



PERCEPTION OF PATIENTS UNDERGOING HYSTEROSALPHINGOGRAPHY (HSG) IN KANO METROPOLIS, NIGERIA

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ABSTRACT

Hysterosalpingography (HSG) is a special radiological procedure that is used to assess the patency and the structure of the uterus and Fallopian tubes. The main role of HSG is the study of the Fallopian tubes in infertility. Discomfort, anxiety, and pain that might arise as a result of the procedure and may vary depending on the individual's perception. The patient's perception of a procedure plays an important role in its acceptance. The study aims at evaluating the perception of patients undergoing HSG examination in Kano metropolis. The study design was prospective and cross-sectional conducted in the Radiology Departments of four hospitals in the Kano metropolis from December 2018 to March 2019. A non-probability sampling method was employed in the study. An ethical clearance to conduct the study was obtained from the Human Research and Ethics Committee of the Kano State Ministry of Health. A structured questionnaire was used as an instrument for data collection. The questionnaire was validated by experienced colleagues and using pilot study the reliability of the measuring tool was tested and the Chronbach reliability coefficient was found to be 0.79. Two hundred and fifty six questionnaires were administered to the selected respondents. An informed consent was obtained from all the selected respondents. The obtained data were analyzed using SPSS version 21.0. Out of the 256 (100%) administered questionnaires, 237 (92.6%) were returned, and 226 (88.3%) were properly filled. In 189 (83.63%) respondents, infertility was found to be the indication for the procedure. 82 (36.3%) of the respondents believed the procedure was for diagnostic purpose, 78 (34.5%) for therapeutic and 28.3% for diagnostic and therapeutic. Patients undergoing HSG in Kano metropolis had a negative perception towards the procedure.

Keywords: Perception, Hysterosalpingography, Kano metropolis

INTRODUCTION

Hysterosalpingography (HSG) is a special radiological procedure that is used to assess the patency and the structure of the uterus and Fallopian tubes (Danfulani *et al.*, 2014). It visualizes the delineation of the uterine cavity and evaluates tubal patency radio-graphically by trans-cervical injection of contrast medium. The main role of HSG is the study of the Fallopian tubes in infertility. However, it can be used in other cases: pelvic pain, congenital or anatomic abnormalities, anomalies of the menstrual cycle, the study of abnormal menses (Chalazonitis *et al.*, 2009), women with recurrent spontaneous abortions and the postoperative evaluation of women who have had surgical tubal ligation or reversal of the ligation (Simpson *et al.*, 2006). Another recent indication for HSG is the need to prove tubaric occlusion after the insertion of trans-cervical sterilization micro-inserts (Lazarus *et al.*, 2012). It is one of the most common

special radiological investigations in Nigeria (Nwobi *et al.*, 2014, Ugwu *et al.*, 2009). Hysterosalpingography is an invasive procedure, generally regarded as uncomfortable and painful (Szymusik *et al.*, 2015, Costello *et al.*, 2002). Contraindications for the procedure include possible pregnancy, which can be avoided performing the HSG between the 5th to 12th days of the menstrual cycle. Other main contraindications are iodine allergy and active pelvic inflammation (Chalazonitis *et al.*, 2009 & Simpson *et al.*, 2006). Recent dilatation and curettage, severe cardiac or renal disease, uterine malignancy, endometrial carcinomas are also considered to be contraindications (Moi *et al.*, 2017). Some complications can occur with HSG; the two most common of which are bleeding and infection. The patient may experience light spotting after the procedure, usually lasting less than 24 hours.

The exclusive use of sterile instruments minimizes the risk of infection. However, some patients may experience severe pain, leading to premature termination of the procedure or, rarely, a vaso-vagal reaction. There is the potential for a reaction to the contrast material; however, such a reaction is very uncommon with the use of currently available low-osmolar nonionic contrast agents. There is also the potential for a systemic reaction to the contrast material if vascular intravasation occurs (William *et al.*, 2006). Despite continuous progress in diagnostic methods and the challenges associated with HSG, it is difficult to be replaced because of its reliability, simplicity, availability, and cost-efficiency (Szymusik *et al.*, 2015), Discomfort, anxiety, and pain that might arise as a result of the procedure may vary depending on the individual's perception. Perception deals with the human senses that generate signals from the environment through sight, hearing, touch, smell and taste. Szymusik *et al.*, (2015) found an abnormal result of HSG to be the main factor that increased pain during contrast instillation and spillage. Aubrey *et al.*, (2014) demonstrates that most women experience pain during a HSG procedure, most frequently described as cramping. Therefore, suggest continued basic scientific research as necessary to identify predictors of HSG-associated pain and measures that are effective in alleviating procedure-related discomfort. The patient's perception of a procedure plays an important role in its acceptance (Ugwu *et al.*, 2009). Despite being one of the most common special radiological procedures, little information is available regarding patient perception of the procedure (Aubrey *et al.*, 2014). There is a paucity of data concerning perception of patients undergoing HSG examination in Kano metropolis. The findings of the study will serve

