

Additional File 1. Study data-collection instruments

This file contains the three data-collection instruments used in the study: (a) the interviewer-administered questionnaire for postpartum women; (b) the interviewer-administered questionnaire for healthcare providers; and (c) the structured facility assessment checklist completed with facility heads. The instruments were assembled by the authors for this study by adapting and combining items from several previously published, validated tools — including the Patient Satisfaction Questionnaire (Ware et al., 1976), the Quality from Patients' Perspective questionnaire (Wilde et al., 1994), a WHO-endorsed provider competence assessment tool (Thompson et al., 2015; WHO, 2010), a provider motivation scale (Mbindyo et al., 2009; Bennett et al., 2001; Mutale et al., 2013), and a facility service-readiness assessment (Oyekale, 2017) — together with items generated from the literature (see Methods, 'Data collection instruments', in the main manuscript for full citations). As assembled and combined for this study, the composite instruments have not been published as a set elsewhere. They are reproduced here in their original English-language format, as administered in the field.

APPENDIX I: QUESTIONNAIRE

A COMPARATIVE STUDY ON QUALITY OF PERINATAL CARE IN PUBLIC AND PRIVATE SECONDARY HEALTH FACILITIES OF IBADAN METROPOLIS: PERCEPTION AND EXPERIENCES OF REPRODUCTIVE AGE WOMEN

Dear respondent,

This study will be conducted by Dr. Abraham, a resident doctor in the Department of Community Medicine, University College Hospital, Ibadan. It is a research on quality of perinatal care in public and private secondary health facilities in Ibadan metropolis using the perception and experiences of reproductive age women. I would be requesting you to provide information which will be useful in developing interventions that would assist the health care workers and the government on ways to improve the quality of perinatal health services.

Please note that participation in this study is voluntary as you have a right to withdraw from the study at any stage. I however will appreciate your full participation. The responses obtained from you will be handled with privacy and confidentiality.

Would you be willing to participate in this research? 1. Yes 2. No

.....

.....

Signature of Participant/ Date

Signature of interviewer/ Date

LGA.....

Serial No:

Health facility type 1. Public 2. Private

Name of facility

Section A

I Socio-demographic Information

	Question	Response
1	Age as at last birthday (in years)	
2	Marital status 1.Single 2. Cohabiting 3. Married 4. Separated 5. Divorced 6. Widowed	
3	Ethnic group 1.Yoruba 2. Hausa 3. Igbo 4. Others..... (Please specify)	
4	Religion 1.Christianity 2. Islam 3. Traditional 4. Others..... (Please specify)	
5	State of Origin	
6	Highest level of education 1.No formal education 2. Primary 3. Secondary 4. Tertiary 5. Postgraduate	
7	Employment status 1.Employed 2. Unemployed	
8	Current Occupation	
9	Average monthly income	

II Socio-economic Information

	Question	Response
10	What type of house do you live in? 1.Traditional/hut structure 2. Rooms let in a house 3. Flat in blocks of flats 4.Semi-detached house 5.Fully detached house 6.Others.....(please specify)	
11	What is your MAIN source of drinking water? 1.Pipe water 2. Dug water 3. Water from spring 4. Rain water 5. Tanker truck 6. Bottled water 7. Sachet water 8. Others	
12	Does your household have the following items in good working condition? 1. Yes 2. No	
	1.Electricity	
	2.Radio	
	3.Television	
	4.Mobile telephone	
	5.Refrigerator	
	6.Cable TV	
	7.Air conditioner	
	8.Computer	
	9.Electric iron	
	10.Fan	
13	What type of fuel does your household MAINLY use for cooking? 1.Electricity 2. Natural gas 3. Kerosene 4. Charcoal 5. Sawdust 6.Wood 7.No food cooked in household 8.Others	
14	Do you own any of the following means of transportation in your household? 1. Yes 2. No	

