■ Original Article ■

Perceptions of Infertility - A Survey of Urban Residents in Port Harcourt

1. **Dr. Ikimalo J.** MBBS, DRH (Liverpool), FWACS, FICS, 2. **Dr. Babatunde S.** MB BS, PgCert Epid (Liverpool), FWACP

1. Department of Obstetrics and Gynaecology, 2. Department of Preventive and Social Medicine
College of Health Sciences, University of Port Harcourt, Port Harcourt

ABSTRACT

OBJECTIVE: Societal influence on infertile couples usually stems from what is known or perceived about the causes, risk factors and treatment of infertility in the population. This study aimed to investigate perceptions of infertility among urban residents of Port Harcourt.

MATERIALS AND METHODS: A cross-sectional, household-based survey was conducted in the Borikiri area of Port Harcourt in 2003. A sample of 150 adults, aged 20 years and above was drawn by multi-staged random sampling involving the selection of streets, houses, households and finally individuals, as sampling units at different stages. Households were visited over a period of two days, and all eligible subjects were interviewed using a pre-tested, interviewer-administered, structured questionnaire.

RESULTS: Sixty (40.0%) of the respondents were females; 105 (70%) were 20-29 years; 58.7% were unmarried; and 66.7% possessed tertiary education. Only 48 (32.0%) correctly identified a three-fold medical definition of infertility (x^2=38.88, *p-value*=0.00). Between 88% and 100% were aware of a selection of factors perceived to increase the risk of infertility. About two-thirds (93, 63.3%) felt that a woman was more likely to be responsible for infertility. Majority, 106 (70.7%) were aware of In-vitro Fertilization, and 92 (61.3%) knew of Artificial Insemination by Husband and Artificial Insemination by Donor respectively. Over 80% were in support of Artificial Insemination by Husband and In-vitro Fertilization, but only about 25% and 10% supported Adoption and Artificial Insemination by Donor, respectively.

CONCLUSION: Our study showed that most of Port Harcourt residents' perception of the definition of infertility differed from its commonly used medical context. However many recognized some known risk factors of infertility and were aware of assisted reproductive technologies. But they were selective in the options they support. Patients' level of knowledge and differences in perceptions between a biomedical and lay concept of infertility are important for health workers' management decisions.

KEYWORDS: Infertility, Perception, Urban subjects, Port Harcourt, Nigeria

INTRODUCTION

The WHO defines infertility as the inability of a couple to achieve conception despite regular, unprotected vaginal intercourse for at least one year.[1] The commonest of causes vary; while ovulation disorders are common in the western world, tubal infertility dominates in Africa.[2] Existing evidence suggests that 40% of causes are attributable to female factors, 30% are due to male factors, 20% are a combination of both, and the remaining 10% are due to unknown causes.[3]

Estimates around the world indicate that between one-tenth and two-fifth of couples in the childbearing age experience infertility.[4] In sub-Saharan Africa, 30-40% of women would complete their reproductive years without having a child,[5,6] while in Nigeria, the infertility rate vary from 20-45% in the reproductive age group.[7]

Infertility is as much a social challenge as it is a medical problem. Many couples experiencing infertility suffer psychological stress which is not usually without the strong influences of the social, cultural and religious settings in which they live.[8,9] In Nigeria, members of the extended family are a usual source of psychosocial pressure that may result in marital disharmony, divorce and polygamy.[9] Such societal influence usually stems from what is known or perceived about infertility; its causes, risk factors and treatment among the general population. For instance, when there is a generally poor or incomplete knowledge of infertility, the societal attitude would be fixed and could be one of fault finding.[9] In the same vein, medical assisted reproductive technology is less accepted and sought out when people have little understanding of the biomedical perspective of infertility.[10-12] This study aimed to investigate perceptions of infertility among urban residents in a densely populated area of Port Harcourt.

METHODOLOGY

A cross-sectional, household-based survey was conducted in Borikiri, a densely populated area of Port Harcourt in Rivers State, Nigeria in 2003. A sample size of 150 respondents aged 20 years and over was calculated using STATCALC in Epi-Info version 6.04d[13] at a set margin of sampling error of 10%; 1- set at 95%; and an adjustment for non-response at 10%. The subjects were selected following a multi-staged random sampling. At the first stage, a street of houses was selected by simple random sampling from the list of fairly well-arrayed network of streets in Borokiri. At the second stage, a systematic random sampling of houses was conducted from the houses on the selected street.