as a guide to the radiologist/radiographers with a better understanding of patients' perception, HSG patient will be better counseled about the procedure in order to alleviate or reduced any negative expectations towards HSG examination. It will also increase patient cooperation and understanding prior, during and after the procedure. The study aims at evaluating the perception of patients undergoing HSG examination in Kano metropolis.

MATERIALS AND METHODS

The study design was prospective and cross-sectional conducted in the Radiology Departments of four hospitals in the Kano metropolis from December 2018 to March 2019. A non-probability sampling method was employed in the study. An ethical clearance to conduct the study was obtained from the Human Research and Ethics Committee of the Kano State Ministry of Health (MOH/OFF/797/T.I/1153). A structured questionnaire was used as an instrument for data collection. The questionnaire was validated by experienced colleagues and using pilot study the reliability of the measuring tool was tested and the Chronbach reliability coefficient was found to be 0.79. The questionnaire consists of two sections; section A, was the demographic information of the respondents, while section B, explored the perception of the respondents on HSG. Two hundred and fifty six questionnaires were administered to the selected respondents. An informed consent was obtained from all the selected respondents. The obtained data were analyzed using SPSS version 21.0.

RESULTS

Out of the 256 (100%) administered questionnaires, 237 (92.6%) were returned, and 226 (88.3%) were properly filled.

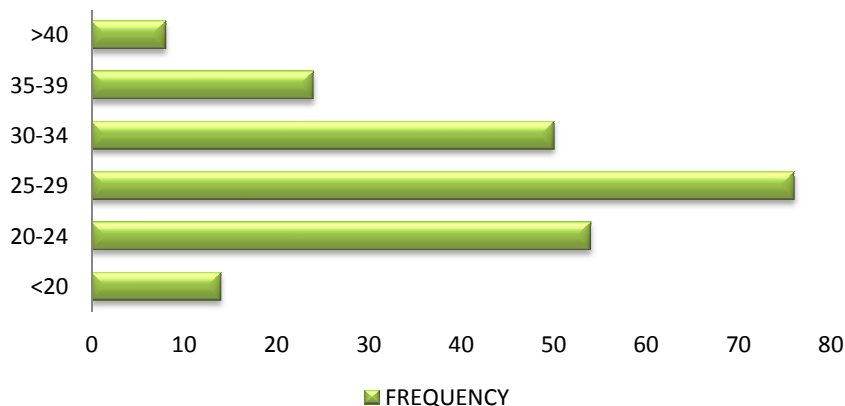


Figure 1: Age distribution of the respondents, 76(33.6%) of the respondents are within the age bracket of 25-29years followed by 20-24yrs 54(23.9%). 40years and above were the least among our respondents 8(3.5%) then 14(6.2%) having the age of less than 20years.

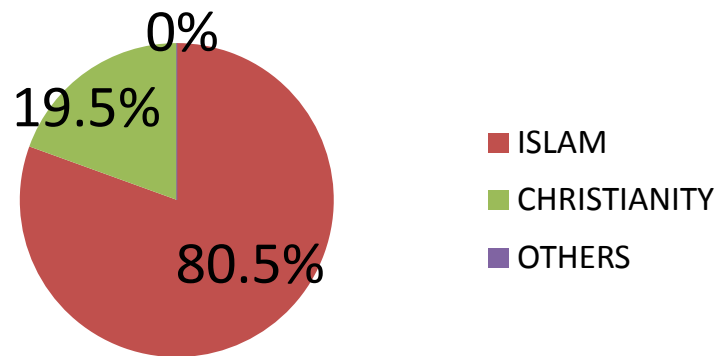


Figure 2: Distribution of respondents based on religion, 182(80.5%) of the respondents are Muslims and 44(19.5%) were Christians.