	1.Bicycle	
	2.Motorcycle	
	3.Car/Van	
15	Do you own any of the assets listed? 1. Yes 2. No	
	1.Land	
	2.Livestock	
	3.House	
	4.Gold/Jewellery	
	5.Shares/Investments	
	6.Others	

III Past Obstetric History

	Question	Response
16	How many pregnancies have you had?	
17	How many living children do you have?.....	
18	Have you had any previous pregnancy loss less between 0-28 weeks (0-7months)? 1. Yes 2. No	
19	How many spontaneous abortions have you had?	
20	How many induced abortions have you had?	
	As regards the index pregnancy, answer questions 21-26	
21	Did you receive antenatal care (ANC)? 1. Yes 2. No	
22	If Yes to Q21, where did you receive antenatal care?.....	
23	If No, why?	
24	If yes to Q22, What was your gestational age at booking? (How many months were you when you booked for antenatal care?)	
25	How many antenatal visits did you have during this pregnancy?	
26	What was the gestational age at birth? (How many months gone were you when you had your delivery?)	

IV Present Delivery Information

	Question	Response
27	When did you deliver? How many hours ago?	
28	What time of the day did you deliver? 1. Day 2. Night	
29	What was the outcome of your pregnancy? 1. Baby alive 2. Still birth 3. Neonatal death (Still birth: baby born dead after 7 months of pregnancy, Neonatal death: baby died few minutes or hours after delivery)	
30	Number of babies delivered in the current delivery	
31	Mode of delivery 1.Vaginal delivery 2. Assisted delivery 3. Elective Caesarean section 4. Emergency Caesarean Section	
32	Were you allowed to have a companion (like spouse/partner, friend, relative) with you during delivery? 1. Yes 2. No	
33	Why did you choose the facility for your delivery? 1. Nearest facility 2. Best facility 3. Clean environment 4. Good services 5. Same facility used for ANC	Main Reason (Choose ONE only) Other Reason(s) (Choose all that apply)

		6. To get services not available elsewhere 7. Hospital of choice for delivery 8. Affordable services 9. Recommended by relative/friend 10. Avoid congestion in other facilities 11. Referred from another facility 12. Well equipped facility with supplies 13. Only option available 14. Facility offer specialized services 15. Complications in pregnancy 16. Providers treat clients well 17. Decision made by spouse 18. Can use insurance card 19. Like the facility 20. Others (please specify)		
34	Have you delivered in this health facility before? 1. Yes 2. No			
35	Were you referred from another health facility at any point during or after labour? 1. Yes 2. No			
36	Which cadres of health personnel attended to you during and after delivery?	1. Doctor 2. Nurse/Midwife 3. Auxiliary midwife 4. Student nurse/midwife 5. Community health extension worker 6. Others (please specify)		
37	In total how many health personnel assisted with your delivery?			
38	Who was the main health personnel who conducted the delivery of your baby?	1. Doctor 2. Nurse/ Midwife 3. Auxiliary midwife 4. Student nurse/ midwife 5. Community health extension worker 6. Others (please specify)		
39.	What was the gender of the main health personnel who conducted the delivery of your baby? 1. Male 2. Female			
40	Did you experience any complication(s) during or after your delivery? 1. Yes 2. No			
41	If yes, what type of complication(s)?			
42	Did your baby experience any of the following problems after delivery? (Multiple response allowed) 1. Trouble breathing after delivery 2. Trouble feeding 3. Infection 4. Yellowness of the eyes 5. No problem			
43	Did your baby require admission into neonatal intensive care (special care baby ward)? 1. Yes 2. No			

44	If yes, did your baby require the use of incubator? 1. Yes 2. No	
45	Did your baby require the use of oxygen? 1. Yes 2. No	

IV Quality of Care during Antenatal Visit(s)

