

Acceptability of Transvaginal, Translabial and Transrectal Sonography in a Conservative Society in Northern Nigeria: A Cross Sectional Study

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ABSTRACT

Background: Trans-vaginal sonography has revolutionized the assessment of the gynaecology patient and evaluation of early pregnancy complications. Trans-labial and trans-rectal sonographies also play some role in the evaluation of such group of women.

Objective: To assess the acceptability of women to trans-vaginal, trans-labial and trans-rectal sonography.

Materials and methods: This is a cross sectional study of unselected women attending obstetrics and gynaecology clinics of the University of Maiduguri Teaching Hospital from January to March 2015.

Results: There were 164 participants with a mean age of 29±5.19 years. Majority 52(31.7 %) were aged between 25-29 years; while 26(15.9%) were more than 35 years. A large proportion of women were currently married 149(90.8%). Most, 81(49.4%) were multipara. Majority of respondents 69(42.1%) had tertiary education while 17(10.3%) had no formal education. Muslims, 144(87.8%) were in the majority. The highest proportion of women were Kanuri/Shuwa ethnic group 83(50.6%), with most 117(71.3%) being housewives. The acceptance for Trans-vaginal scan (TVS), Trans-labial scan (TLS) and Trans-rectal scan (TRS) were 106(64.6%), 124(75.6%) and 97(59.1%) respectively. Only 2(1%) had TVS previously. Reasons for not accepting the various methods include pain, fear, lack of privacy, not comfortable, may cause problems, may affect the uterus and never done it before. Peculiar reasons for not accepting TRS include the fact that it is disgusting and shameful.

Conclusion: The highest level of acceptance was for TLS, closely followed by TVS and the least was acceptability of TRS. Overall, the level of acceptance was high for all the modalities studied. The reasons for not accepting the studied modalities were concerns that could be allayed during counseling for the procedure as the reasons are groundless.

KEYWORDS: acceptability, unselected population, trans-vaginal scan, trans-labial scan, trans-rectal scan, counseling

Introduction

Ultrasound scan, a household name in obstetrics and gynaecology, is a painless, safe and reliable procedure^{1, 2}. Trans-vaginal scan (TVS) is a latter addition to the diagnostic armamentarium available for the evaluation

of female pelvis. Same applies to trans-labial and trans-rectal ultrasound scan³. The last two are less commonly used because the indications are few. Transvaginal ultrasonography has the advantage of much greater resolution, allowing consistent visualization of the sac and embryo in early pregnancy with identification of the embryo as small as 2 mm⁴. It is also valuable in assessing the Pelvis in the non-pregnant state and in the evaluation of early pregnancy complications like ectopic pregnancy and miscarriage. Trans-rectal ultrasound is a useful alternative in virgin girls with primary amenorrhoea and in post-

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menopausal women with mass in the vagina like advanced cancer of the cervix. Trans-labial scan is useful in assessing the cervix especially when there is risk of preterm birth.

TVS is most frequently used in the evaluation of ovulation and oocyte recovery in infertile patients and in monitoring follicular development^{4, 5}. TVS overcomes difficulty in imaging obese patients and those with large amount of bowel gas. There is no special preparation required for vaginal scan, in particular the bladder does not need to be filled; this avoid the discomfort some women experience during an abdominal scan, when a probe is pressed onto the abdomen⁶.

TVS provides more information than trans-abdominal ultrasound scan in most cases⁷. However the technique is limited in some circumstances because of the smaller field of trans-vaginal probe. The drawback of TVS is that it may be limited in patients with large uterine fibroids and evaluation of laterally displaced ovaries. This is where trans-abdominal scan is superior to TVS, because a global view of the pelvis can be obtained in the former. TVS is an invasive procedure, may be difficult in some women, uncomfortable in others and could trigger vaginismus and post-traumatic stress symptom^{6, 7}. Prior to 2012 only trans-abdominal scans were done in our department. TVS was popularized in the department in 2013. Our society is conservative in nature and any procedure that requires intrusion into the privacy of the woman may be fraught with some challenges. It is against this backdrop that we carried out this study to assess the acceptability or otherwise of trans-vaginal, trans-labial and trans-rectal sonography. This information would form the basis for future studies and also help us in counseling our patients on the available imaging modalities.

