THE AWARENESS AND PATTERN OF RISK FACTORS FOR INFERTILITY AMONG INFERTILE WOMEN AT AHMADU BELLO UNIVERSITY TEACHING HOSPITAL ZARIA.

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ABSTRACT

BACKGROUND

Infertility is a major reproductive health challenge in developing countries and many risk factors have been identified. Awareness of these factors can be important in preventive management.

Aim: To determine the awareness of infertility risk factors in patients.

METHODS

The study involved 220 patients attending the infertility clinic of ABUTH. Using interviewer administered structured questionnaire, data was collected on socio-demographic, gynecological, obstetrics and other history.

RESULT

The mean age of respondents was 29.2 ± 2.5 years. Primary and secondary infertility accounted 36.8% and 63.20% respectively. Coital exposure was ≤ 2 in 48.1% of the patients. 45% has menstrual irregularity and 59.5% had been treated for STI in the past. There is history of surgery in 25% and 71.5% were either overweight or obese and 3.2% had female genital mutilation. Of those with secondary infertility 33.6% were un-booked in their last pregnancy and the outcome was spontaneous miscarriage in 40.9%, induced miscarriage was 12.7% and stillbirth in 14.5%.On awareness of risk factors, 33.6%, had no knowledge of risk factors.

CONCLUSION

The study shows avoidable and preventable risk factors are still prevalent in our setting and there is a lack of sufficient awareness to drive preventive measures

Keywords: Infertility, pattern, risk factors, awareness.

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INTRODUCTION

The desire to have children is strong in a patriarchal society like ours, but for a sizeable minority, it is not easily fulfilled. Infertility is a major reproductive health scourge in Africa. The awareness of infertility risk factors among infertile women, is an essential step to safeguard fertility and its identification will enable modifiable factors to be addressed.

Declining fertility and increased infertility has led researchers worldwide to assess fertility awareness[1] Between 8 and 12% of couples around the world have difficulty conceiving at some points in their lives[2] Primary infertility is more common in the developed country[3] while secondary infertility rate is high in Sub-Saharan Africa .[2] Primary infertility is a serious reproductive healthcare concern among many Nigerian women with associated psychological impact.[4] Mokhar et al, in their work on risk factors of infertility, in

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Alexandria Egypt reported a prevalence of 80% and 20%, for primary and secondary infertility respectively.[5] A study in Guinea by Leno and fellow researchers reported a prevalence of 17.8%, with primary infertility 5.4.%, while secondary infertility 12.4%.[6]

Panti and colleagues in their research on the profile of infertility in a teaching hospital in North West Nigeria found a prevalence rates of 15.7%, with primary and secondary infertility 32.8% and 67.2% respectively,[7] Oguejiofor et al reported 26.8% and 55.% for primary and secondary infertility respectively,[8] while Obuna and others , reported 65% prevalence of secondary infertility.[9] This similar to findings by in Delta state, Nigeria by Odunvbun and other workers,[10]who found an incidence of 32%, of which 58.9%, had secondary infertility.
Various risk factors have been identified in patients presenting with infertility. These range from age, obesity, lifestyle, environment, sexually transmitted infection, family history, and exposure to radiation, chemotherapy, unsafe abortion, home delivery, previous surgery, infectious disease such as tuberculosis and HIV [7,8,11,12,13,14]

The amount and quality of information available to a patient is a crucial factor, in the evaluation and success of their managements.[15] Poor fertility awareness may be a contributing factor to infertility, however studies have shown there is poor awareness regarding the causes of infertility among the general population.[131516,17,18] Highlighting the risk factors of infertility and the awareness of it, in our environment, Zaria, North Western Nigeria, will be of benefits in addressing the whole problem of infertility in Nigeria, Africa and the world at large.

Aim: To determine the awareness and pattern of risk factors among infertile women.

METHODOLOGY:
This was a cross-sectional prospective study carried out among infertile clients presenting at the reproductive/fertility clinic of Ahmadu Bello University Teaching Hospital (ABUTH) Shika, Zaria.

Methods: Two hundred and twenty women who presented to the infertility clinic, during the study period August 20th, 2015 to August 20th 2016, were included in the study. The history of infertility, other gynecological history, medical, surgical and obstetric history as applicable, were elicited from the patients and the BMI measured. The information gotten are then transferred into a well-structured questionnaire that captures the various aspects of the history including awareness of these factors.