Instructions: The next set of questions are on the quality of care during your antenatal visits. For each question, there are 5 answer choices ranging from ‘not at all’ to ‘to a very large extent’, please tick in the appropriate space. There is no false or true answer. What counts is that you express your opinion and experience (NAA=Not at all; TASE= To a small extent; TSE=To some extent; TALE=To a large extent; TAVLE=To a very large extent)

S/N	Statement	NAA	TASE	TSE	TALE	TAVLE
46	During your antenatal visits, did the midwife start the clinic according to scheduled time?					
47	Was your health care provider able to put your mind at ease?					
48	Did your health care provider carry you along in decision making?					
49	Did your health care provider treat your personal information with confidence?					
50	Was there good communication between health care professionals?					
51	Were your health care providers aware of your preferences and wishes?					
52	Were you clear who was in charge of care during your pregnancy?					
53	Did the health care provider treat you in a polite and respectful manner?					
54	Did your health care provider tell you of the pros and cons of the screening procedures you had?					
55	Were you given information regarding what to expect during labour and delivery?					
56	Was the information you were given about pregnancy and labour useful?					
57	Did the Information given to you about pregnancy satisfy my needs?					
58	Can the quality of information given to you be improved?					
59	Were you given information regarding normal delivery?					
60	Were you given information regarding a healthy lifestyle?					
61	Overall, I was satisfied with the antenatal care I received					

Section B: Structure Approach
Quality of Care during Delivery

Instructions: The next set of questions are on the quality of care during delivery. They range from the availability to the competence of the health providers. For each question, there are 5 answer choices ranging from 'not at all' to 'to a very large extent', please tick in the appropriate space. There is no false or true answer. What counts is that you express your opinion and experience (NAA=Not at all; TASE=To a small extent; TSE=To some extent; TALE=To a large extent; TAVLE=To a very large extent)

	Availability	NAA	TASE	TSE	TALE	TAVLE
62	Was there someone to receive you immediately on arrival to the hospital for delivery?					
63	Did it take a lot of time waiting for the health care provider to arrive?					
64	Was the midwife present in the room as much as you wanted during labour and birth?					
65	Was the health care provider always available at the facility?					
	Competence					
66	Did the midwife measure your blood pressure frequently during labour and childbirth?					
67	Did the midwife measure your temperature frequently during labour and childbirth?					
68	Did the midwife monitor uterine contractions as frequent as possible during labour and delivery?					
69	Was vaginal examination done every four hours during labour?					
70	Did the midwife listen to the foetal heart rate every hour during labour?					
71	Did the midwife take your pulse rate every four hours during labour?					
72	Was a partograph used by your health provider to monitor the progress of labour?					
73	Did you get the pain relief you wanted during labour and birth?					
74	Did you get the best possible medical care during labour and birth?					
75	Were you given episiotomy because the nurse was not willing to stress herself to bring the child out?					
76	Did you have spontaneous laceration that required sutures?					

Section C: Process Approach

Client-Provider Interaction

Instructions: The next set of questions are on client provider interaction. For each question, there are 5 answer choices ranging from 'not at all' to 'to a very large extent', please tick in the appropriate space. There is no false or true answer. What counts is that you express your opinion and experience (NAA=Not at all; TASE= To a small extent; TSE=To some extent; TALE=To a large extent; TAVLE=To a very large extent)

