



Pregnant Women's Knowledge and Source of Information Towards Ultrasound Scan in Saudi Arabia

KEYWORDS

Knowledge , Purpose , Ultrasound scan , Pregnant women's .

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ABSTRACT *Ultrasound Scan (U/S) has become an almost universal part of antenatal care in developed countries. To best of our knowledge there was no similar study done in Taif. So this study aimed to assess pregnant women's knowledge about the importance of prenatal sonography and their purposes from it.*

Methods: 151 pregnant women attending antenatal clinic were asked to fill in a pretested structured questionnaire .SPSS was used for the data analysis.

Results: Most of the study sample were Saudi and their age ranged (16 –59) year, (86.8%) had university education , (86.8%) heard about ultrasound before and obstetrician was main source of information (60.9 %), friends and family represented (21.2%). (64.2%) had more than one purpose from the scan.

Conclusion: In this study women had modest knowledge and had more than two purposes from U/S.

Recommendation : Educational plan must be implemented to help pregnant women to increase their knowledge.

Introduction :

Ultrasound scans have become an almost universal feature of pregnancy care in countries with developed health services. As part of a larger study of the evidence about the clinical and economic impact of pregnancy ultrasound.^[1]

Internationally women rate ultrasound during pregnancy as one of the most important aspects of their antenatal care.^[2] Ultrasound techniques are being developed further as are new methods for fetal diagnosis. For example the three-dimensional scanner which sends sound waves at different angles, producing a lifelike 3-D picture. If further developed, it might be even better for examining fetal anatomy than real-time two-dimensional ultrasound.^[3] It has been widely accepted to be the most accurate medical technique in assessing pregnancies.^[4] A mid-trimester fetal U/S scan performs at 18-22 weeks of gestation provides diagnostic information that directs the antenatal care for the best outcomes for the mother and her fetus, including fetal growth and wellbeing.^[1]

In Saudi Arabia, most antenatal units offer routine U/S scan in early and mid-trimester of pregnancy. U/S scan is used for confirmation of gestational age, identifying multiple pregnancy, confirming fetal viability, estimating date of birth and localizing the placenta.^[5,6] Mothers' expectations from U/S scan vary between different communities, and are influenced by the culture and the norms of these communities.^[7]

In a recent Swedish study, women expected to get confirmation of the normality of their fetus , but one of the health care's purposes of the examination is to exclude malformations. ^[8,9] Twin pregnancy could be detected earlier.^[10] The detection rate for malformations varies widely in published studies, due to differences in definition of the concept of malformation.^[11,12]

Fetal sex can be determined as early as 13 to 14 weeks, most experts agree that the sonographic detection rate

sharply increases after 18 weeks of gestation. ^[13] Fetal sex can be detected sonographically and the genitalia can be predicted successfully (83.5%)of the time between 16-20 weeks gestation.^[14]

Research into women's knowledge and attitudes towards ultrasound services is especially important given that previous studies have documented significant psychological harm from antenatal ultrasound, as well as positive psychological effects. This is especially common in areas where an ultrasound service has been newly introduced. ^[15,16,17,18] Researchers have tried to improve the information provided to women, although only one randomized trial has been identified. ^[19]

Wahabi et al., concluded in her study which was done in Riyadh region that Saudi mothers' knowledge about the purpose of mid-trimester ultrasound scan is modest. ^[20]

The few published studies from the Middle East about the expectations of the mothers from the U/S scan showed that high percentage of the respondents was expected to know the gender of the baby and felt disappointed when they were not directly told or when the gender was opposite to that they were hoping to have.^[21,22,23]

Two Swedish studies carried out in the 1990s of women coming for routine mid trimester scan, asked in different ways about women's knowledge of what the scan was for. ^[24,25]

A more recent Danish study of women's knowledge about mid trimester ultrasound showed a high level of appropriate knowledge and high satisfaction with the scan. ^[26]

However one of the main purposes of the mid-trimester U/S is detection of structural abnormalities especially in communities with high rate of maternal diabetes and recessive genetic abnormalities. In a recent study routine mid-trimester USS detected nearly 70% of major structural

abnormalities in unselected population.^[27]

Material and Methods:

Study design : Cross-sectional serve study was conducted from June-Aug 2015.

