

Pattern of Socio-Demographic and Reproductive Profile of Patients Attending the Infertility Clinic of Ahmadu Bello University Teaching Hospital, Zaria

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Abstract

Background: Infertility is a growing universal problem cutting across all cultures and societies all over the world and has tremendous impact on the quality of life of women and their psychological well-being. In Nigeria and most parts of the sub-Saharan Africa, so much premium is placed on child birth. While infertility is not actually a life-threatening disorder, it has negative social and mental consequences on the couples.

Objective: To determine the pattern of socio-demographic and reproductive profile of patients attending the infertility clinic of Ahmadu Bello University Teaching Hospital (ABUTH), Zaria.

Method: This was a cross-sectional study that was conducted to determine the pattern of socio-demographic and reproductive profile of patients with infertility using a structured questionnaire. The respondents were recruited from the infertility clinic of Ahmadu Bello University Teaching Hospital, Zaria, Nigeria between August and October 2018. The data was analyzed using SPSS 20 version.

Result: The ages of the respondents ranged from 18 to 49 years of which 39% of them were between 26-33 years with a mean age of 29.2 years (SD: ± 2 years). Over 80% of respondents were married in a monogamous family setting while 18.4% were in a polygamous family setting and majority (91.2%) were in their first order of marriage while 7.8% were in their second and third order of marriage. Fifty-four percent of respondents had tertiary level of education and 43% of respondents were unemployed. Majority (56.9%) of the women in this study had secondary infertility while primary infertility accounted for 43.1%.

Conclusion: In this study, the age at which most patients presented with infertility was found to be above the age of maximum fecundability. Also, secondary infertility was found to be commoner than primary infertility. In view of these, public health programs need to incorporate infertility as an integral part of Reproductive Health Services.

KEYWORDS: Infertility, socio-demographic characteristics, reproductive profile.

Introduction

World Health Organization (WHO) defined infertility as a condition of the reproductive system characterized by the inability of a couple to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.¹ Infertility has been estimated to affect 8-10% of couples within the reproductive age worldwide.² Infertility could be categorized as primary, secondary or unexplained. Primary infertility is one in which no previous pregnancy has been achieved while secondary infertility describes a previously achieved pregnancy irrespective of the outcome.³ Unexplained infertility is said to occur when no detectable cause has been found after all exhaustive evaluation of tubal, uterine, cervical, ovarian and male factors of infertility.⁴ Primary infertility is commoner in the developed countries^{5, 6} as some women tend to postpone child bearing until the mid to late 30s with associated decline in fertility after 35yrs of age⁷ while secondary infertility is commoner in the developing countries,⁸ where little effort is put to delay childbearing and where early first marriage is a common practice.⁹ Infertility can also be categorized based on the cause where 30-40% is due to male factor, 30-40% is due to female factor, 10-20% is due to both male and female factors and 5-10% unexplained factor.⁵ Certain terms are used to define the fertility potential of man which include fecundity which is the likelihood of achieving a live birth in one menstrual cycle.¹⁰ Fecundability rate on the other hand is the probability of achieving conception per menstrual cycle¹¹ and the rate is 20-25% in fertile couples.⁵ In Nigeria and most parts of sub-Saharan Africa, so much premium is placed on child birth and while infertility is not actually a life-threatening disorder, it has negative social and mental impact on

couples. Women suffer most of the adverse effects including stigmatization and domestic violence.¹² Infertility is a global public health issue affecting nearly 72.4 million couples.¹³ The prevalence of infertility in the UK is estimated to be in the region of 14%¹⁴ and in the US it is about 7.4%.¹⁵ In Sub-Saharan Africa, the prevalence of infertility varies from 9% in Gambia to 10% in Togo and Rwanda and to about 32% in Nigeria.² Infertility accounts for 60-70% of gynaecological consultations in Nigerian tertiary hospitals.³ The incidence of infertility in various institutions reported in some parts of Nigeria are 4.0% in Ilorin,¹⁶ 15.4% in Abakaliki¹⁷ and 48.1% in Oshogbo¹⁸ while the prevalence of infertility in a tertiary institution in Sokoto is 15.7%.¹⁹ Age is an important socio-demographic variable that influences fertility.²⁰ The age of maximum fecundability in women is at about 24yrs and after 30yrs the decline is rapid³ and in men, fecundability is also maximal at age 24-25.³

Education and social class play important roles in the pattern of infertility as women who had a secondary level of education or higher (51.8%) were more likely to have good knowledge of infertility in a studied population compared to those with lower level of education (48.2%).²¹