	Intrapartum care	NAA	TASE	TSE	TALE	TAVLE
77	Did the midwife give you all the support you needed?					
78	Did the midwife tell you your cervical dilatation on admission?					
79	Were you given information about the progress of labour?					
80	Did you communicate with the health care provider during labour and delivery?					
81	Did the midwife involve your partner/ whoever was present with you in the care most of the time?					
82	Did you know the health provider that was most responsible for your health care?					
83	Was the amount of time the midwife gave you good?					
84	Did the midwife always listen to you?					
85	Did the health provider explain the test and treatments to you clearly?					
86	Did the health provider involve you in decisions about your care?					
87	Did the person that took your delivery find out what your concerns were?					
88	Were you told of the Apgar score of your child in the 1 st minute?					
89	Were you told of the Apgar score of your child in the 5th minute?					
90	Were you told of your child's foetal heart rate during labour?					
Immediate postpartum care						
91	Did you have the opportunity to discuss birth afterwards with the assisting midwife?	NAA	TASE	TSE	TALE	TAVLE
92	Were you examined immediately after delivery?					
93	Did you have the best possible help when you were breastfeeding for the first time?					
94	Was your temperature was taken immediately after delivery?					
95	Was your breast examined immediately after delivery?					
96	Did you have contact with your baby within the first hour after birth?					
97	Were you counselled on danger signs specific to the early postnatal period?					

98	Were you given information on the importance of immunization?					
99	Were you counselled on infant feeding?					
100	Were you given health advice on nutrition?					
101	Were you given advice on personal hygiene?					
102	Were you given advice on exercise and fitness?					
103	Were you given a reminder of the 42-day check-up?					
104	Were you given education on care of baby's navel?					
105	Were you given education on care of my baby's skin?					
106	Did your health care provider ask if there were problems with feeding the baby?					
About All the different People you saw at ALL the different places you received care						
107	Were there times when the person you were seeing did not know your most recent medical history?					
108	Were there times when the person you were seeing did not have access to your recent tests or exam results?					
109	Were there times when you had to repeat tests because the person you were seeing did not have access to the results?					
110	Were there times when the person you were seeing did not know about changes in your treatment that another person had recommended?					
111	Were there times when you had to repeat information that should be in your medical record?					
112	Did the doctor you were seeing tell you about the side-effects you might get from a medicine?					
113	Does the doctor usually tell you what could happen if you didn't take the medicine that was being prescribed?					

Outcome Approach

Instructions: The next set of questions are on your satisfaction with the care provided during delivery. They range from the availability to the competence of the health providers. For each question, there are 5 answer choices ranging from 'not at all' to 'to a very large extent', please tick in the appropriate space. There is no false or true answer. What counts is that you express your opinion and experience (NAA=Not at all; TASE= To a small extent; TSE=To some extent; TALE=To a large extent; TAVLE=To a very large extent)

		NAA	TASE	TSE	TALE	TAVLE
114	I will return to this hospital if I am pregnant again					
115	I will recommend this hospital to others					
116	I am satisfied with the nurses					
117	I am satisfied with the doctors					
118	I am satisfied with the hospital					
119	I am satisfied with emotional care during labour and birth					
120	I am satisfied with medical care during labour and birth					

121	Overall assessment of care during labour and birth is good					
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APPENDIX 2: HEALTH CARE PROVIDER QUESTIONNAIRE

A COMPARATIVE STUDY ON QUALITY OF PERINATAL CARE IN PUBLIC AND PRIVATE SECONDARY HEALTH FACILITIES OF IBADAN METROPOLIS: PERCEPTION AND EXPERIENCES OF REPRODUCTIVE AGE WOMEN

Dear respondent,

This study will be conducted by Dr. Abraham, a resident doctor in the Department of Community Medicine, University College Hospital, Ibadan. It is a research on quality of perinatal care in public and private secondary health facilities in Ibadan metropolis using the perception and experiences of reproductive age women. I would be requesting you to provide information which will be useful in developing interventions that would assist the health care workers and the government on ways to improve the quality of perinatal health services.

Please note that participation in this study is voluntary as you have a right to withdraw from the study at any stage. I however will appreciate your full participation. The responses obtained from you will be handled with privacy and confidentiality.

Would you be willing to participate in this research?

1. Yes

2. No

.....
Signature of Participant/ Date

.....
Signature of interviewer/ Date

LGA.....

Serial No:

Health facility type 1. Public 2. Private

Name of facility.....

