

## SATISFACTION WITH WAITING TIME AMONG ANTENATAL WOMEN ATTENDING THE ANTENATAL CLINICS OF SOUTH EAST NIGERIA.

Ofoegbu CC<sup>1</sup>, Emelumadu OF<sup>1</sup>, Ifeadike CC<sup>1</sup> and Onyemachi PEN<sup>2</sup>, Alyazidi FSF<sup>3</sup>, Analo VC<sup>4</sup>, Onyeyili AN<sup>5</sup>

1. Department of Community Medicine, Nnamdi Azikiwe University Teaching Hospital Nnewi, Anambra State Nigeria

2. Department of Community Medicine, Abia state University Teaching Hospital Aba, Abia State, Nigeria

3. Department of Public Health, College of Health, Al Lith Saudi Arabia

4. Department of General Medicine, North Cumbria University NHS trust United Kingdom

5. Nursing Services Department, Nnamdi Azikiwe University Teaching Hospital Nnewi, Anambra State.

### ABSTRACT

**Background:** Patient satisfaction is a useful measure to provide a direct indicator of quality in health care. Assessing patient perspectives gives them a voice, which can make public health services more responsive to people's needs and expectation.

**Objective:** To evaluate and compare the clients' satisfaction with waiting time among pregnant women in public and private health facilities in south east Nigeria.

**Study Design:** A comparative cross sectional study was carried out.

**Methodology:** Using pretested interviewer administered questionnaire, information on clients' satisfaction was obtained from 500 women attending antenatal care clinic in south east Nigeria.

**Results:** The mean ages of the public-teaching hospital respondents was  $29.6 \pm 4.0$  and is slightly higher compared with that of private-mission hospitals respondents which was  $29.5 \pm 4.6$ . Satisfaction with waiting time at the antenatal clinics was generally low as only 59.8% of the respondents reported satisfied. Satisfaction was however higher among the public-teaching hospital respondents (67.4%) than the private-mission hospital respondents (46.4%) and this is statistically significant.

**Conclusion:** There is low satisfaction with waiting time among antenatal mothers utilizing hospital services and dissatisfaction was more in private than public hospital.

**Keywords:** Antenatal care, Waiting time, Satisfaction, Public-teaching, Private-mission, Hospital, Anambra state

## **INTRODUCTION**

Patient satisfaction affects clinical outcomes and patient retention. Satisfaction is timely efficient and patient-centered delivery of quality health care <sup>1</sup>. It is an established fact that client satisfaction influences whether a client seeks and uses medical advice, complies with treatment and maintains a continuing relationship with practitioners <sup>2</sup>. Some patients may place their satisfaction more on technical competence whereas others, on fulfillment of personal needs, comfort dignity and supportive services. Studies show reversed relationship between waiting time and patient satisfaction and this is a major concern for hospital administrators, policy makers and researchers because it is a measure of organizational efficiency <sup>3,4</sup>. Waiting time as well as service time is the major factors that affect patient and consumer satisfaction <sup>4,5</sup>. Patients are aware that they should wait for services at the health facilities; however, there is no known acceptable 'waiting' time. Previous researches showed that patients are less likely to be dissatisfied if their waiting time is between 30 to 45 minutes <sup>6,7</sup>. A study of outpatient waiting

time done in 21 hospitals in Malaysia found that the average waiting time to see the doctor was 60 minutes <sup>8</sup>.

Due to incessant strike action in government hospitals in Nigeria, most pregnant women especially those with complicated pregnancies have resorted to registering in private hospitals in order to forestall strike action occurring in their pregnancy which may lead to adverse pregnancy outcome. Recently in Anambra state, the government equipped the mission hospitals to provide specialized care as obtainable in the teaching hospitals. So it is our desire in this research to explore and compare the teaching hospital and these specialized mission hospitals to ascertain the quality of care of these hospitals in terms of waiting time and to judge to what extent the aim of the government can be achieved.