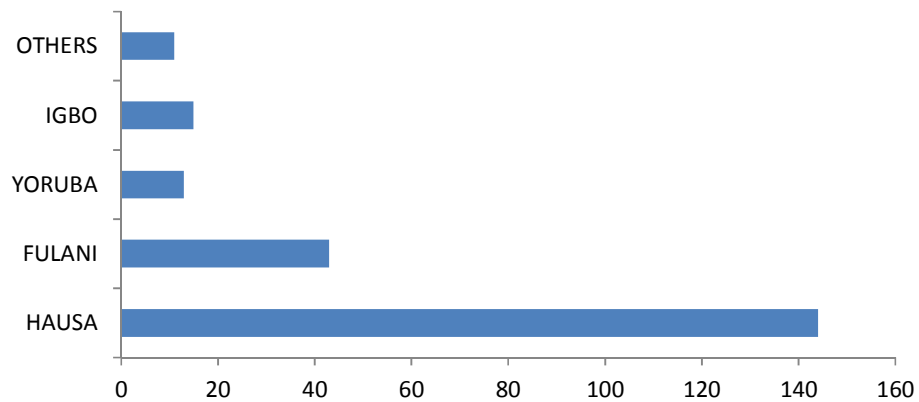


Figure 3: Shows tribe of the respondents, Hausa were the major tribe of the respondents 144(63.4%), followed by 43(19.0) Fulani, 15(6.6%) Igbos, 13(5.8%) Yoruba, and 11(4.9) other tribes

■ PRIMARY ■ SECONDARY

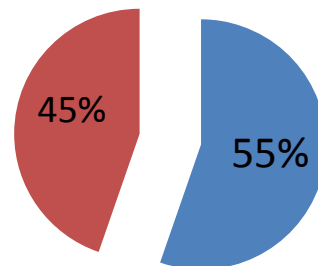


Figure 4: Shows respondent's infertility status, 125(55%) of the respondents had primary infertility, 101(45%) secondary infertility.

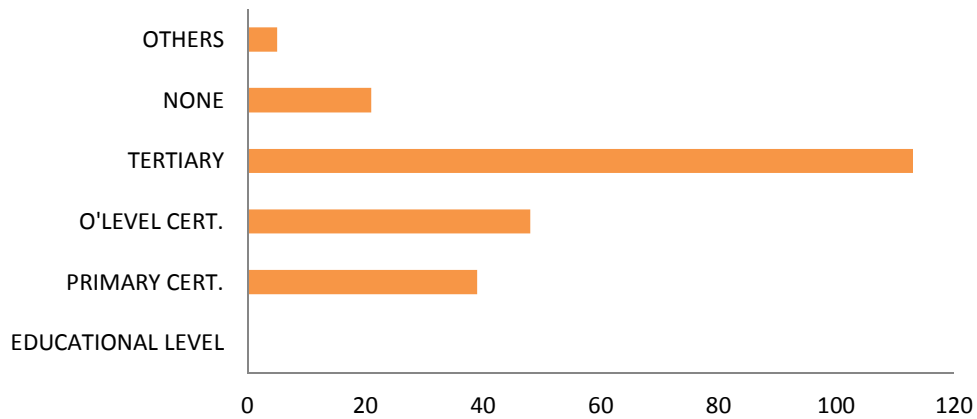


Figure 5: Educational qualification of the respondents, 113(50%) had attended tertiary institution, 48(21.1%) had O level certificate, 39(17.3%) had primary leaving certificate, while 21(9.3%) had no any educational certificate and 5(2.2%) had other certificates

Table 1: Respondents response to questions regarding their perception about Hysterosalpingography examination

Questions	Response	Frequency (%)
Q6. Why will you undergo this procedure?	Infertility	189 (83.63%)
	Fibroid	20 (8.85%)
	Post surgical follow-up	12 (5.31%)
	Others	00 (0%)
	Missing data	05 (2.21%)
Q7. What benefit do you expect from the procedure?	Diagnostics	82 (36.3%)
	Therapeutic	78 (34.5%)
	All of the above	64 (28.3%)
	Missing data	02 (0.9%)
Q8. Have you heard about this examination before?	Yes	92 (40.71%)
	No	133 (58.85%)
	Missing data	01 (0.44%)
Q9. Does someone explain the procedure to you?	Yes	89 (39.4%)
	No	136 (60.2%)
	Missing data	1 (0.4%)
Q10. Who do you think will perform the procedure for you?	Male	28 (12.4%)
	Female	114 (50.4%)
	Don't care	82 (36.3%)
	Missing data	02 (0.9%)
Q11. Are you afraid about the examination?	Yes	131 (57.9%)
	No	93 (41.2%)
	Missing data	02 (0.9%)
Q12. Are you expecting discomforts from the procedure?	Yes	122 (54%)
	No	95 (42%)
	Missing data	09 (4%)