Infertility is commoner in married women 74% than in the unmarried 24%.²² A coital frequency of three or more times per week is required to effectively cover the fertile period.²³ Inadequate coital exposure of less than twice a week was seen in 45.7% of infertile women.¹⁷

Parity, previous pregnancies, menstrual cycle and contraception are reproductive factors that affect fertility. In a teaching

hospital in North West Nigeria, the median parity was 0.95 ± 1.3^{19} and in South East Nigeria, the median parity was 1.4 ± 0.8 .¹⁷ Secondary infertility is largely seen in developing countries as opposed to developed countries. Sixty five percent of women with infertility have had previous pregnancies while 34.6% were nulliparous.¹⁷

Materials and methods

The study was conducted on all patients attending the infertility clinic of the Department of Obstetrics and Gynaecology, Ahmadu Bello University Teaching Hospital, Zaria. The hospital is a 520-bed tertiary health institution located in Zaria, Sabon-gari local government area in Kaduna, North-west Nigeria with an estimated population of about 546,000. Zaria is a major city in Kaduna state as well as being a local government area known to house Nigeria's largest university, Ahmadu Bello University. Zaria has a history of sedentary Hausa-Fulani settlements with institutional market exchange and farming. It was a cross sectional study enrolling all women attending the infertility clinic of Ahmadu Bello University Teaching Hospital, Zaria that met the inclusion criteria below and it was only those who gave consent that were recruited into the study. The sample size was calculated using the formula

$$n = \frac{Z^2 pq}{d^2}$$

n = desired sample size

Z = standard normal deviate usually set at 1.96 which corresponds to the 95% confidence interval

p = prevalence of infertility in Sokoto (0.157)¹⁹

q = 1 - p = 1 - 0.157 = 0.843

d = degree of accuracy desired set at 0.05

$$n = \frac{1.96^2 \times 0.157 \times 0.843}{0.0025}$$

= 203

Allowing an attrition rate of 10%, total sample size is 223.

The study was carried out between August and October 2018.

It included all consenting clients with infertility and excluded non-consenting clients. A pretested, structured questionnaire was administered to a cross-section of 223 women in the Infertility clinic of Ahmadu Bello University Teaching Hospital, Zaria. A convenience sampling method was used. The questionnaire included socio-demographic characteristics such as age, ethnic group, marital status, type of marriage, order of marriage, religion, occupation and educational status. The reproductive profile included number of previous term pregnancies, number of preterm pregnancies, number of abortion, number of children alive and place of last delivery or abortion.

The interviewer-administered questionnaires was supervised by the resident doctors and nurses who were properly trained on the nature of the study. Only those respondents who gave consent after detailed counseling were recruited. These respondents were informed that the investigation was purely for research purposes and there was no penalty whatsoever for not giving consent or decision to withdraw consent at any time. The name, hospital number and address of the respondents were not required to ensure confidentiality of the information given.

The data was analyzed using SPSS version 20. Descriptive statistics were employed where appropriate to illustrate the characteristics of the studied population. Ethical approval was obtained from the ethical and health research committee of the Ahmadu Bello University Teaching

Hospital, Zaria.

Results

Table 1A: Socio-demographic characteristics of the respondents

Characteristics	Frequency	Percentage
	N=223	
Age group		
18 -25 years	78	35.9
26 -33 years	84	38.7
34 -41 years	45	20.7
42 -49 years	10	4.6
Ethnic group		
Hausa	125	57.6
Fulani	18	8.3
Yoruba	16	7.4
Igbo	18	8.3
Others	40	18.4
Marital status		
Single	2	0.9
Married	221	99.1
Widow	0	0.0
Marriage type		
Monogamy	175	81
Polygamy	40	18.4
Order of marriage		
First	198	91.2
Second	15	6.9

Table 1A shows the socio-demographic characteristics of the study population. The ages of the respondents ranged from 18 to 49 years of which 39% of them were between 26-33 years with a mean age of 29.2 years (SD: ± 2 years). Over 75% of the respondents were aged 33 years and below while 25% of respondents were aged between 34-49 years. Majority of the respondents (58%) were of the Hausa ethnic group, 8.3% were of the Fulani ethnic

group, 8.3% were of the Igbo ethnic groups, 7.4% belonged to the Yoruba ethnic group and 18.4% belonged to the other ethnic groups in Nigeria. Ninety-nine percent of respondents were married while only 1% was single. Over 80% of respondents were married in a monogamous family setting while 18.4% were in a polygamous family. Majority (91.2%) were in their first order of marriage while 7.8% were in their second and third order of marriage.