Previous researches compared satisfaction with public and private hospitals of differing size and functionality <sup>9, 10, 11</sup>, but this study assessed and compared satisfaction with waiting time in public and private hospitals with comparable in size, patient load and functionality

This survey could provide means for clients to express their concern with the antenatal services and also evidence based information to guide management decision in the health facilities

## **METHODOLOGY**

**Study Design:** This was a comparative cross sectional study on **SATISFACTION WITH WAITING TIME AMONG ANTENATAL WOMEN ATTENDING THE ANTENATAL CLINICS OF SOUTH EAST NIGERIA.**

**Study Sites:** The study sites included two teaching hospitals and two mission hospitals. Mission hospitals are hospitals owned by Christian church organization (Roman Catholic Church, Anglican Church, e.t.c). They are

a common health provider in South East Nigeria. The Mission hospitals are departmentalized, with specialist clinics and form referral base for smaller hospitals like the teaching hospitals that are government owned tertiary health care providers

**Sample Size and Selection:**The minimum sample size for this study was based on 5% significance level and a power of 80%.

$$\text{Formula; } n = \frac{[2(z\alpha+z\beta)^2p(1-p)]^{12}}{d^2}$$

$p$  = arithmetic average of two proportions which is  $(P1 + P2) / 2$

$p1$  = proportion of clients satisfied with antenatal care in a federal public-teaching hospital = 0.943<sup>13</sup>

$p2$  = proportion of clients satisfied with antenatal care in first level health facilities = 0.814<sup>14</sup>

$$P = (0.943 + 0.814) / 2 = 0.87855$$

$d$  = arithmetic difference between the two population =  $P2 - P1$

Sample size was determined as 98. Using an anticipated non response rate of 10 %<sup>( 15)</sup>, the sample size was adjusted to 108 for one proportion and 216 for the study.

In order to increase the power of the study, avoid cluster effect and increase study external validity, the sample size used was 500 pregnant women. The respondents chosen from each facility were determined using a proportionate allocation by size of the facility.

**The Population Patient Surveys:** The study population comprised 500 pregnant women attending antenatal clinics of public-teaching and private-mission hospitals in Anambra state.

**Sampling Technique:** The sampling technique used was multi-stage sampling<sup>16</sup>. The first stage, simple random sampling was used to select the two teaching hospitals and two mission hospitals from the list of mission hospitals that met the criteria for comparability with teaching hospital. The second stage, systematic sampling technique was used to select participants. Participants were selected using a sampling interval of two at exit point. Participants who denied consent or those on booking visit were excluded.

**Study Instruments:** Pre-tested semi-structured interviewer administered questionnaire, key informants interview guide and a focus group discussion guide were used to obtain data. The questionnaire was designed by the United States Departments of Health and Human Services, for patient satisfaction surveys, adapted and modified for this study<sup>17</sup>. The study instruments were translated into Igbo and back translated to English to ensure validity and reliability. The questionnaire was in two sections; first section for socio-demographic variables and second section for satisfaction with waiting time. Pre-testing was done in selected teaching and mission hospitals other than the study sites.

**Data analysis:** Data was analyzed using statistical packages for social sciences (SPSS) version 22. Tests statistics for comparison of proportion was Chi square. Fisher's exact score was used where five percent of the cells were less than five. T-tests were used to compare the mean ages of the respondents. Results were presented in percentages and means.

**Ethical Considerations:** Ethical approval was obtained from Ethical Committee of the Nnamdi Azikiwe University Teaching Hospital Ethics Committee (NAUTHEC). Written approval was obtained from the management of the hospitals used.

**Confidentiality of Data Collected from Respondents:** Serial numbers were used to identify respondents and the research assistants that interviewed them. The completed questionnaires and tape recordings were kept in a place accessible only to the researchers. The data was stored in a password protected personal computer of the

researcher. The research assistants were also trained not to disclose the information divulged by the respondents during the interview. The participants were assured that their responses will not be reported individually but as part of an overall study and that they would face no consequence for the responses they provided. Details of confidentiality were captured in the written informed consent obtained from participants.

**Study limitation:**

- Quantitative assessment of actual waiting time at different service point was not practicable as service time and waiting time could not be finely delineated, and protocol did not include patient time tracking.
- This research used only antenatal mothers because the aim was to assess waiting time between public and private hospitals and clients assessing the same services were used to reduce confounding. .