Table 1: continue

Questions	Response	Frequency (%)
Q13. Are you expecting pain from the procedure? If yes answer question 14 but if no proceed	Yes	154 (68.1%)
	No	70 (31%)
	Missing data	02 (0.9%)
Q14. What is the severity of the pain are you expecting?	Mild	49 (21.7%)
	Moderate	64 (28.3%)
	Severe	39 (17.3%)
	Missing data	74 (32.7%)
Q15. Are you expecting bleeding from the procedure? If yes answer question 16 but if no proceed to question 17	Yes	74 (32.7%)
	No	148 (65.5%)
	Missing data	04 (1.8%)
Q16. What is the severity of the bleeding are you expecting?	Mild	44 (19.5%)
	Moderate	20 (8.8%)
	Severe	09 (4%)
	Missing data	153 (67.7%)
Q17. Do you expect to be traumatized from the procedure?	Yes	59 (26.1%)
	No	164 (72.6%)
	Missing data	03 (1.3%)
Q18. Do you feel the procedure is expensive?	Yes	78 (34.5%)
	No	84 (37.2%)
	Don't care	63 (27.9%)
	Missing data	01 (0.4%)

DISCUSSION

The findings of the current study show that 83.6% of the respondents had infertility as an indication for undergoing the procedure. The findings are similar to the findings of the studies reported by Danfulani *et al.*, (2014) and Abubakar *et al.*, (2016). The agreement between the findings of the current study and previous published articles might be because the studies were conducted in the same region of the country. The current study shows that 36.3% of the respondents believed the procedure was for diagnostic, 34.5% believed was for therapeutic purpose and 28.3% believed was for both diagnostic and therapeutic purposes. This is contrary to the findings of the study conducted by Tyrrell *et al.*, (1993) in United Kingdom showed that 95% of the respondents knew why the examination was performed. However, a study conducted by Hussain *et al.*, (2007) reported that with the Explanation of the procedure to the patients will certainly influence their perception, therefore detail explanation of the procedure, including how the procedure is performed, benefits and possible complication should be well explained to the patients.

application of hydrostatic pressure during HSG technique, there was a 24% rate of successful conception in women within 3–6 months after the procedure. The majority of the respondents had a wrong perception of the main purpose of performing the HSG procedure, and need to be educated before the procedure that the main purpose is for diagnostic not therapeutic. The findings of the current study show that 58.9% of respondents never had of the procedure before, and since the majority had infertility as an indication of the procedure, might be linked to the wrong perception of the main purpose of the procedure.

The findings of the current study also show that the procedure was not explained to the 60.2% of the respondents. This is in disagreement with the study conducted by Tyrrell *et al.*, (1993) which showed 53% of the respondents had received an explanation of the procedure prior to their arrival in the X-ray Department. According to our study, 50.4% of the respondents expected females to perform the procedures; however, through observation and experience this is not obtainable in our locality. The team usually consists of both males and females. The current study shows that 57.9% of

the respondents were afraid of undergoing the procedure; this might be linked to the lack of detail explanation of the procedures or false information received from other people. Giving the detail explanation of the procedure to the patient and proper counseling will certainly change this perception. The findings of the current study show that 54% of the respondents were expecting discomfort during the procedure, whereas 68.1% of the respondents were expecting pains during the procedure. Expecting a pain usually affects the level of cooperation of the patient before and during the procedure, which will affect the timely performance of the procedure. Explaining to the patients that pain relievers and antispasmodic will be administered to reduced or prevent the perceived pain may calm down the anxiety associated with pain. Furthermore, the findings of the study show that 21.7% of the respondents expected mild pain, 28.3% moderate pain and 17.3% expected severe pain.

The severity of the expected pain may determines the level of anxiety developed by a patient undergoing procedure which may in turn affects the level of cooperation received from the patient during the procedure. Our findings also shows only 32.7% of the respondents expected bleed from the procedure, 19.5% of the respondents expected mild bleed, 8.8% moderate bleed and 4% expected severe bleed.