Materials and Methods

This cross sectional, questionnaire-based

study was conducted in the department of obstetrics and gynaecology of the university of Maiduguri teaching hospital among unselected population of women who availed themselves to the services of the department. It was a convenience sampling of 200 women out of which 182 returned the questionnaires, giving a response rate of 91%. Out of the 182 questionnaires returned, 164 had complete information for analysis. The study was carried out between January and March 2015. The questionnaire, which consisted of 23 questions, was largely close-ended with few open-ended questions. The various modalities of ultrasound scan were explained to the participants before the commencement of the study. Respondents were asked about their socio-demographic characteristics, whether they had ultrasound scan before and the reason(s) for the scan(s), acceptability of trans-vaginal, trans-labial and trans-rectal ultrasound and reasons for non-acceptance of any. Respondents were also asked to choose the most preferred modality and give reason (s). The anonymous questionnaires were then handed out to the participants who gave verbal consent and were interested in participating. Interviews were conducted for those who were not lettered. Different images of trans-vaginal probe were shown to the participants before completion of the section of the questionnaire that dealt with trans-vaginal scan. After collection, data was verified, coded and transferred into an IBM compatible PC and analyzed using IBM SPSS (Version 20 NY, USA). Simple descriptive univariate analysis was performed to determine the frequency of the various factors. Means and standard deviations for continuous variables were computed.

Results

There were 164 questionnaires analyzed. Table 1 depicts the socio-demographic characteristics of the respondents. The age ranged between 18 and 42 years. The mean age was 29±5.19 years. Majority 52(31.7%)



were aged between 25-29 years; while 26(15.9%) were more than 35 years. A large proportion of women were currently married 149(90.8%). Most, 81(49.4%) were multipara. Majority of respondents 69(42.1%) had tertiary education while 17(10.3%) had no formal education. Muslims, 144(87.8%) were in the majority. The highest proportion of women 83(50.6%), were Kanuri/Shuwa ethnic group, with most 117(71.3%) being housewives.

Table 2 details the acceptability of the various methods of ultrasound scan. The acceptance for TVS, TLS and TRS were 106(64.6%), 124(75.6%) and 97(59.1%) respectively. Only 2(1%) had TVS previously.

Reasons for not accepting the various methods include pain, fear, lack of privacy, not comfortable, may cause problems, may affect the uterus and never done it before. Peculiar reasons for not accepting TRS include the fact that it is disgusting and shameful. These are shown in Table 3.

When asked to choose the most preferred method, 132 (80%) had chosen TAS. This is depicted in table 4. The main reasons for choice of TAS over other methods were that TAS was associated with less exposure, 46(28%), less pain 37(23%), and familiarity 24(15%). Other less common reasons were better for my health, give better result, safety, not invasive, does not affect fertility, never done the other methods before.

TABLE 1: Socio-demographic characteristics of respondents (N=164)

Characteristics	Frequency	Percentage
Age		
≤19	14	8.5
20-24	49	29.9
25-29	52	31.7
30-34	23	14.0
≥35	26	15.9
Marital status		
Single	13	8
Married	149	90.8
Divorced	1	0.6
Widowed	1	0.6
Parity		
0-1	55	33.5
2-4	81	49.4
≥5	28	17.1
Education		
None	17	10.3
Primary	16	9.8
Secondary	39	23.8
Tertiary	69	42.1
Quranic	23	14.0
Religion		
Islam	144	87.8
Christianity	20	12.2



Tribe		
Kanuri/Shuwa	83	50.6%
Hausa/Fulani	26	16%
Bura	18	11.1%
Margi	12	7.3%
Others	25	15.2%
Occupation		
Housewife	117	71.3
Farmer	2	1.2
Business	3	1.8
Civil servant	31	19
Others	11	6.7
Total	164	100.0

Table 2: Acceptability of Trans-vaginal, Trans-labial and Trans-rectal ultrasound (n=164)

Route	Yes	No	Total
Trans-vaginal	106 (64.6%)	58(35.4%)	164(100%)
Trans-labial	124 (75.6%)	40(24.4%)	164(100%)
Trans-rectal	97(59.1%)	67(40.9%)	164(100%)

Table 3: Reasons for non- acceptance of different methods of sonography

Reason	*TVS	**TLS	***TRS
May be painful	27(47%)	9(16%)	24(41%)
Fear	9(16%)	00	3(5%)
No privacy	8(14%)	18(31%)	13(22%)
Not comfortable	5(9%)	4(7%)	15(29%)