**RESULTS**

TABLE 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENT IN PUBLIC-TEACHING AND PRIVATE-MISSION HOSPITAL ANTENATAL CLINICS IN ANAMBRA STATE:

VARIABLES	PUBLIC-TEACHING HOSPITAL (N=321)	PRIVATE-MISSION HOSPITAL (N=179)	TOTAL (N=500) 100 (%)	TEST STATISTIC $\chi^2$	P-VALUE
<b>Age (years)</b>					
15- 24	58(18.1)	62(34.6)	120(24)		
25-34	221(68.8)	85(47.5)	306(61.2)		
Above 35	41(12.8)	32(17.9)	74(14.8)		

Mean age	29.6	29.5		t=0.152	0.879
Standard deviation	4.0	4.6			
<b>Marital status</b>				9.021**	
Never married	6(2.0)	-	6(1.2)		
Currently married	315(98.0)	179(100.0)	494(98.8)		0.132
<b>Educational level:</b>					
Secondary	178(55.5)	60(33%)	3(0.6)	8.223*	0.144
Post secondary education	57(17.8)	38(21.3)	95(19)		
Bachelor	72(22.2)	72(40.0)	144(28.8)		
PhD, Masters	14(4.4)	9(5.3)	23(4.6)		
<b>Denomination</b>					
Catholic	178(55.6)	145(81.3)	323(64.6)	11.080**	<b>0.004</b>
Anglican	93(28.9)	29(16.0)	122(24.4)		
Pentecost	50(15.6)	5(2.7)	55(11.0)		

**Tribe**

Igbo	307(95.6%)	172(96.3)	179(95.8)	1.698**	0.428
Yoruba	6(1.8)	3(1.7)	9(1.8)		
Hausa	0(-)	2(1.0)	2(0.4)		
Others [Igala, Efik]	8(2.6)	2(1.0)	10(2.0)		

**Occupation**

Civil servant	107(33.4)	43(24.0)	150(30.0)	11.891*	<b>0.018</b>
Business owner	106(33.2)	24(13.3)	130(26.0)		
Self employed	29(8.9)	19(10.7)	48(9.6)		
Student	50(15.6)	48(26.7)	98(19.6)		
Unemployed	29 (8.9)	45 (25.3)	74(14.8)		

---

**\*\* = Fishers Exact Test Statistically Significant**

**\* = Chi-square test Statistically Significant**

The socio-demographic characteristics of respondents in public-teaching and private-mission hospitals are shown in table 1. Data was obtained from 500 respondents, consisting of three hundred and twenty one public-teaching hospital clients and one hundred and seventy nine private-mission hospital clients. The mean ages of the public-teaching hospital respondents was  $29.6 \pm 4.0$  and is slightly higher compared with that of private-mission hospitals respondents which was  $29.5 \pm 4.6$ . All the respondents from Private-mission hospitals were all currently married compared to the respondents from public-teaching hospitals where 2% of the

respondents were never married. All the respondents had formal education, but a higher proportion of the private-mission hospitals respondents,(40%) had Bachelor degree/HND as the highest educational qualification attained compared with the public-teaching hospitals respondents where Senior Secondary/Grade II Public-teaching Certificate was the highest educational qualification obtained by majority of the respondents (51.1%). However, this is not statistically significant. There is a statistically significant difference in the denomination of the respondents, (P=0.004) as the percentage of respondents were higher in private-mission hospitals (81.3%) compared to public-teaching hospitals (55.5%). Also, the percentage of Pentecostal respondents was higher in public-teaching hospitals (15.6%) than in private-mission hospitals (2.7%). A higher proportion of respondents from both populations were Igbo ethnicity (95.8%) with the rest being Yoruba (1.8%), Hausa (0.4%), Igala or Efik (2.0%). The highest proportion of the respondents from public-teaching hospitals are civil servants (33.4%) followed by business owners (33.2%), compared to the respondents from private-mission hospitals where the highest proportion of respondents were students (26.7%) followed by unemployed women (25.3%).

TABLE 2: CLIENTS' PERCEPTION OF SATISFACTION WITH WAITING TIME IN PUBLIC-TEACHING AND PRIVATE-MISSION HOSPITAL ANTENATAL CLINICS IN ANAMBRA STATE:

VARIABLES	PUBLIC-TEACHING HOSPITAL (N=321) n (%)	PRIVATE-MISSION HOSPITAL (N=179) n (%)	TOTAL (N=500) n (%)	TEST STATISTIC $\chi^2$	P-VALUE
<b>Waiting time in getting registered and obtaining Card</b>					