REFERENCES

- Abubakar A., Ali Y.M., Nwobi I.C., Nkubli B.F., Miftaudeen M.N., Njiti M.M., Luntsi G., Moi A.S., Kurama M.B., Gunda N.M. (2016). Common hysterosalpingography protocols and findings among infertile women in a tertiary healthcare institution in northeast, Nigeria, *Journal of Dental and Medical Sciences*; 15(7): 124-127
- Aubrey P., Alexander M.Q., Karl R.H., Blake P., Heather B., and La Tasha B.C. (2014). Predictors of pain associated with hysterosalpingography (HSG): A prospective cohort study, *Austin Journal of Women's Health*; 1(2): 1-4
- Chalazonitis A., Tzovara I., Laspas F., Porfyridis P., and Ptohis N.T.G. (2009). Hysterosalpingography: Technique and applications. *Curr Probl Diagn Radiol*; 38 (5):199-205.
- Costello M.F., Stephen H., Stephen S., Najwa Saif, M.D., Michael B., and Abie E. (2002). Transcervical intrauterine topical local anesthetic at hysterosalpingography: a prospective, randomized, double-blind, placebo-
- controlled trial, *American Society for Reproductive Medicine*; 78 (5): 1116–1122
- Danfulani M,, Mohammed M.S., Ahmed S.S., Haruna YG. (2014). Hysterosalpingographic findings in women with infertility in Sokoto North Western Nigeria. *African Journal of Medical and Health Sciences*; 13 (1): 19-23.
- Eduwem D. U., Akintomide A. O., Basse D. E., and Ekott M. I. (2016). Hysterosalpingographic patterns and relevance in the management of infertility in a Nigerian tertiary health Institution. *Asian Journal of Medical Sciences*; 7 (5): 70-74
- Hussain M., Al Damegh S., and Tabish A. (2007). Therapeutic efficacy of hysterosalpingography with special reference to application of hydrostatic pressure during the procedure. *International Journal of Health Science*; 1 (2): 223–227.

Procedure associated with bleeding may cause fear and anxiety more especially if the associated bleed is severe.

We also found that 72.6% of the respondents were not expecting trauma from the procedure, however, 26.1% of the respondents were expecting trauma from the procedure. Procedures associated with trauma as a complication causes fear and anxiety among patients which will certainly affect the success of the performance of the procedure. Furthermore, the findings of the current study show that 34.5% of the respondents indicated high cost of the performance of the procedure, 37.2% were satisfied with the cost. The cost of the performance of a procedure is another important factor to consider in patient's perception more especially in a low socioeconomic society as in the case of the current study. The findings of the current are contrary to the findings of the study conducted by Ugwu *at al.*, (2009) that reported good perception among patients undergoing special radiological investigations.

CONCLUSION

Patients undergoing hysterosalpingography (HSG) in Kano metropolis had a negative perception towards the procedure. A proper counseling and awareness need to be given to the patients undergoing the procedure.

- Lazarus E. Ana P. L., Susan C., and Rebecca H. A. (2012). Necessity of Hysterosalpingography after Essure Micro insert Placement for Contraception. *American Journal of Roengenology*, 198 (6): 1460-1463.
- Moi A.S., Etim U.F., Obotiba A.D., Abubakar G.M., Luntsi G., Nkubli B.F., Nwobi I.C., and Aniekop U.P. (2017). Radiographic findings in Hysterosalpingography (HSG) of women attending infertility clinic at University of Uyo Teaching Hospital, Akwa-Ibom state, *Scholarly Journal of Medicine*, 5(2): 21-25
- Nwobi I. C., Luntsi G., Ahmadu M. S., Nkubli F. B., Kawu H. D., Dauda F., Moi A. S. Abubakar G. M., & Tahir M. B., (2014). The Assessment of Patients' Perception and Satisfaction of Radiology Waiting Time in University of Maiduguri Teaching Hospital. *Kanem Journal of Medical Sciences*; 8 (1): 19-26
- Omolola M.A., & Babatunde B.O. (2014). Do Abnormal Findings on Hystero-Salpingographic Examination Correlate with Intensity of Procedure Associated Pain?. *African Journal Reproductive Health*; 18 (2): 147-151.
- William L.S., Jr M.D., Laura G.B., Jolinda M.M.D. (2006). Hysterosalpingography: A Reemerging Study. *RadioGraphic*, 26 (2): 419-31.
- Szymusik I., Barbara G., Piotr M., Bartosz K., and Mirosław W. (2015). Factors Influencing the Severity of Pain During Hysterosalpingography. *International Journal of Gynecology and Obstetrics*; 129 (2): 118-122
- Tyrrell P.N.M., Mchugo J. M., Hale M. (1993). Patients' perception of the hysterosalpingogram: The initial stages of the audit cycle. *The British Journal of Radiology*; 66 (782): 103-107
- Ugwu A.C., Samuel L. S., Felix E., (2009). Patients' Perception of Care During Special Radiological Examinations. *African Journal of Primary Health Care & Family Medicine*; 1(1): 100-102