*Other reasons for not accepting include: may cause problems, may affect uterus, never done it before

**Other reasons for not accepting include: never done it before, not aware of it, no reason

***Other reasons for not accepting include: disgusting, may cause problems, shameful

Table 4: Most preferred route (n=164)

Route	Frequency	Percentage
TAS	132	80%
TVS	19	12%
TLS	9	6%
TRS	4	2%
Total	164	100%

TAS-Trans-abdominal scan, TVS-Trans-vaginal scan, TLS-Trans-labial scan, TRS-Trans-rectal scan

Discussion

Women in our study showed a high degree of acceptance (64.6%) of TVS. This is higher than 55.2% reported by Clement et al⁵, and 28.8% by Komolafe et al⁸. However, our acceptance level is lower than 82% and 88.2% reported by Adithi et al and Braithwaite et al respectively^{9,10}. The higher acceptance level in our study compared with a study from south west Nigeria⁸ may be explained by the fact that women in the north tend to accept things they believe will benefit them without undue resistance. This has also been shown in non-aversion to caesarean delivery in the northeast compared to the south eastern part of Nigeria¹¹.

The level of acceptance of trans-labial scan, 75.6% is higher than that of trans-vaginal scan but acceptance of trans-rectal scan, 59.1% is the least. We could not find studies of acceptability of trans-labial and trans-rectal scan to compare with our findings. The higher acceptance of trans-labial scan is probably because it is less invasive than trans-vaginal and trans-rectal sonography.

The religious distribution of the participants only reflects the predominant religion in the study area. This is explained by the 87.8% Muslims in our study compared with 68.6% Christians in a study from Osogbo southwest Nigeria⁸.

Participants with tertiary education in our study were 42.1% compared with 68% in Osogbo and 56.6% in Ibadan^{2,8}. Despite the fact that the percentage of those with tertiary education is lower in our study, the number who would willingly accept trans-vaginal scan is higher than the study from Osogbo⁸. This suggests that factors other than education play a key role in acceptability of various methods of medical intervention. One study found an association between education and acceptance of TVS while others did not.^{2,8}

The fact that only 1% had trans-vaginal scan before our study was because the procedure was popularized around the time of the study. This is however, lower than 5.5% from Osogbo and 20% from India^{8,9}. With the widespread use since the beginning of this study, it is expected that the level of acceptance would increase when those who undergo TVS are interviewed later as the fears they entertained before the study might have been allayed after undergoing such procedure.

The most common reason (47%), for non-acceptance of TVS was pain. This was lower than 64.6% from a study from Osogbo⁸ but higher than 17.3% from Ibadan². Other reasons for non-acceptance were fear, lack of privacy and being uncomfortable. Our finding is



similar to previous studies^{9,10} The reasons for non-acceptance might change after women undergo the procedure.

When asked to choose the most preferred method of scanning, 80% had chosen TAS. This was consistent with reports from a previous study¹². The leading reasons for preference of TAS in our study were less exposure, 46(28%), less painful, 37(23%) and familiarity, 24(15%). Some previous studies found that women preferred TVS to TAS^{13, 14} possibly because of the discomfort of full bladder associated with TAS.

The external validity of our study is limited by the small sample size and that the population was drawn from a single tertiary health facility. Despite these limitations, we believe that our results have important implications for practice. Our study would allow liberal use of TVS which hitherto was assumed to be unacceptable by our conservative population. This would lead to better diagnosis and improvement in quality of care.

The strength of our study is the use of unselected population of women. The heterogeneous nature implies that the views of a wider segment of our clients were

captured. For those who decline the procedure for erroneous reasons, our findings of the reasons would help us counsel women appropriately to allay such fears. The other strength of our study is that we assessed the acceptability of three related modalities.

Future studies could determine the variables that are associated with acceptability, the cost benefit analysis and the psychological morbidity associated with trans-vaginal ultrasound scan. Now that TVS has been in use for over 3 years, opinions of those who have the experience would give better reflection about the acceptability, as willingness to accept a procedure and actual acceptance may differ. Same would apply to TLS and TRS.

Conclusion

The highest level of acceptance was for TLS, closely followed by TVS and the least was acceptability of TRS. Overall, the level of acceptance is high for all the modalities studied. The reasons for not accepting the studied modalities are concerns that could be allayed during counseling for the procedure as the reasons are groundless.

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