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Research Article

Knowledge and attitude regarding obstetric ultrasound among pregnant women: a cross sectional study

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ABSTRACT

Background: Ultrasound examination forms an integral part of antenatal care both in high risk and normal pregnancies. Even though it acts as a source of reassurance about the well-being of her baby and also a source of connecting with her baby in the antenatal period, for many pregnant mothers in India it is still only a tool for sex determination and its other major uses remain in the background. Fear regarding its safety and doubts about its necessity are also prevalent among pregnant women. The purpose of this study is to assess the knowledge of antenatal mothers regarding the uses of ultrasound during pregnancy and also to assess their attitude towards ultrasound.

Methods: This is a descriptive cross sectional study carried out in Sri Manakula Vinayagar medical college and hospital, Puducherry, India between the periods of April 2014 to July 2014. 300 pregnant women were selected by simple random sampling among patients attending the antenatal clinic for routine checkup irrespective of their parity. After obtaining informed consent, these women were given a predesigned, self-administered questionnaire in local language that had questions on socio demographic data, knowledge regarding use of ultrasound in pregnancy, attitude towards ultrasound, source of information about ultrasound and awareness regarding PNDT act. The data was entered in SPSS and analyzed using descriptive statistics.

Results: Although awareness regarding the indications for USG during pregnancy was found to be fairly good among the participants, 36% of them assumed determination of sex in utero as an indication for ultrasound. 88% of them considered ultrasound as safe and 98% considered it essential. 26% of the pregnant women considered that sex determination was permissible by law. Most of them obtained information regarding ultrasound from health providers and the role of media was negligible.

Conclusions: Awareness regarding the uses of USG during pregnancy and attitude towards ultrasound was good but knowledge about recommendations of PNDT act was lacking in pregnant women and so every possible route particularly extensive media coverage can be used to create awareness regarding the recommendations of the PNDT act to the public.

Keywords: Knowledge, Attitude, Ultrasound, Pregnant women, PNDT act

INTRODUCTION

Ultrasound examination during pregnancy has become an integral part of antenatal care throughout the world. This technology is an important tool for the obstetricians, to reassure their patients regarding the well-being of their fetus in utero. In a clinician's point of view, it is

particularly useful in the management of high risk pregnancies, but is also used routinely in low risk pregnancies for detection of congenital malformations in the fetus, to locate placenta, to assess the presentation of the baby and its well-being. For a pregnant mother, ultrasound is a source of connecting with her baby and there is a belief that it initiates bonding with the baby.¹

Studies have shown that USG is responsible for maternal-fetal attachment and also helps in reducing maternal anxiety.²

With the wide availability of ultrasound, the expectation of the general public towards ultrasound has dramatically increased but the actual knowledge regarding its use and its limitations are lacking in them. For many expectant parents in India, ultrasound is only a tool for sex determination. In spite of media coverage, the knowledge regarding PNDT act among antenatal women in studies from Rajasthan and Mumbai were found to be only 52.4% and 34.3% of their study population.^{3,4}

Being a technology that is widely available, doubts' regarding its safety and usefulness is still persistent in antenatal mothers. The purpose of this study is to evaluate the knowledge of antenatal mothers regarding the uses of ultrasound during pregnancy and also to assess their attitude towards ultrasound.

METHODS

This is a descriptive cross sectional study carried out in Sri Manakula Vinayagar Medical College and Hospital, Puducherry, India between the period of April 2014 to July 2014 to assess the knowledge and attitude regarding uses of ultrasound in pregnant mothers. 300 pregnant women were selected by simple random sampling among patients attending the antenatal clinic for routine checkup irrespective of their parity. After explaining the purpose of the study and after obtaining informed consent, these women were given a predesigned, self-administered questionnaire in local language.

The questionnaire contained details of socio-demographic data and questions to assess knowledge and attitude regarding ultrasound in pregnant mothers. The knowledge part included 9 questions in the yes or no format to assess their knowledge of indications for ultrasound use during pregnancy. Attitude regarding ultrasound was assessed using questions which included questions on safety, its importance and the comfort level during USG examination using the Likert scale.⁴ Questions regarding their source of information and ideal number of scans formed the fourth part of the questionnaire. Awareness regarding PNDT act was assessed by asking them if they considered sex determination by ultrasound to be permissible by law. The data was entered in SPSS and analyzed using descriptive statistics. Institutional ethics committee approval was obtained for the study.