SAMPLE SIZE DETERMINATION
The sample size was calculated using Fischer's statistical formula for cross sectional study.
$N = z^2pq/d^2$
N = minimum sample size
Z = standard normal deviate for a normal distribution and is taken as 95%. CI =1.96 from Z table.
P = Proportion or prevalence from previous study. 15.4% [9]
Q = 1-p 1-0.154 = 0.846
D = 0.05 CI/ degree of precision.

$$N = \frac{(1.96)^2 \text{x} 0.154 \text{x} 0.846}{0.05^2} = 200$$

With 10% attrition rate 220 respondents were sampled.

RESULT TABLES.

Table 1. Socio-demographic characteristics of the patients.

	Frequency (n=220)	Percent (%)	
Age			
<21	7	3.2	
21-25	61	27.7	
26-30	33	15	
31-35	112	50.9	
36-40	6	2.7	
41-45	1	0.5	
Mean age			29.2±2.5
Age at marriage			
<16	40	18.2	
16-20	72	32.7	
≥21	108	49.1	
Order of Marriage			
First	181	82.3	
Second	35	15.9	
Third	3	1.4	
Fourth	1	0.5	
Literacy Level			
No Education	27	12.3	
Primary	33	15	
Secondary	67	30.5	
Tertiary	77	35	
Others	16	7.3	
Occupation			
Unemployed house wife	116	52.7	
Trader	32	14.5	
Civil servant	39	17.7	
Professional	14	6.4	
Others	19	8.6	
Religion			
Christianity	76	34.5	
Islam	144	65.5	
Marital Status			
Married	201	91.4	
Single	9	4.1	
Divorced/separated	10	4.5	

Table 2 Reproductive Profile

Previous live birth	Frequency (n=220)	Percent (%)
0	93	42.3
1	56	25.5
2	32	14.5
3	18	8.2
4	11	5
≥5	10	4.5
Outcome of last pregnancy		
Miscarriage	90	40.9
Induced abortion	28	12.7

Live birth	70	31.8
Still Birth	32	14.5
Previous miscarriage		
0	121	55
1	47	21.4
2	38	17.3
3	10	4.5
4	4	1.8
Previous induced abortion		
0	180	81.8
1	35	15.9
2	3	1.4
3	1	0.5
4	1	0.5

Table 1 and 2 shows the socio-demography and reproductive profile of clients. The mean age is 29.2±2.5. It also shows 50.9% of the patient married at an age less than 20 years, 12.3% had no education and 52.7% are house wives. In patients with secondary infertility, the outcome of the last pregnancy was miscarriage in 40.9% induced abortion 12.7%, while 14.5% had stillbirth.

Table 3. BMI, Type and Duration of infertility.

	Frequency (n=220)	**Percent**	**P value= 0.000**
BMI			
<18.5	7	3.2	
18.5-24.99	55	25	
25.0-29.99	84	38.2	
30.0-34.99	52	23.6	
35-39.9	17	7.7	
≥40	5	2.3	
Previous pregnancies			
0	81	36.8	
≥1	139	63.2	
Duration of Infertility			
1year	27	12.3	
2 years	90	40.9	
3-5years	75	34.1	
>5years	28	12.7	

In table 3, about 71.8% of the patients were either overweight or in the obese category. Primary infertility was 36.8%, while secondary infertility was 63.2%.

Table 4. Events at the last delivery in secondary infertile clients.

	Frequency (n=220)	**Percent**	**P value= 0.000**
Booking status			
Booked	140	63.6	
Un-booked	74	33.6	
Prenatal care	6	2.7	
Supervision at the last delivery			

At home without supervision	62	28.2
At home under supervision	30	13.6
At a Primary Care Centre	36	16.4
At a secondary/Tertiary Centre	92	41.8
Mode of last delivery		
Spontaneous Vaginal Delivery	186	84.5
Instrumental Vaginal Delivery	6	2.7
Caesarean Section	28	12.7
Labour outcomes		
Uneventful	124	56.4
Complicated by PROM	38	17.3
MRP	5	2.3
APH/PPH	17	7.7
Prolong Labour	18	8.2
Obstructed Labour	14	6.4
Still Birth	4	1.8
4b. Materials used for adsorbing blood during the last delivery		
Disposal pad	146	66.4
Rag re-used after washing and drying	25	11.4
Had use an inappropriate material before obtaining serial pad	36	16.4
Others	13	5.9
Use of indigenous intra-vaginal medicine postpartum		
Yes	15	6.8
No	205	93.2

In table 4a and b, shows 33.6% were un-booked and 28.2% laboured at home without supervision and while 84.6 had spontaneous vaginal delivery 12.7% had caesarean section and 16.4% of the clients used an inappropriate material for adsorbing lochia in the puerperal period

Table 5. Coital and Menstrual Pattern.