Section A

Socio-demographic and Economic Information

	Question	Response
1	Gender 1.Male 2. Female	
2	Age as at last birthday (in years)	
3	Marital status 1.Single 2. Cohabiting 3. Married 4. Separated 5. Divorced 6. Widowed	
4	Ethnic group 1.Yoruba 2. Hausa 3. Igbo 4. Others (Please specify)	
5	Religion	

	1.Christianity 2. Islam 3.Traditional 4.Others..... (Please specify)	
6	State of Origin.....	
7	Highest level of education 1.No education 2. Primary 3. Secondary 4. Tertiary 5. Postgraduate	
8	Family type 1.Monogamous 2. Polygamous	
9	How many people are in your household?.....	
10	Do you have children less than 18 years for whom you must provide for? 1.Yes 2. No	
11	In your household who is responsible for child rearing? 1.Self 2. Spouse 3. Relative 4. Paid Child minder 5. Others	
12	Who is the main wage earner in your household? 1.Self 2. Spouse/partner 3. Others	
13	How many people is your income the main source of livelihood?	
14	Do your dependants live in the same house with you? 1.Yes 2. No	
15	Are you and your spouse living apart due to work? 1.Yes 2. No	

II Occupation Characteristics

	Question	Response
16	What is your Profession? 1.Doctor 2. Nurse 3. Midwife 4. Community Health Extension Worker (CHEW) 5. Others (please specify)	
17	What is your number of years of experience?.....	
18	What position are you?.....	
19	How long have you been working in this position?.....	
20	How long have you been working in this facility?.....	
21	Do you have a job description? 1.Yes 2. No	
22	If yes, what is your job description?.....	
23	What is your salary type? 1.Monthly salary type 2. Daily salary type 3. No regular salary but other compensation 4. None	

III Staffing in Health facility

	Question	Response
24	Does the facility have skilled staff? 1. Yes 2. No	
25	Are health workers trained to carry out responsibilities effectively? 1.Yes 2. No	
26	Do staff in this facility attend yearly refresher course? 1. Yes 2. No	
27	How would you rate your working environment in terms of your relationship with other staff? 1. Excellent 2. Good 3. Fair 4. Poor 5. Bad	

Section B Competence of Health Worker

	Do you have competence in basic emergency obstetric and newborn care	Response
28	Setting up an Intra Venous line 1. Yes 2. No	
29	Prescribing antibiotics 1. Yes 2. No	
30	Prescribing magnesium sulphate 1. Yes 2. No	
31	Prescribing a uterotonic 1. Yes 2. No	
32	Administering antibiotics 1. Yes 2. No	
33	Administering magnesium sulphate 1. Yes 2. No	
34	Administering a uterotonic 1. Yes 2. No	
35	Performing forceps or vacuum delivery 1. Yes 2. No	
36	Performing manual removal of the placenta 1. Yes 2. No	
37	Performing manual vacuum aspiration 1. Yes 2. No	
38	Performing bimanual uterine compression 1. Yes 2. No	
39	Conducting newborn resuscitation 1. Yes 2. No	

Section C Work Motivation

Instructions: The next set of questions are on work motivation. For each question, there are 5 answer choices ranging from 'strongly agree' to 'strongly disagree', please tick in the appropriate apace. There is no false or true answer. What counts is that you express your opinion (SA= Strongly Agree; A= Agree; U=Undecided; D= Disagree; SD= Strongly Disagree)

S/N	Statement	SA	A	U	D	SD
40	I only do this job so that I get paid at the end of the month					
41	I usually feel emotionally exhausted at the end of every day					
42	Sometimes when I get up in the morning, I fear having another day at work					
43	I often do this job as it provides long term security for me					
44	Overall, I am satisfied with my job					
45	I am not satisfied with my colleagues at my workplace					
S/N	Statement	SA	A	U	D	SD
46	I am satisfied with my supervisor					
47	I am proud to be working for this hospital					
48	I find that my values and that of the hospital are very similar					
49	I have very little commitment to this hospital					
50	The hospital really inspires me to do my very best on the job					
51	I am a hard worker					
52	I cannot be relied on by my colleagues at work					
53	I do things that need doing without being told					
54	I am punctual when coming to work					

55	It is not a problem if I sometimes come late to work					
56	I always complete my task efficiently and correctly					

APPENDIX 3: FACILITY ASSESSMENT CHECKLIST

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Would you be willing to participate in this research? 1. Yes 2. No

.....