Table 1B: Other socio-demographic characteristics of the respondents

Characteristics	Frequency	percentages
	n=223	
Religion		
Islam	156	71.9
Christianity	60	27.6
Traditional	1	0.5
Educational status of client		
Informal	12	5.5
Primary	9	4.1
Secondary	78	35.9
Tertiary	116	53.5
Occupation of client		
House wife	94	43.3
Business person	39	18.0
Civil servant	37	17.1
Student	16	7.4
Others	29	13.4

Table 1B shows other important socio-demographic characteristics of the respondents. The predominant religions were Islam and Christianity accounting for 72% and 28% respectively. Fifty-four percent of respondents had tertiary level of education, 36% had secondary level of education, 4.1% had primary level of education and 5.5% had no formal education. Forty-three percent of respondents were unemployed, 18% were business women, 17% were civil servant, 7.4% were students and 13.4% were artisans.

Table 2: Reproductive profile of the respondents

Reproductive profile variables	Frequency n=233	Percentage
Parity		
Nulligravida	96	43.3
Nulliparity	34	15.2
Primiparity	62	27.8
Multiparity	31	13.9
Number of previous miscarriages		
0	164	75.6
1	30	13.8
2	12	5.5
3	1	0.5
4	4	1.8
5	2	0.9
8	2	0.9
Place of last delivery		
Hospital	68	73.3
Home	25	26.8
Place of last miscarriage		
Hospital	39	74.6
Home	12	23.5

Table 2 shows the parity, previous miscarriage, place of last delivery and place of last miscarriage of the respondents. Majority (56.9%) of the women in this study had secondary infertility while primary infertility accounted for 43.3%. Of the 56.9% (n=127) of respondents with secondary infertility, 40% (n=51) had a previous miscarriage and of this, 33.3% (n=17) had induced abortion. Hospital was the place of last delivery in 73% of the respondents with secondary infertility while 27% of them had home delivery. Also 75% of respondents with a previous history of miscarriage had it in the hospital while 24% had the miscarriage at home.

Table 3: Descriptive statistics of some menstrual variables of the respondents

Variable	N	Minimum	Maximum	Mean
Age at menarche (years)	210	9	18	13.62
Length of menstrual periods (days)	215	2	21	4.70±1.91
Length of menstrual cycle (days)	212	15	360	35.28±34.20

Table 3 describes some menstrual variables in the study population. The age at menarche for the respondents in this study ranged 9-18years with a mean age of 13.62 years (SD: ± 1.43). The length of menstrual periods ranged from 2-21 days with a mean of 4.70 days (SD: ± 1.91) and the length of menstrual cycle from 15-360 days with a mean of 35.28 days (SD: ± 34.20). Some respondents had not menstruated for up to a year while some had frequent menses.

Table 4: Menstrual history variables of the respondents

Menstrual history variables	Frequency	Percentage
Regularity of periods		
Regular	168	77.4
Irregular	45	20.7
Menstrual flow		
Normal	164	75.6
Heavy	28	12.9
Light/Scanty	22	10.1
Items used in menstrual flow management		
Sanitary pad	183	84.3
Cloth	27	12.4
Others	2	0.9
Menstrual cramps occurrence		
Before periods	115	53.0
During periods	45	20.7
After periods	6	2.8
None	41	18.9
Nature of cramps		
Mild	77	35.5
moderate	48	22.1
Severe	37	17.1
Incapacitating	5	2.3
No cramps experienced	42	19.4

Table 4 shows the menstrual history variables. Majority (77.4%) of the respondents reported regular menses, 20.7% had irregular menses and 1.9% could not characterize their menstrual pattern. Seventy-five percent had normal menstrual flow, 13% had heavy menses and 10% had light/scanty menses. In terms of menstrual flow management, 84.3% use sanitary pad while 12% use cloth. Seventy-six percent of respondents experience menstrual cramps, 36% of which are mild, 22% moderate, 17% severe and 2.3% incapacitating.