(Houses in this area of Port Harcourt have orderly and visible numberings by the City Council; the last house number on the street tallied with the total number of houses). Next, a household was enumerated in each selected house, and a simple random sampling was done to choose one household where there was more than one. Finally, all eligible persons in the selected households were interviewed. All the subjects consented, and were interviewed using a pre-tested, interviewer-administered, structured questionnaire on their socio-demographic characteristics, and knowledge and attitude regarding infertility. Data was analyzed by computer using Epi-Info version 6.04d statistical software.[13] Chi-squared test was used to compare proportions at the significant level of 0.05.

A three-fold definition of infertility was used for the assessment of respondents' perception of the medical context of infertility. The definition was a slight adaptation of the WHO's working definition, and was rendered as "*inability to conceive by a couple* (and not just an individual), despite *regularity* (three times per week) *of unprotected, vaginal intercourse* after a *year duration*". Respondents were prompted during the interviews to find out whether they could identify all or only parts of the definition as infertility. They were also prompted to indicate whether or not they perceived a selection of *possible risk factors for infertility* as 'causes' of infertility.

RESULTS
Socio-demography
All the 150 adults consented and were interviewed; 90 (60.0%) were males, and the rest 60 (40.0%) were females.

Table 1: Socio-demographic Characteristics of Respondents

Socio-demographic Characteristics	n=150%	%
Age Group		
20–29	105	70.0
30–39	24	16.0
40–49	19	12.7
50–59	2	1.3
X^2(p-value)	225.46 (0.000)	
Marital Status		
Single	88	58.7
Married	44	29.3
Separated	8	5.3
Live-in	10	6.7
X^2(p-value)	222.67 (0.000)	
Education		
None	8	5.3
c	0	0.0
Secondary	42	28.0
Tertiary	100	66.7
X^2(p-value)	220.55 (0.000)	

The age distribution is shown in Table 1: most of the respondents, 105 (70%), were between 20 and 29 years; while the 30-39 age group accounted for 18.5%; and the rest (12.0%) were 40-59 years. Chi-squared test showed the difference in the proportions to be statistically significant (*p-value*=0.000). Less than half of them (41.3%) were married, separated or living with a partner, while 58.7% were single, never married (x^2=222.67, *p-value*=0.00). Two-thirds of the study subjects (66.7%)

reported having tertiary level of education, 28.0% had secondary, and the remaining 5.3% had no education at all (Table 1); chi-squared test showed the differences to be statistically significant (x^2=220.55, *p-value*=0.00). All of the respondents reported that they were Christians.

Knowledge of infertility
Only 48 (32.0%) provided a definition of infertility in its commonly used medical context, that is, as *inability to conceive by a couple* (and not just an individual), despite a *regularity of intercourse* of 3 times per week, and for up to a *1-year duration*. The rest 102 (68.0%) only identified this definition in part as infertility; the difference in the proportions was statistically significant (x^2=38.88, *p-value*=0.00).

A large number of the respondents perceived several of the selected *possible risk factors for infertility* as 'causes' of infertility as shown in Table 2. Virtually all of the medically known risk factors of infertility were correctly identified by majority of them (88%-100%). Commonly misconceived factors such as 'witchcraft' were also correctly identified as improbable 'causes' by most of the respondents. However, 8 persons (5.3%) responded that "wearing tight underwear by men" constituted a risk for infertility.

Table 2: Level of perception of possible causes of infertility

Possible Cause of Infertility	n=150 (%)
Promiscuity (risky sexual behaviour)	150 (100.0)
Abnormalities of reproductive organ	140 (93.3)
Medical disease/operation	140 (93.3)
Excessive drinking	135 (90.0)
Excessive smoking	135 (90.0)
Sexually Transmitted Infections	133 (88.7)
Previous abortion	133 (88.7)
Unknown	110 (73.3)
Men wearing tight underwear	8 (5.3)
Curse from witchcrafts/enemies	7 (4.7)
Punishment from God	3 (1.4)
Getting married to a relative	0 (0.0)

Respondents' *awareness of medical treatment options* was also investigated: majority of them were aware of Assisted Reproduction options (see Figure 1). Out of the 150 respondents; 106 (70.7%) indicated that they were aware of In-Vitro Fertilization (IVF); and 92 (61.3%) were aware of Artificial Insemination by Husband (AIH) and by Donor (AID), respectively. Half of them, 76 (50.7%), knew of surgical therapy; while 114 (76.0%) knew of Drug therapy.

