	96	32
Fourth and more pregnancy	66	22

Table 2: Frequency distribution of the level of education of studied pregnant women.

Level of education	Frequency	Percent
Illiterate	67	22/3
Lower than associate degree	112	37/3
Associate degree	53	17/7
Academic education	68	22/7

Table 3: Frequency distribution of the objective of pregnancy ultrasound depending on doctor's prescription in studied pregnant women.

The objective of pregnancy ultrasound depending on doctor's prescription	Frequency	Percent
Complete pregnancy ultrasound	82	27/3
Anomaly ultrasound	77	28/6
NT ultrasound	45	15
Positive pregnancy ultrasound and GA analysis	21	7
AFI analysis	27	9
Pregnancy ultrasound and AFI analysis	15	5
Biophysical profile ultrasound	13	4/4
Without prescription	20	6/7

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