RESULTS

Among the 300 participants, 83% were between 20-30 years and almost 99% of the study group has had formal education. 51% of the study group were primigravida women and 49% were multiparous. 33% of the

participants have already had exposure to ultrasound for reasons other than pregnancy.

Table 1: Socio demographic data of participants.

Age	No	%
< 20	15	5
20 - 30	249	83
> 30	36	12
Parity		
Illiterate	3	1%
School education	171	57%
Graduate	126	42%
Occupation		
Working	96	32
Homemaker	204	68
Parity		
Primi	153	51
Multi	147	49
Exposure to USG for reasons other than pregnancy		
Yes	99	33
No	201	67

Awareness regarding the indications for USG during pregnancy was found to be fairly good among the participant which is evident in Table 2. But 36 % of the participants assumed determination of sex in utero as an indication for USG during pregnancy which shows their ignorance of the PNDT act.

Table 2: Knowledge of pregnant women regarding uses of ultrasound.

Use of ultrasound	Yes		No	
	No	%	No	%
To detect defects in the baby	210	70	90	30
To find the fetal position	222	74	78	26
To find the expected date of delivery	258	86	42	14
To determine the sex of the baby	108	36	192	64
To determine the position of cord and placenta	201	67	99	33
To assess growth of the baby	264	88	36	12
To confirm pregnancy	258	86	42	14
To confirm presence of multiple pregnancy	237	79	63	21
To confirm well-being of the fetus	267	89	33	11

Almost 98% of the participants agreed that USG in an essential investigation during pregnancy but only 88% agreed that it was absolutely safe. 24% of the participants were uncomfortable during the examination. The communication of the findings of USG examination was not considered adequate by 19% of the participants.

Table 3: Attitude towards ultrasound during pregnancy.

Attitude	Agree		Neither agree nor disagree		Disagree	
	No	%	No	%	No	%
Ultrasound is safe during Pregnancy	264	88	12	4	24	8
Ultrasound in an essential investigation during pregnancy	294	98	6	2	-	-
I felt comfortable during ultrasound examination	246	82	30	10	24	8
I was given details of my baby by the doctor who performed the scan	243	81	-	-	57	19

Table 4: Source of information and awareness of PNDT act.

Ultrasound advised by		
	No	%
Doctor	261	87
Nurse	18	6
Husband	12	4
Friends	9	3
Information regarding USG from		
Doctors	264	88
Nurse	12	4
Friends/relatives	18	6
Media	4	2
Number of USG you consider is as ideal during pregnancy		
1	12	4
2	60	20
3	138	46
4	45	15
> 4	45	15
Do you think sex determination is permissible by law?		
Yes	78	26
No	222	74

Ultrasound was advised by the treating Obstetricians in 87% and 88% obtained information regarding ultrasound only from their doctors. Information obtained through media regarding ultrasound was negligible in the study. Regarding the ideal number of ultrasound during pregnancy 46% of the participants had considered that at least 3 scans were necessary.

When asked indirectly regarding the legal aspect of sex determination by ultrasound 26% had said that sex

determination was permissible by law which shows that more awareness to be created regarding the PNDT act.

DISCUSSION

The awareness regarding the uses of ultrasound during pregnancy was fairly good among our participants. 88% of our subjects considered monitoring growth of the baby were the main indication for the ultrasound which is consistent with other studies. In a study by Munim et al, 82.1% considered monitoring growth as the main use, whereas only 51.9% of their study subjects considered USG as a tool to rule out structural malformations as compared to 70 % of our participants.⁵ Similar studies by Wahabi et al from Saudi Arabia and Eniyandunni et al from Lagos, Nigeria have shown that only 19.8% and 17.5 % of their participants were aware that ultrasound was used to rule out structural malformation.^{6,7}

In our study 36% of the participants considered sex determination as an indication for ultrasound during pregnancy and 26% of them considered that sex determination was permissible by law. This shows their lack of awareness regarding the components of PNDT act. In their study on knowledge and attitude of pregnant mother regarding PNDT act carried out in a teaching hospital in Mumbai, the authors had shown that 34.3% their study subjects were aware of PNDT act and 77.1% of them considered that sex determination was a crime.⁴ A study from Rajasthan showed that the overall knowledge about PNDT act was present among 52.4% of their participants.³