	Frequency (n=220)	Percent	P value
Coital exposure per week			0.000
0	4	1.8	
1	30	13.6	
2	72	32.7	
3	74	33.6	
4	35	15.9	
5	5	2.3	
Menstrual cycle			0.000
Regular	121	55	
Irregular	99	45	
Dysmenorrhoea			0.500
Yes	105	47.7	
No	115	52.3	
Dyspareunia			0.000
Yes	57	25.9	
No	163	74.1	

In terms of coital exposure, patients with 2 or less were 48.1% while 45% had history of menstrual irregularity

Table 6. Contraceptive usage and other risk factors of infertility.

	Frequency (n=220)	Percent	P value
Past contraceptive usage			0.000
None	173	78.6	
Yes	47	21.4	
Type of contraceptive used			0.003
Pills	15	31.9	
Injectable	17	36.2	
Barriers	6	12.8	
IUCD	4	8.5	
Others	5	10.6	
Previous recurrent miscarriages			0.000
Yes	40	18.2	
No	180	81.8	
Post abortion sepsis			
Yes	26	11.8	
No	194	88.2	
Post abortion care			
Yes	31	14.1	
No	189	85.9	
Present history of abnormal vaginal discharge			0.106
Yes	98	44.5	
No	122	55.5	
Chronic pelvic pain			0.686
Yes	113	51.4	
No	107	48.6	
Past treatment for STI			0.005
Yes	131	59.5	
No	89	40.5	
Use inappropriate absorbing material during menses			
Yes	66	30	
No	154	70	
Previous Surgery			
Yes	55	25	
No	165	75	
Type of surgery			0.001
Caesarean section	18	32.7	
Salpingectomy	7	12.7	
Appendectomy	2	3.6	
Myomectomy	9	16.4	
Other abdominal surgery	19	34.5	
Female genital mutilation			0.000
Yes	7	3.2	
No	213	96.8	
Family history of infertility in siblings			
Yes	34	15.5	
No	186	84.5	
Cigarette Smoking			
Yes	9	4.1	
No	211	95.9	
Alcohol ingestion			
Yes	4	1.8	
No	216	98.2	
Type of family setting			
Monogamous	142	64.5	
Polygamous	78	35.5	
Number of Sexual partners			
One	207	94.1	
Two	4	1.8	
Three or more	9	4.1	

Only 21.4% of the patients have used contraceptive in the past. There were 11.8% cases of post abortion sepsis while 59.5% had a history of previous treatment for STI. There was history of previous surgery in 25.0%, of which caesarean section was 8.2% and 3.2% had female circumcision.

Table 7. Awareness of risk factors among the patients

	Yes	No	I don't know	Total	chi-square
Knowledge of infertility risk factors	131(59.5)	15(6.8)	74(33.6)	220(100)	X^2=91.755**, df=2 P-value =0.000
Do you know that some of them can be prevented/modified	113(86.3)	4(3.1)	14(10.7)	131(100)	X^2=166.275**, df=2 P-value =0.000
Which of these are risk factors:					
Age	92(70.2)	6(4.6)	33(25.2)	131(100)	X^2= 88.595**, df=2 P-value =0.000
Low body weight	52(39.7)	18(13.7)	61(46.6)	131(100)	X^2=23.557**, df=2 P-value =0.000
High body weight	57(43.5)	14(10.7)	60(45.8)	131(100)	X^2=30.336**, df=2 P-value =0.000
Smoking	55(42)	14(10.7)	62(47.3)	131(100)	X^2=30.794**, df=2 P-value =0.000
Alcohol	54(41.2)	14(10.7)	63(48.1)	131(100)	X^2=31.160**, df=2 P-value =0.000
Surger _Myomectomy	37(28.2)	9(6.9)	85(64.9)	131(100)	X^2=67.664**, df=2 P-value =0.000
Surgery _Caesarean Section	17(13)	15(11.5)	99(75.6)	131(100)	X^2=105.221**, df=2 P-value =0.000
Surgery _Other Abdominal surgeries	14(10.7)	13(9.9)	104(79.4)	131(100)	X^2=125.053**, df=2 P-value =0.000
STI's	83(63.4)	7(5.3)	41(31.3)	131(100)	X^2=66.382**, df=2 P-value =0.000
TB	35(26.7)	14(10.7)	82(62.6)	131(100)	X^2=55.527**, df=2 P-value =0.000
HIV	32(24.4)	27(20.6)	72(55)	131(100)	X^2=27.863**, df=2 P-value =0.000
Home delivery	47(35.9)	15(11.5)	69(52.7)	131(100)	X^2=33.771**, df=2 P-value =0.000
Induced abortion	65(49.6)	14(10.7)	52(39.7)	131(100)	X^2=32.168**, df=2 P-value =0.000
Miscarriage with no medical attention	62(47.3)	9(6.9)	60(45.8)	131(100)	X^2=41.328**, df=2 P-value =0.000
Delayed menarche	36(27.5)	11(8.4)	84(64.1)	131(100)	X^2=63.038**, df=2 P-value =0.000
Infrequent menstrual flow	56(42.7)	6(4.6)	69(52.7)	131(100)	X^2=50.672**, df=2 P-value =0.000
Chemotherapy	34(26)	9(6.9)	88(67.2)	131(100)	X^2=74.672**, df=2 P-value =0.000
Radiotherapy	32(24.4)	11(8.4)	88(67.2)	131(100)	X^2=72.672**, df=2 P-value =0.000
Intercourse<3 times per week	39(29.8)	49(37.4)	43(32.8)	131(100)	X^2=1.160**, df=2 P-value =0.000
Do you think ignorance plays a role in some causative factors of infertility	93(71)	38(29)	-	131(100)	X^2=23.092**, df=1 P-value =0.000
Do you know about the treatment options available for infertility	86(65.6)	45(34.4)	-	131(100)	X^2=12.832**, df=1 P-value =0.000