Setting: At the obstetrics ultrasound department at Alamin Hospital in Taif City, Saudi Arabia.

Sample: All pregnant female who attended a consultation with one of the Obse physicians were invited to be interviewed (151 female).

Tool: An information sheet was explained and offered to all participants. Examination was conducted by certified sonographers supervised by a medical doctor specialized in obstetric ultrasound scanning. No patients declined to participate in this study.

Method: A questionnaire was designed to include the demographic characteristics of the study sample (age , educational level , economic status and obstetric information such as parity and gravidity) and to determine their knowledge about the purpose of ultrasound scan, the purpose from the scan and the source of information choices were; (family , friend , media, obstetrician , doctor or midwife) provided to them about the second trimester sonographic scan.

Statistics analysis was done for demographic variables using (SPSS).Association between women’s knowledge , source of information and educational level was analyzed using version 21.0 and with chi-square test. (P≤ 0.05) to be considered significant.

Ethical Considerations :

Verbal permission to undertake the study was obtained from all participants in the study, and no personal information will be published.

Results:

One hundred and fifty one women consented orally to participate in this study and all of them were completed the questionnaire.

Table (1) : Distribution of age ,education level , social status and parity among study sample (N = 151)

Age	Freq	%	Social Status	Freq	%	Education Level	Freq	%	Parity	Freq	%
16-26	56	37.1	Low	6	4.0	Illiterate	1	0.7	Primigravida	58	38.4
27-34	69	45.7	Mid	131	86.8	Under graduate	73	48.3	Multigravida	93	61.6
35-59Y	26	17.2	High	14	9.3	University or higher	77	51.0	Total	151	100.0
Total	151	100.0	Total	151	100.0	Total	151	100.0			

Fig (1) : Heard about U/S before? (N=151)

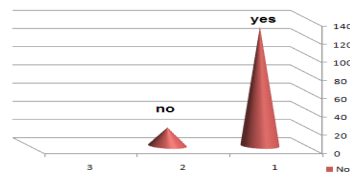


Table (2): Sources of participants knowledge and how many time they did U/S. (N=151)

From where you heard about ultrasound scan	Freq	%	How many times you did ultrasound	Freq	%
			One time	2	1.3
Family	12	8.0	Twice	90	59.6
Friends	32	21.2	More than three times	59	39.1
Media	13	8.6	Total	151	100.0
Obse.	92	60.8			
Nurse	1	.7			
Others	1	.7			
Total	151	100.0			

Table (3) : U/S purposes and Knowledge of Participants regard its effects. (N = 151)

The purposes from ultrasound scan during pregnancy	Freq	%	Do you think there are any bad effects from U/S	Freq	%	If yes what are they?	Freq	%
To see the fetus	9	6.0	Yes	25	16.6	Biological effects	1	4
To know the gender	19	12.6	No	126	83.4	Harm to fetus	8	32
To know that the fetus is alive	5	3.3	Total	151	100.0	One causes of anomalies	16	64
To know the gestational age	5	3.3				Total	25	100
Assess fetal growth	7	4.6						
To check the fluid around the fetus	3	2.0						
To know if the fetus has any								
To know if there is any abnormalities	6	4.0						
More than one choice	98	64.9						
Total	151	100.0						

Table (4) : Do you think there is any bad effects from ultrasound * Education level (N = 151)

Education level	Do you think there is any bad effects from ultrasound	Total	Chi-Square Tests \ value	Asymp. Sig. (2-sided)
Yes				
No				
Illiterate	1	1	9.3	.010 SN
	0	0		
Under graduate	9.6%	90.4%	100.0%	
	22.1%	77.9%	100.0%	
Total	16.6%	83.4%	100.0%	

significant value = .010

Table (5) : Heard about ultrasound before * Social status : (N = 25)

Heard about u/s before	Social status			Total	Chi-Square Tests \ value	Asymp. Sig. (2-sided)
	Low N \ %	Mid N \ %	High N \ %			
Yes	4 3.1%	117 89.3%	10 7.6%	131 100.0%	28.2	0.00 SN
No	5.3%	73.7%	21.1%	100.0%		
I don't know	100.0%	0.0%	0.0%	100.0%		
Total	4.0%	86.8%	9.3%	100.0%		

significant value = 0.00

Discussion and results :

Routine U/S has become an integral part of antenatal care provision now a days. 151 women consented orally to participate in this study and all of them were completed the questionnaire.