Strongly satisfied	50(15.6)	14(8.0)	64(12.8)	16.269	<b>0.002*</b>
Satisfied	178(55.5)	48(26.7)	226(45.2)		
Somewhat satisfied	36(11.1)	31(17.3)	67(13.4)		
Indifferent	0(-)	12(6.7)	12(2.4)		
Dissatisfied	57(17.8)	74(41.3)	131(26.2)		

**Waiting time before seeing**

**a doctor**

Strongly satisfied	50(15.6)	19(10.7)	69(13.8)	8.137	0.085
Satisfied	100(31.1)	48(26.7)	148(29.6)		
Somewhat satisfied	64(20.0)	12(6.7)	76(15.2)		
Indifferent	21(6.6)	24(13.3)	45(9.0)		
Dissatisfied	86(26.7)	76(42.6)	162(32.4)		

**Waiting time for tests to**

**be done**

Strongly satisfied	50(15.6)	21(12.0)	71(14.2)	8.180	0.086
Satisfied	81(25.1)	64(36.0)	145(29.0)		
Somewhat satisfied	26(8.2)	17(9.3)	43(8.6)		
Indifferent	7(2.2)	24(13.3)	31(6.2)		

Dissatisfied	157(48.9)	53(29.4)	210(42.0)
--------------	-----------	----------	-----------

**Waiting time for test results**

Strongly satisfied	64(20.0)	21(12.0)	85(17.0)	15.973	<b>0.002*</b>
--------------------	----------	----------	----------	--------	---------------

Satisfied	128(40.0)	74(41.3)	202(40.4)
-----------	-----------	----------	-----------

Somewhat satisfied	43(13.3)	3(1.4)	46(9.2)
--------------------	----------	--------	---------

Indifferent	0(-)	31(17.3)	31(6.2)
-------------	------	----------	---------

Dissatisfied	86(26.7)	50(28.0)	136(27.2)
--------------	----------	----------	-----------

**Waiting time to collect drugs  
from the pharmacy**

Strongly satisfied	71(22.2)	9(5.3)	80(16.0)	17.795**	<b>0.001**</b>
Satisfied	93(28.9)	29(16.0)	122(24.4)		
Somewhat satisfied	29(8.9)	9(5.3)	38(7.6)		
Indifferent	0(-)	24(13.3)	24(4.8)		
Dissatisfied	128(40.0)	108(60.1)	236(47.2)		

**Waiting time to pay for services  
or drugs**

Strongly satisfied	47(14.6)	19(10.6)	66(13.2)	43.512	<b>0.000*</b>
Satisfied	152 (47.4)	45(25.0)	197(39.4)		
Somewhat satisfied	35(11.0)	14 (7.8)	49(9.8)		
Indifferent	18(5.6)	26 (14.5)	44(8.8)		
Dissatisfied	69(21.5)	75(41.9)	144(28.8)		

---

**\*\* = Fishers Exact Test Statistically Significant**

**\* = Chi-square test Statistically Significant**

Sixty four (12.8%) respondents from public-teaching and private-mission hospitals were strongly satisfied with waiting time in getting registered and obtaining card, while 226(45.2%) were satisfied and 67(13.4%) were somewhat satisfied. Dissatisfaction with waiting time in getting

registered and obtaining card was shown by 131 (26.2%) respondents. There is a statistically significant difference ( $\chi^2 = 16.269$ ,  $P = 0.002$ ) with waiting time in getting registered and obtaining card in both populations. More respondents from private-mission hospitals (41.3%) showed dissatisfaction compared to public-teaching hospital respondents (17.8%).

Satisfaction with waiting time before seeing a doctor and waiting time for tests to be done was shown by 58.6% and 51.8% of the clients respectively with no significant difference comparing public-teaching and private-mission hospitals. Majority of the women from public-teaching hospitals (66.7%) were satisfied with waiting time before seeing a doctor and 48.9% were satisfied with waiting time for tests to be done while in private-mission hospitals, 44.1% and 57.3% were satisfied respectively.

Public-teaching hospitals respondents expressed more satisfaction with waiting time for test results (73.3%) and waiting time to collect drugs from the pharmacy (60%) compared with private-mission hospitals respondents (54.7% and 26.6%) with a significant difference of  $P = 0.002$  and  $P = 0.001$  respectively. A total of 66.6% were satisfied with waiting time for test results and 48% were satisfied with waiting time to collect drugs from the pharmacy.