Figure 1: Awareness of Infertility Treatment Options
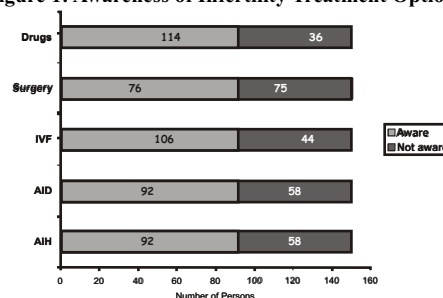
AIH=Artificial Insemination by Husband, IVF=In-vitro fertilization, AID=Artificial Insemination by Donor

The results revealed that the media were the commonest

source of information on infertility; it accounted for 76.7% of the responses, while relatives, hospital and neighbours were mentioned by 14.7%, 5.3% and 3.3% of the respondents, respectively (x^2=226.50, *p-value*=0.00).

Attitudes to Infertility and Treatment Options
Information obtained on attitude is given in Figure 2, which shows the graded responses of respondents to acceptability of available infertility treatment options. Over 80% *supported/strongly supported* Artificial Insemination by Husband (AIH) and In-Vitro Fertilization (IVF), while 25.3% and 8.7% *supported/strongly supported* Adoption and Artificial Insemination by Donor (AID) respectively. No one supported Surrogacy as an option for infertility.

Figure 2: Attitudes towards infertility treatment options

AIH=Artificial Insemination by Husband, IVF=In-vitro fertilization, ET=Embryo Transfer, AID=Artificial Insemination by Donor
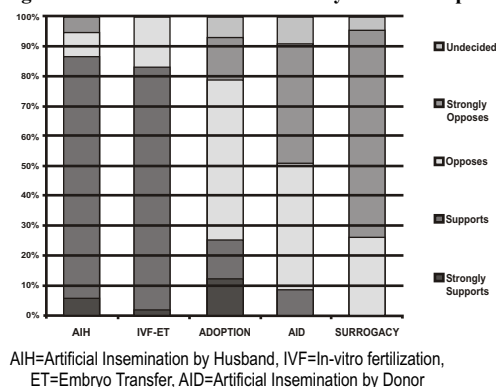
About two-thirds (63.3%) of 148 study subjects reported that the woman was likely to be responsible for infertility compared to 22 (14.7%) and 32 (21.3%) who mentioned the man and both sexes, respectively. Chi-squared test showed the difference in the proportions to be statistically significant (x^2=92.51, df=2, *p-value*=0.00).

DISCUSSION
The respondents in this study were mostly unmarried, educated young male adults, who represented the emergent persons of the typical resident of certain quarters of urban Port Harcourt. At the time of the study, blue-/white-collar job offers by the burgeoning oil and gas industry was an attraction for this group of persons. This may have also contributed to the reason why this group of respondents was largely observed. Only about one-third (32%) of the study subjects identified infertility in its commonly used medical context, despite the reported high level of formal education. A higher percentage of respondents in an international survey in Europe, Australia and US correctly identified infertility as defined by the WHO, [14] whereas lower percentages were reported among urban South African women.[10] Information on whether or not members of the community appreciate or accept the definition of infertility in the medical context is important for determining why people seek medical treatment or alternatives.

However, the relevance of a good knowledge of the medical perspective of infertility could be undermined by whether or not people perceive that there could be medically plausible causes for infertility. From our study, most of the respondents, between 88% and 100%, recognized some known risk factors of infertility as possible causes. Only a small percentage perceived infertility as a punishment from God or as a curse from enemies or witchcraft; incidentally all our study subjects were Christians. A study conducted in Gambia showed that respondents had little understanding of medical issues surrounding infertility.[11] Reproductive tract infection, for instance, was rarely spontaneously mentioned as a cause of infertility in another study in Ghana.[15]

It is noteworthy that even when the perceptions of infertility and its causes are favourably disposed towards medical reasoning, acceptance of available treatment options by the larger society is of equal importance. Our respondents demonstrated a high level of awareness of Assisted Reproduction options especially of Artificial Insemination (61%) and IVF (71%). However, while up to 80% were in support of IVF and AIH respectively, they opposed AID and adoption by almost the same margin.