.....

Signature of Participant/ Date

Signature of interviewer/ Date

LGA.....

Serial No:

Health facility type 1. Public 2. Private

Name of facility

DEMOGRAPHIC INFORMATION OF PERSONNEL INTERVIEWED

1. Participant's title/designation and primary responsibilities.....
.....
2. How long have you worked at this facility?
.....
3. Who is the principal person responsible for rendering maternal services at this facility?
 1. Medical Doctor
 2. Nurse
 3. Pharmacy Technician
 4. Pharmacy Assistant
 5. Pharmacist
 6. Store Officer
 7. Medical Attendant
 8. Assistant Medical Officer
 9. Laboratory Scientist

10. Laboratory Technician
11. Laboratory Assistant
12. Others (Specify)

Availability of human resource

Now we would like to ask questions related to staffing in your facility				
4.	In total, how many health workers are there in this health facility? <i>(Please write the total number)</i>			
5.	Can you tell us the number of staff by cadre? List the numbers by cadre	Cadre	Number	
		Consultants		
		Medical Officers		
		Community Health Officer		
		Public Health Nurse		
		Midwives		
		Nurse		
		Nurse/Midwives (All Categories)		
		SCHEWs (All Categories)		
		JCHEWs (All Categories)		
		Environmental Health Officers		
		Pharmacy Technicians		
		Medical Records Officers		
		Dental Assistant		
		Laboratory Technician		
		Laboratory Scientist		
		Dentist		
		Pharmacist		
		Others (Specify)		
6.	In total, how <i>many health workers involved in giving maternal services in this center have been trained on service provision</i> in the last 2 years? <i>(Please write the total number).</i>			
	Can you tell us the number of these staff by cadre? List the numbers by cadre	Cadre	Number	
		Medical Officer		
		Community Health Officer		
		Public Health Nurse		
		Midwives		
		Nurse		
		Nurse/Midwives (All Categories)		
		SCHEWs (All Categories)		
		JCHEWs (All Categories)		
		Environmental Health Officers		
		Pharmacy Technicians		
		Medical Records Officers		
		Dental Assistant		
		Laboratory Technician		

		Others (Specify)_____		
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Question 7. Number of health care providers on duty at various times of the day

S/N	Designation	No available on morning duty daily (8am-2/4pm)	No available on afternoon duty daily (2pm-8pm)	No available On night duty daily (8pm-8am)
1.	Consultants (Obs/gyn)			
2.	Medical Officers			
3.	Nurses			
4.	Midwives			
5.	Auxillary nurses			
6.	Community Health extension workers			
7.	Anaesthetist			
8.	Radiographer			
9.	Laboratory scientist			
10.	Paediatricians			
11.	Pharmacist			

Infrastructure in Health facility

S/N	Statement	Yes	No
1	The facility has sufficient consulting room		
2	The consulting rooms are designed to provide privacy		
3	There is water in the consulting room (Check for running water or water in bucket)		
4	There is provision of hand washing liquids/ soap		
5	The consulting rooms are well ventilated		
6	There are enough seats provided in the waiting areas		
7	Rooms/Departments are clearly sign-posted		
8	There is availability of functional staff toilet facilities		
9	There is regular power supply in the labour ward		
10	If No, are there alternate power source? (Please name)		
11	Is adequate security in the hospital?		

12	Are there any functioning incubator?		
13	If yes, how many?.....		