Satisfaction with waiting time to pay for services or drugs from this table was reported by 62.5% of the respondents. There is a statistically significant difference in satisfaction with waiting time to pay for services and drugs ( $\chi^2 = 43.512$ ,  $P = 0.000$ ) in public-teaching hospitals (strongly satisfied 14.6%, satisfied 47.4% and somewhat satisfied 11.0%) and private-mission hospitals (strongly satisfied 10.6%, satisfied 25.0% and somewhat satisfied 7.8%).

TABLE 3: INFLUENCE OF SOCIODEMOGRAPHIC VARIABLES ON WAITING TIME FOR ANTENATAL CARE SERVICES IN PUBLIC-TEACHING AND PRIVATE-MISSION HOSPITALS ANTENATAL CLINICS IN ANAMBARA STATE

<b>Variables</b>	<b>Yes</b>	<b>No</b>	<b>Chi-square</b>	<b>P-value</b>
<b>AGE IN</b>				
<b>CATEGORIES</b>				
<b>15-24</b>	68	52	9.190	0.163
<b>25-34</b>	20	99		
<b>&gt;35</b>	52	22		
<b>EDUCATIONAL</b>				
<b>LEVEL</b>				
<b>Primary</b>	3	1	4.441	0.925
<b>Junior Secondary</b>	18	10		
<b>Senior Secondary/ Grade II</b>	121	66		
<b>OND,NCE, Technical</b>	66	31		
<b>Bachelor/HND</b>	106	54		
<b>PhD, Masters</b>	14	10		
<b>DENOMINATION</b>				
<b>Catholic</b>	224	117	0.988	0.912
<b>Anglican</b>	76	38		
<b>Pentecostal</b>	32	13		
<b>OCCUPATION</b>				
<b>Civil servant</b>	99	46	10.633	0.223

<b>Business owner</b>	75	41
<b>Self-employed</b>	33	18
<b>Student</b>	64	40
<b>Unemployed</b>	60	24

---

Clients' dissatisfaction with long waiting time had no significant relationship with age, educational level, denomination and occupation of respondents.

## **DISCUSSION**

Antenatal care remains an essential part of safe motherhood and one of the interventions that can considerably reduce maternal morbidity and mortality when properly conducted and improve maternal and newborn health <sup>18, 19</sup>. Patients' satisfaction is directly related with utilization of health services and service satisfaction surveys help us to assess the responsiveness of the health system. The aim of this study was to assess the pregnant women satisfaction with waiting time during antenatal clinic. For the purpose of this study, waiting time during antenatal services was split into six different categories: waiting time in getting registered and obtaining card, waiting time before seeing a doctor, waiting time for tests to be done, waiting time to collect test results, waiting time to collect drugs from pharmacy and waiting time to pay for services or drugs.

Our study showed that more respondents from the public-teaching hospitals (67.4%) were satisfied with waiting time compared to 46.4% from the private-mission hospitals. This is similar to the result obtained from a cross-sectional study done in Karachi in 2009 by Jawaid M et al where higher proportion of the respondents from the public hospitals were satisfied with the hospital services than the private hospital respondents (68% versus 46%) <sup>20</sup>. The average waiting

time in our study was estimated to be 120 minutes at the mission hospitals and 90 minutes at the teaching hospitals,

More respondents from the public-teaching hospital (82.2%) were satisfied with time spent in getting registered and obtaining card than the private-mission hospital respondents (52%) and this is statistically significant( $P=0.002$ ). This could be as a result of lack of staffing at the private-mission hospital which is a known contributor to lengthy waiting time in hospitals. From both public-teaching and private-mission hospitals, 71.4% were satisfied while 26.2% showed dissatisfaction..This could be due to long queues caused by the registration center being manned by one staff.

On waiting time before seeing a doctor, 58.6% of our respondents were satisfied. Patients who were satisfied with waiting time for test to be done and to get test results were 51.8% and 66.6% respectively.Waiting time to collect drugs from pharmacy had the highest rate of dissatisfaction as only 48% of the respondents were satisfied with the time they waited to collect drugs from pharmacy.This contradicts with the result obtained in Kano <sup>21</sup> where delay before releasing results of investigation was one of the most frequent complaints(43.8%) for being dissatisfied with waiting time. Majority of patients from private-mission hospital (60%) were dissatisfied than the public-teaching hospital respondents (40%) and this was statistically significant,  $P<0.001$ . Also, only 62.4% of the study population was satisfied with the time they waited to pay for services or drugs with more dissatisfaction coming from the private-mission hospital respondents (41.9%;  $P=0.000$ ). The perceived long waiting time from this study is related to the realities of developing countries especially in Nigeria, where patients will have to wait longer before seeing a healthcare provider due to imbalance in the doctor-patient ratio as only a few doctors and other health care providers are available to attend to patients<sup>22</sup> .