The dichotomies between urban/rural cultures may influence residents' perceptions of infertility and its causes, as well as acceptance of the available options. Onah and Ogbuokiri[16] also reported that over two-thirds of subjects in an urban study preferred child adoption to traditional management options such as adultery, polygamy, surrogacy, couple remaining childless and divorce and remarriage. Another study in China reported that the impact of infertility was more among people from rural areas.[8] Arguably some issues surrounding treatment options such as AID and Surrogacy may be contested on the grounds of ethics, but opposition to adoption underscores the weight of the underlying psychosocial conundrums to the subject of infertility and what could be done about it.

Health workers need to be aware of patients' level of knowledge of infertility and differences in perceptions between a biomedical and lay concept of infertility. Such differences are important in understanding people's preferences and health-seeking practices.[12] As the doctor managing an infertile couple strives to achieve the goals of accomplishing a thorough investigation and treating abnormalities detected to achieve conception, the plan must include the provision of emotional support. It thus becomes important for the doctor to appreciate that he/she is treating people with infertility and not just infertility, and must consider discussing the chances of success of every treatment and helping the couple to carefully weigh those options.

The medical community must constantly bear in mind that as it strives to find solutions to the problem of infertility, recent astounding successes will only make a difference if they are matched by giant strides in efforts to manage the infertile couple's social environment.

REFERENCES

1. World Health Organization. Recent advances in medically assisted conception. Technical Report Series No. 820. Geneva: WHO. 1995.
2. Cates W. Sexually transmitted diseases and infertility: emerging findings. Abstr Intersci Conf Antimicrob Agents Chemother, 1999 Sep 26-29; 39: 760.
3. Cedars M and Jaffe RB. Infertility and Women. *The Journal of Clinical Endocrinology & Metabolism*, 2005; 90 (4): 0.
4. Emslie C, Grimshaw J and Templeton A. Do clinical guidelines improve general practice management and referral of infertile couples? Br. Med. J., 1993; 306: 1728-1731.
5. Leke RJI, Oduma JA, Bassol-Mayagoitia S, Bacha AM and Grigor KM. Regional and geographical variations in infertility: effects of environmental, cultural and socioeconomic factors. *Environ. Health Perspect.*, 1993; 101 (Suppl. 2), 73-80.
6. Larsen U. Primary and secondary infertility in sub-Saharan Africa. *International Journal of Epidemiology,* 2000; 29: 285-291.
7. Adetoro OO and Ebomoyi EW. Prevalence of infertility in a rural Nigerian community. African *Journal of Medicine and Medical Sciences*, 1991; 20: 23-27.
8. Xu L, Ke HX, He FF. Psychological aspects of infertile couples in Chi*na. Zhonghua Fu Chan Ke Za Zhi,* 1994 Apr; 29(4): 232-4.
9. Okonofua F, Harris D, Odebiyi A, Kane T and Snow RC . The social meaning of infertility in Southwest Nigeria. *Health Trans Review*, 1997; 7: 205-220.
10. Dyer SJ, Abrahams N, Hoffman M, and van der Spuy ZM. Infertility in South Africa: women's reproductive health knowledge and treatment-seeking behaviour for involuntary childlessness. *Human Reproduction*, 2002; 17 (6): 1657-1662.
11. Sunby J, Mboge R and Sonko S. Infertility in the Gambia: frequency and health care setting. *Soc Sci Med* 1998; 46: 891-899.
12. Atkinson SJ and Farias MF. Perceptions of risk during pregnancy amongst urban women in Northeast Brazil. *Soc Sci Med* 1995; 41 (11): 1577-86.
13. Dean AG, Dean JA, Coulombier D, Brendel KA, Smith DC, Burton AH, Dicker RC, Sullivan K, Fagan RF, Arner TG. Epi Info, Version 6: A Word-Processing, Database, and Statistics program for Public Health on IBM-compatible Microcomputers. Centers for Disease Control and Prevention, Atlanta, Georgia, U.S.A. 1998.
14. The Bertrelli Foundation Scientific Board. Public perception on infertility and its treatment: an international Survey. *Human Reproduction,* 2000; 15 (2): 330-334.
15. Geelhoed DW, Nayembil D, Asare K, Schagen van Leeuwen JH, van Roosmalen J. Infertility in rural Ghana. *International Journal of Gynaecology & Obstetrics,* 2002; 79 (2): 137-42.
16. Onah HE and Ogbuokiri CM. The knowledge and attitude of fertile and infertile Nigerians regarding adoption. *International Journal of Gynaecology & Obstetrics,* 2002; 79 (3): 279-280.