DISCUSSION:

The expectations of children following marriage, makes infertility a dreaded outcome in our society, hence the need to identify the risk factors that predisposes and the awareness to drive health seeking for solution. Our study found 36.8% of infertile patients had primary infertility, while 63.2%

had secondary infertility. It is in consonance with the findings of Panti et al, from Sokoto,[7] Odunvbun in Abraka[10] and Oguejiofor and fellow workers in Nnewi[8] which had reported a higher rate of secondary infertility. It also agrees with previous submissions of secondary infertility being higher in sub-Saharan Africa, than in developed world.[2,3,6.] This high prevalence has been attributed to a high risk of sexually transmitted infection.[2]

The mean age of clients was 29.2±2.5 years and the age at marriage, in 50.9% of the clients is ≤ 20years. Our result agrees with the findings of Dhont[19] and Odunvbun,[8] but at variance with age reports by Sule et al.[2] This is not surprising, as there is a high rate of early marriage in Northern Nigeria, where the study was carried out.

Our study also found bad obstetric outcomes, in those with secondary infertility, as 42.3 % had history of miscarriage or preterm birth with no live birth and the outcome of last pregnancy was spontaneous miscarriage in 40.9% and stillbirth in 14.5%, while 12.7% had induced miscarriage. This finding concur with Dhont et al, in Kigali who reported clients with secondary infertility are more likely to report an adverse pregnancy outcome.[19] Our study also found poor prenatal care and antenatal care, as only 2.7% had prenatal care while 33.6% were un-booked in their last pregnancy. This is in keeping with a study which showed cases were likely not to have had prenatal care.[19]

We also found poor coital exposure as a factor as 48.1% had ≤ 2 coital exposure per week. This agrees with study Audu et al,[16] which showed poor coital exposure as a risk factor. This is not uncommon in polygamous nature of the setting the study was carried out.

Our study found menstrual irregularities in 45%, dysmenorrhea 47.7%, dyspareunia 25.9% and chronic pelvic pain 51.4%, while 59.5% had a history of past treatment of STI, 44.5% abnormal vaginal discharge and 30% had used inappropriate materials during menstruation. This correlates with the finding of Panti et al,[7] who had reported on these risk factors, which are very prevalent in our setting. There was history of previous surgery in 25% of the patients. Of these, myomectomy accounted for 34.5%, caesarean section 32.7%, salpingectomy 12.7%, while appendectomy was 3.6%. This agrees with studies on surgical risks on fertility.[7,21]

Our study also found 71.8% of the patients were either overweight or obese, 4.1% smokes and 1.8% imbibe alcohol. These findings agree with previous reports on these riskfactors.[4,11,12] The low smoking and alcohol consumption reflects our deeply religious and conservative setting.

On awareness of the risk factors, our study found about 33.6% of the patients don't know about the risk factors, 70.2% identified age as a risk, 42% smoking, while 63.4% identified STI as a risk factor. This is similar to the finding of Obasi et al,[14] however as other researchers have reported, [1,15,16,18]more still need to be done on awareness of risk factors in infertile patients.

CONCLUSION

Our study shows modifiable risk factors are still prevalent in our setting and more proactive measures are needed to drive awareness of these risk factors, to help reduce the scourge in our environment.

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