Discussion

The traditional African society places a very high premium on child bearing. Childlessness is a dreaded outcome of any marriage in our society and often leads to polygamy and broken marriages. This study focused on the socio-demographic and reproductive profile of patients with infertility. The ages of the respondents ranged from 18 to 49 years of which 39% of them were between 26-33 years with a mean age of 29.2 years (SD: ± 2 years). This is similar to the finding by Lamarin et al.²¹ It has been found that the age of maximum fecundability in women is at about 24 years and after 30 years, the decline is rapid.³ This shows that majority of the respondents in this study have gone beyond their age of maximum fecundability. Again, in this study 25% of respondents were aged 34 years and above. It has been reported that the number and quality of oocytes in women begins to decrease after 35 years of age and women with evidence of diminished ovarian reserve have uniformly poor pregnancy rates.²⁴ Ninety-nine percent of respondents in this study were married and is in concordance with the findings of Sumera et al. which found that infertility is commoner in married women (74%) in comparison with the unmarried (24%).²²

This study showed that 81% of respondents were married in a monogamous setting and 91% were in their first order of marriage which is similar to the study conducted in Bauchi, Nigeria where women with

infertility were married in a monogamous setting (65%) and in their first order of marriage (82%).²¹ More than half of infertile population studied had tertiary level of education which is consistent with the findings of Sumera et al.²² but inconsistent with that reported by Lamarin et al.²¹ The reason could be linked to the predominance of tertiary institutions in this environment. Forty-three percent of respondents in this study were unemployed. The median parity of respondents in the studied population was 1.2 ± 1.0 and is similar to findings from a teaching hospital in North Western Nigeria (mean parity, 0.95 ± 1.3)¹⁹ and in South East Nigeria, (mean parity, 1.4 ± 0.8).¹⁷ Majority (56.9%) of women in this study had secondary infertility while primary infertility accounted for 43.3%. The predominance of secondary infertility in this study (57%) is consistent with findings largely seen in developing countries as opposed to developed countries.⁸ This finding is also similar to the 65% found in women with infertility that had previous pregnancies compared to the 34.6% that were nulliparous.¹⁷ Also in Sokoto, Nigeria, 32.8% had primary infertility while 67.2% had secondary infertility.¹⁹

In this current study, out of the 56.9% of respondents with secondary infertility, 40% had a previous miscarriage and of this, 33.3% had induced abortion. In a study conducted by Koster, 37% of women with secondary infertility never had a child after

an induced abortion either due to failure to conceive or due to repeated abortions.²⁵ Also, results from Okonofua revealed that infertile women are seven times more likely to report previous induced abortions as compared to fertile pregnant controls.²⁶ Twenty-seven percent of respondents with secondary infertility reported home to be the place of last delivery which is similar to most of the deliveries in Calabar, Nigeria that were attended to by unskilled birth attendants, thus contributing to the increased rate of tubal factor infertility caused by puerperal sepsis.²⁷ The place of last delivery was at home in 62.5% of parous patients presenting with infertility.¹⁹ A major limitation of this study is its hospital-based nature which may not be representative of the larger society as it is possible that those who do not seek hospital care may differ in certain ways.

Conclusion

Infertility is a significant public health issue with enormous social and psychological implications. In this study, the age at which most respondents presented with infertility was found to be above the age of maximum fecundability. Also, secondary infertility was found to be commoner than primary infertility. Therefore, public health programs need to incorporate infertility as an integral part of Reproductive Health Services.

References

1. Zegers-Hochschild F, Adamson GD, de Mouzon J, Ishihara O, Mansour R, Nygren K, et al. The international committee for monitoring assisted reproductive technology (ICMART) and the world health organization (WHO) revised glossary on ART terminology, 2009. *Human Reproduction*. 2009;**24**(11):2683-7.
2. Ombelet W. Reproductive healthcare systems should include accessible infertility diagnosis and treatment: An important challenge for resource-poor countries. *International Journal of Gynecology & Obstetrics*. 2009;**106**(2):168-71.
3. Idrisa A, Ojiyi E. Pattern of infertility in North-Eastern Nigeria. *Trop J Obstet Gynaecol*. 2000;**17**:27-9.
4. Practice committee of the American society for reproductive medicine. Effectiveness and treatment for unexplained infertility. *Fertility and Sterility*. 2006;**86**(5):S111-S4.
5. Saner-Amigh KJ, Halvorson LM. Andrology and fertility assessment. *Laboratory Medicine*. 2015;**42**(1):41-50.
6. Etuk SJ. Keynote Address- Reproductive health: global infertility trend. *Nigerian Journal of Physiological Sciences*. 2009;**24**(2):85-90.
7. Chou KL, Chi I. Childlessness and psychological well-being in Chinese older adults. *International Journal of Geriatric Psychiatry*. 2004;**19**(5):449-57.
8. Araoye MO. Epidemiology of infertility: social problems of the infertile couples. *West African Journal of Medicine*. 2003;**22**(2):190-6.
9. Nachtigall RD. International disparities in access to infertility services. *Fertility and Sterility*. 2006;**85**(4):871-5.
10. Van Noord-Zaadstra BM, Looman CW, Alsbach H, Habbema JD, te Velde ER, Karbaat J. Delaying