Our study indicated that 40.0% of clients were dissatisfied with time waited to receive antenatal services. This finding is higher compared with the study conducted in Jimma Hospital which showed 37.2% according to Fekadu A et al <sup>23</sup>. Likewise, the dissatisfaction level with the overall waiting time to receive services in a Nigeria Public Hospital was rated 48% <sup>24</sup>, and a study conducted in India showed 35.4% dissatisfaction <sup>25</sup>. Also, from the studies done in Osun state<sup>26</sup> and Ibadan<sup>27</sup> showed that the most common reason for dissatisfaction with quality of care as reported by 66.5% and 48% of the respondents was waiting time. This study also agrees with a study in India where long waiting time was the chief cause of dissatisfaction (97.6%) with service utilized at the outpatient department <sup>28</sup>. This higher level of dissatisfaction rate with overall waiting time could be attributed to the increased number of patients in the health care services, less proportional number of health care providers to clients and lack of awareness of participants to understanding that some health care services require time to provide quality of care. One can infer from the result above that, as private hospitals grow in size and sophistication, they may be faced with similar challenges as long waiting time or even more challenges, as the big public hospitals like a teaching hospital.

## CONCLUSION

Satisfaction with waiting time in antenatal clinics in south east Nigeria is low. This comparative study showed more satisfaction with waiting time in public teaching hospitals than in private mission hospitals. The major area for dissatisfaction with waiting time during antenatal clinic is on waiting time to collect drugs from pharmacy and on time spent for tests to be done. Inference can be made that as private hospital grow in size and functionality to match the public

hospital, that widely held view of higher satisfaction with waiting time in private hospital will be challenged as evident in the findings of this research.

## **AUTHOR STATEMENT**

**Ethical approval:** This was sought and obtained from the NnamdiAzikiwe University Teaching Hospital ethical review board.

**Funding:** No funding was sought and none obtained.

**Competing Interest:** There are no competing interests in this study

## **REFERENCES**

1. Prakash B. Patient Satisfaction. *J CutanAesthetSurg* 2010;3:151-155.
2. InegbeneborAU . Elements of service operations. (1<sup>st</sup>edt.). The Fundamentals of Entrepreneurship. Lagos, Malthouse Press 2006; 164-174.
3. Hassali MA, Alrasheedy AA, AbRazak BA et al. Assessment of General Public Satisfaction with Public Health Care Services in Kedah, Malaysia. *AMJ* 2014;7(1): 35-44
4. Kujala J, Lillrang P, Kronstrom V. Time-based Management of Patient Processes. *J Health Organ Manag*2006;(6):512-514.
5. Lexshimi RG, Zaleha MI, Shamsul AS et al. Patient Satisfaction on Waiting Time and Duration of Consultation of Orthopaedic Clinic, University Kebangsaan Malaysia Medical centre. *Med & Health* 2009;4(1):35-46

6. Mckinnon K, Crofts PD, Rhiannon E. The Outpatient Experience: Results of a Patient Feedback Survey. *Int J Health Care QualAssur Inc Leadersh Health Serv.* 2006; 11(5): 156-160
7. Bielen F, Demoulin N. Waiting Time Influence on the Satisfaction. Loyalty Relationship in Services. *ManagServQual: An Int. J* 2007;17 (2): 174-193.
8. Pillay D, Ghazali RJ, Manaf NH. Hospital Waiting Time: The Forgotten Premise of Health Care Delivery. *Health Care QualAssur* 2011;24(7):506-522.
9. Okumu C, Oyugi B. Clients' satisfaction with quality of childbirth services: A comparative study between public and private facilities in Limuru Sub-County, Kiambu, Kenya. *PLoS One.* 2018;13(3):e0193593.
10. Assefa F, Mosse A. Assessment of Clients' satisfaction with health service deliveries at Jimma university specialized hospital. *Ethiopian journal of health sciences* 2011; 21: 101–110.
11. Hutchinson PL, Do M, Agha S. Measuring client satisfaction and the quality of family planning services: a comparative analysis of public and private health facilities in Tanzania, Kenya and Ghana. *BMC health services research* 2011; 11: 1.
12. James F, David L, Joann G, Dorothea M: *Epidemiology biostatistics and preventive medicine.* Sanders Elsevier, 2007; 202
13. Uzochukwu BS, Onwujekwe OE, Akpala CO. Community Satisfaction with the Quality of Maternal and Child Health Services in South East, Nigeria. *East African Medical Journal* 2004; 81(6) 293-299.