Doubts' regarding safety of ultrasound is persisting in all societies. Studies have shown that patients considered that too many ultrasound may be harmful to the baby and also had belief that ultrasound could cause cancer.⁸ In a qualitative study from Tanzania, many women believed that ultrasound could cause significant impairment to the mothers or their babies.⁹ But in our study we found that 88% of the participants considered ultrasound as safe and 82% of them claimed to have been comfortable during the examination.⁷

In our study 98% of the subjects, considered ultrasound as an essential component of antenatal care. Similar attitude was found in other studies from Pakistan and Ghana in which 93.5% and 95.3% considering ultrasound as an important investigation during pregnancy.^{5,10} In a study from Nigeria by Ikeako et al 73.1% of their subjects considered ultrasound as a routine test done for every pregnant woman.¹¹

As compared to a study on Ghanaian woman in whom 70.9% had complained that the sonographer did not communicate to them during and after the procedure only 19% of our participants felt that the person performing the ultrasound did not effectively communicate with them.¹⁰

Information regarding ultrasound was received from their treating doctors by 88% of our participants and only 2% received their information from the media. The above findings show that media coverage regarding judicious usage of ultrasound and particularly regarding sex determination and PNDT act is lacking.

CONCLUSION

In this study, the awareness regarding ultrasound use during pregnancy is fairly good. But in a socio-cultural background with a preference to a male baby, ultrasound is being used as a tool for sex determination followed by sex selective abortions in spite of strict regulations by the government. So every possible route should be used to create awareness regarding the recommendations of the PNDT act among the public.

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REFERENCES

1. Enakpene CA, Morhason-Bello IO, Marinho AO, Adedokun BO, Kalejaiye AO, Sogo K, et al. Clients reasons for prenatal ultrasonography in Ibadan, South west of Nigeria. *BMC Women's Health.* 2009;9:12.
2. Boukydis CF, Treadwell MC, Delaney-Black V, Boyes K, King M, Robinson T, et al. Women's responses to ultrasound examinations during routine screens in an Obstetric clinic. *J ultrasound Med.* 2006;25(6):721-8.
3. Khatri M, Acharya R, Sharma G. Knowledge attitude and practices related to preconception and prenatal diagnostic techniques Act among the antenatal women in Bikaner. *Scientific Reports.* 2012;1:121.
4. Shidaye PR, Giri PA, Nagaonkar SN, Shidaye RR. Study of knowledge and attitude regarding prenatal diagnostic techniques act among the pregnant women at a tertiary care teaching hospital in Mumbai. *J Edu Health Promot.* 2012;1:36.
5. Munim S, Khawaja NA, Quereshi R. Knowledge and awareness of pregnant women about ultrasound scanning and prenatal diagnosis. *J Pak Med Assoc.* 2004;54:553-5.
6. Wahabi HA, Channa NA, Fayed A, Esmaeil SA, Masha ARO, et al. Knowledge, expectations and source of information of pregnant Saudi women undergoing second trimester ultrasound examination. *Gynecol Obstet. (Sunnyvale).* 2014;4:243.
7. Eniyandunni F, Soyebi K, Irurhe N, Olowoyeye O, Adeyomoye A, Ketiku K, Arogundade R. A survey of psychological reaction and perception of pregnant women, to prenatal ultrasonography in Lagos University teaching Hospital, Idi-Araba, Lagos. *The Internet Journal of Health.* 2010;13(1):1-9.
8. Oche OM, Umar AS, Raji MO, Kaoje AV, Godwin G, Ango JT, et al. Knowledge of the uses and indications for Obstetric ultrasound scan among women attending a main referral Hospital, Sokoto, Nigeria. *Research in Obstetrics and Gynecology.* 2013;2(5):55-62.
9. Firth ER, Mlay P, Walker R, Sill PR. Pregnant women's beliefs, expectations and experiences of antenatal ultrasound in Northern Tanzania. *African Journal of reproductive health.* 2011;15(2):91-107.
10. Mensah YB, Nkyekyer K, Mensah K. The Ghanaian woman's experience and perception of ultrasound use in antenatal care. *Ghana medical journal.* 2014 8;48(1):31-8.
11. Ikeako LC, Ezegwui HO, Onwudiwe E, Enwereji JO. Attitude of expectant mothers on the use of ultrasound in pregnancy in a tertiary institution in South east of Nigeria. *Ann Med Health Sci Res.* 2014;4:949-53.

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