- childbearing: effect of age on fecundity and outcome of pregnancy. *BMJ*. 1991;**302**(6789):1361-5
11. Regassa N. Estimating the Fecundability and Average Conception Wait of Women among Low Contraceptive Tribal Community of Southern Ethiopia. *Studies of Tribes and Tribals. Kamla - Raj*. 2007;**5**(2):103-11.
 12. Yildizhan R, Adali E, Kolusari A, Kurdoglu M, Yildizhan B, Sahin G. Domestic violence against infertile women in a Turkish setting. *International Journal of Gynecology & Obstetrics*. 2009;**104**(2):110-2.
 13. Boivin J, Bunting L, Collins JA, Nygren KG. International estimates of infertility prevalence and treatment-seeking: potential need and demand for infertility medical care. *Human Reproduction*. 2007;**22**(6):1506-12.
 14. Oakley L, Doyle P, Maconochie N. Lifetime prevalence of infertility and infertility treatment in the UK: results from a population-based survey of reproduction. *Human Reproduction*. 2007;**23**(2):447-50.
 15. Chandra A, Martinez GM, Mosher WD, Abma JC, Jones J. Fertility, family planning, and reproductive health of US women; Data From the 2002 National Survey of Family Growth. 2005.
 16. Abiodun O, Balogun O, Fawole A. Aetiology, clinical features and treatment outcome of intrauterine adhesion in Ilorin, Central Nigeria. *West African Journal of Medicine*. 2007;**26**(4):298-301.
 17. Obuna J, Ndukwe E, Ugboma H, Ejikeme B, Ugboma E. Clinical Presentation of Infertility in an Outpatient Clinic of a Resource Poor Setting, South-East Nigeria. *International Journal of Tropical Disease & Health*. 2012;**2**(2):123-131.
 18. Adeyemi A, Adekanle D, Afolabi A. Pattern of gynaecological consultations at Ladoke Akintola University of Technology Teaching Hospital. *Nigerian Journal of Clinical Practice*. 2009;**12**(1):47-50.
 19. Panti AA, Sununu YT. The profile of infertility in a teaching Hospital in North West Nigeria. *Sahel Medical Journal*. 2014;**17**(1):7-11.
 20. Dunson DB, Baird DD, Colombo B. Increased infertility with age in men and women. *Obstetrics & Gynecology*. 2004;**103**(1):51-6.
 21. Dattijo L, Andreadis N, Aminu B, Umar N, Black K. Knowledge of infertility among infertile women in Bauchi, Northern Nigeria. *International Journal of Women's Health and Reproduction Sciences*. 2016;**4**(3):103-109.
 22. Ali S, Sophie R, Imam AM, Khan FI, Ali SF, Shaikh A, et al. Knowledge, perceptions and myths regarding infertility among selected adult population in Pakistan: a cross-sectional study. *BMC Public Health*. 2011;**11**(1):760.
 23. Audu BM, Massa AA, Bukar M. Clinical presentation of infertility in Gombe, North-eastern Nigeria. *Tropical Journal of Obstetrics and Gynaecology*. 2003;**20**(2):93-6.

24. Scott R, Opsahl M, Leonardi M, Neall G, Illions E, Navot D. Infertility: Life table analysis of pregnancy rates in a general infertility population relative to ovarian reserve and patient age. *Human Reproduction*. 1995;**10**(7):1706-10.
25. Koster W. Linking two opposites of pregnancy loss: Induced abortion and infertility in Yoruba society, Nigeria. *Social Science & Medicine*. 2010;**71**(10):1788-95.
26. Okonofua FE. Induced abortion: a risk factor for infertility in Nigerian women. *Journal of Obstetrics and Gynaecology*. 1994;**14**(4):272-6.
27. Etuk SJ, Itam I, Asuquo E. Morbidity and mortality in booked women who deliver outside orthodox health facilities in Calabar, Nigeria. *Acta Tropica*. 2000;**75**(3):309-13.