14. Oladapo OT, Iyaniwura CA, Sule-odu AO. Quality of antenatal services at the primary care level in Southwest Nigeria. *African Journal of Reproductive Health* 2008; 12 (13): 71-92
15. Marama T, Bayu H, Merga M, Binu W. Patient Satisfaction and Associated Factors Among Clients Admitted to Obstetrics and Gynecology Wards of Public Hospitals in Mekelle Town, Ethiopia: An Institution –Based Cross-Sectional Study. *Journal of Obstetrics and Gynecology International* 2018. <https://doi.org/10.1155/2018/2475059>. (Accessed 03/12/2018).
16. Onwasigwe C. Principles and methods of epidemiology. El 'Demark publishers, Uwani Enugu, 2004. 2<sup>nd</sup> edt. (5): 123-157
17. United States Department of Health and Human Services; Patient Satisfaction Survey Form. <http://www.hhs.gov>. (Accessed 03/12/2018).
18. Cohen J. Patient satisfaction with prenatal care provider and the risk of cesarean delivery. *Am J ObstetGynecol* 2005; 192: 2029–2034
19. Turan J, Bulut A, Nalbant H, Akalin A. The quality of Hospital based Antenatal care in Istanbul. *Stud FamPlann* 2006; 37(1): 49-60.
20. Jawaid M, Ahmed N, Alam SN, Rizvi BH, Razzak HA. Patients Experiences and Satisfaction from Surgical Out Patient Department of a Tertiary care teaching hospital. *Pak J Med Sci*. 2009;25(3):439-442.
21. Iliyasu Z, Abubakar IS, Abubakar S, Lawan UM, Gajida AU: Patients' satisfaction with services obtained from Aminu Kano Public-teaching Hospital, Northern Nigeria. *Nigerian Journal of Clinical Practice* 2010; 13 (4):371-378.

22. Umar I, Oche MO, Umar AS. Patient Waiting Time in a Tertiary Health Institution in Northern Nigeria. *Journal of Public Health and Epidemiology* 2011;3(2):78-82.
23. Fekadu A, Andualem M, Micheal YH. Assesment of Clients' Satisfaction with Health Services Deliveries at Jimma University Specialized Hospital. *Ethiopian Journal of Health Science*2011;21(2):101-109.
24. Ige OK, Nwachukwu CC. Areas of Dissatisfaction with Primary Health Care Services in Government Owned Health Facilities in a Semi-Urban Community in Nigeria. *Journal of Rural and Tropical Public Health* 2010;9:19-23.
25. Kumari R, Idris M, Bhushan V, Khanna A, Agarwal M, Singh S. Study on Patient Satisfaction in the Government Allopathic Health Facilities of Lucknow District, India. *Indian Journal of Community Medicine* 2009;34(1):35-42.
26. Asekun-Olarinmoye EO, Bamidele JO, Egbewale BE, Asekun-Olarinmoye IO, Ojofeitimi EO. Consumer Assessment Of Perceived Quality Of Antenatal Care Services In a Tertiary Healthcare Institution In Osun State, Nigeria. *J Turkish– German Gynecol Assoc*, 2009; 10: 89-94.
27. Nwaeze IL, Enabor OO, Oluwasola TA. Perception and satisfaction with Quality of Antenatal care services Among Pregnant women at the University College Hospital, Ibadan, Nigeria. *Annals of Ibadan Postgraduate Medicine* 2013; 11 (1): 1-7.
28. Bhattacharya A, Chatterjee S, De A, Majumder S, Chowdhury KB, Basu M. Patient Satisfaction at a Primary Level Health Care Facility in a Distinct of West Bengal: Are Our Patients Really Satisfied? *Med J DY PatilVidyapeeth* 2018;11(4):326-331