Age range was (16 - 59) years , most of them were university educated (86.8%), while only (0.7%) were illiterate. (86.8%) were from middle social class and heard about U/S before. (86.8%) heard about ultrasound and the obstetrician/mid wife was the main source of information (60.9 %) , friends (29.2%) so they play an important role in dispersing information and nurse was the least (0.7%) table (1) & fig (1) , which is consistent with prior qualitative studies into knowledge of ultrasound in developed and developing countries.^[18] The utilization of any source of information about ultrasound examination increased with the increase of the level of maternal education as reported by one study that in some cases the expectations of well educated pregnant women, 'especially those involved in medical fields' were even higher. Even in some extreme cases the numbers of scans they got were more than what was recommended by their physician.^[28] Women with higher age and education had higher levels of knowledge about the nature and reasons of prenatal sonography.^[29]

In this study (59.6%) prefer to do ultrasound twice during their pregnancy and (39.1%) more than three times, table (2), compared with studies done in Syria , Iran and Hanoi (Vietnam).^[21, 22, 30] , Gammeltoft T et al study reported that less than a tenth (8.7%) had 4 or more scans, in Hanoi two-thirds had more than four and a one-fifth had more than 10 scans.^[30]

(64.2%) had more than one purpose (know the gender of the fetus, to confirm that the fetus is alive , to know the number of the fetuses , to check the water around the fetus or to know the expected date of delivery).(12.6%) to know the gender (main reason assigned for wanting to know fetal gender was the desire for a particular gender). (4.6%) want to assess fetal growth and only (4%) to screen for congenital malformations , table (3). Eurenus et al ^[25] have shown that about (80%) of women in their set up knew that the ultrasound is performed for the diagnosis of fetal abnormalities. Earlier studies show that women were not always aware that the scan might detect malformations, or they expected the scan to show that they carried a healthy baby. ^[24,25] Later studies show that women have more realistic expectations of the purpose of the scan and what it might reveal.^[26,31,32] (82.1%) in our study population thought that ultrasound is performed mainly to predict fetal growth, which is consistent with those of the other

studies. ^[33]

Study by (Lalor J., Begley) ^[34] reported that ; expectations of an ultrasound scan is to find out whether the baby is healthy. Study in Sweden indicates that most prominent expectation about the scan were the confirmation of the pregnancy and the health of the fetus and the mother.^[8]

Only (16.6%) think there were bad effects of U/S during pregnancy in this study and regard these effects (64%) said its one causes of fetal anomalies , (32%) said that its harm to fetus and (4%) said U/S can cause biological effects to mother and fetus.(100%) of an illiterate participants answered with yes to question (do you think that ultrasound had any bad effects?) , while (83.4%) from educated people answered with no and this can be explained that participants who believed that u/s to be safe based on trust in knowledge of doctors and experiences of their family and friends, as in table (4). However, in support of our study their knowledge level varies depending on their level of education and social status. For example, the only thing the participants without formal education know about obstetric scan is the fact that sonography is initiated to confirm the viability of the pregnancy, and the number of fetuses. ^[28]

A number of studies done in some of the developing countries reveal that the majority of women complain that they have little knowledge about the importance of getting an ultrasound scan during pregnancy and they are not really sure what to expect from the procedure. However, the continuation of the study shows that these women are enlightened and satisfied with the amount of information they receive during the ultrasound exam. ^[35] Fear of harm of ultrasound to the fetus or mother is now an unusual concern in developed countries. ^[30,36]

(96.9%) from the mid to high social class from the study sample said that they heard about ultrasound during pregnancy , while only (3.1%) from low social class heard about ultrasound scan , table (5).

So in this study most of the women had good knowledge compared with one study reported only (33.7%) had good knowledge about the importance of ultrasound exam during pregnancy.^[37]

In conclusion , women in our study consider U/S to be a useful test during pregnancy and they a device pregnant women to do it; this is through their personal experience supplemented by friends and family.

Recommendation :

Educational plan must be implemented to help pregnant women to increase their knowledge and to assess their own concerns and expectations from U/S during pregnancy.

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Competing interests :

The author declares no competing interests.

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