Prevalence of Infertility Among Women of Childbearing Age Attending Selected Clinics in Enugu State

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Abstract

The purpose of this study was to determine the prevalence of infertility among women of childbearing age in selected clinics in Enugu State from 2006-2015. Three research questions were raised to guide the study. The descriptive survey research design was used for the study. The instrument for data collection was a researcher designed female infertility prevalence proforma. The population for the study consisted of all women of childbearing age with infertility who reported in four health facilities used for the study from 2006-2015. This gave an estimated population of 7,463 women. Data collected from the women's health records at the health facilities were used for analysis. Frequencies and percentages were used to answer the research questions. The result of the study showed that the highest prevalence of infertility was recorded in 2009 (1,274) 17.1% while the lowest prevalence of infertility was in 2006 (529) 7.1%. The highest prevalence rate was in 2012 (214.0 per 1000) while the lowest prevalence rate was in 2006 (101.8 per 1000). Prevalence of infertility was highest in age group 25-34 years (48.96%) and lowest in age group 45 years and above (41.7%). It was therefore recommended that there is urgent need for health educators, government, non-governmental agencies and health care providers to sensitize women on the need for early treatment of reproductive health problems, STIs and other chronic health problems which are likely to affect their ability to conceive and have children. Awareness should be created for women on proper post-natal care to avoid infection.

Keywords: Infertility, Prevalence, women of Childbearing Age.

Introduction

The inability to conceive and bear children after marriage causes considerable personal suffering and disruption of family life. Infertility has been recognized as a major public health problem worldwide (World Health Organization [WHO], 2004). Cui (2010) stated that infertility is as critical component of reproductive health and has often been neglected in the effort to improve maternal and child health care in the past decade. Worldwide, infertility is generally quoted as occurring in 8-12% of couples (Inhorn, 2003). World Health Organization (2004) estimated that one in every four couples translating into more than 186 million married women in developing countries have been found to be affected by infertility. The estimated values vary from region to region. Despite the variation, the burden of infertility remains high. World Health Organization (2012) report showed that the overall burden of infertility in women from 190 countries has remained similar in estimated levels and trends from 1990 to 2010. Boivin, Buntingl, Collins, and Nygren (2007) gave a larger

estimate of worldwide infertility as occurring in 10-18% of married couples. Both developed and developing countries share in this burden of infertility.

In developed countries like Turkey, prevalence of infertility ranges from 3.2 to 20% (Rutstein & Igbal, 2004). The United States National centre for Chronic Disease Prevention and Health Promotion (NCDPHP) (2016) stated that about 6% of married women 15-44 years are affected by infertility. In England, the prevalence of infertility is also about 6% (NCDPHP, 2016). Developing countries in Africa share the largest burden of infertility in the world (Okonofua, 2003). Okonofua stated that estimates of prevalence indicate an average of 10.1% to 32% in some countries and ethnic groups within Africa. In addition, Ombelet, Cooker, Dyer, Serour, and Devrorey (2008) reported that prevalence of infertility ranges from 9% in Gambia to about 30% in Nigeria.

Many studies have been carried out in some parts of Nigeria with varying estimates of female infertility prevalence. In a South Western community in Nigeria, it was reported that 51.5% of all gynaecological admissions were cases of infertility (Sule, Eriagbali & Enuom, 2008). In South Eastern Nigeria, infertility prevalence of 5.5% was reported by Ugwu, Onwuka, and Okezie (2012), while Panti and Sununu (2014) reported 15.7% in North Western Nigeria. Several reports indicated that infertility is the most frequent reason for gynaecological consultations in Nigeria (Okohue, Onuh & Ikimalo, 2013).

There is no common definition for female infertility. Larsen (2005) defined infertility as the absence of live birth in a sexually active non-contracepting woman. In the United Kingdom, the National Institute for Clinical Excellence Guidelines (NICE) (2014) defined infertility as failure to conceive after regular unprotected sexual intercourse for 2 years in the absence of known reproductive pathology. Infertility is of two types-primary infertility and secondary infertility. Primary infertility is defined as absence of live birth for women who desire a child and have been in a union for at least five years, during which they did not use any contraceptive (Mascarenhas, Flaxman, Boerma, Vanderpoel & Stevens, 2012). World Health Organization (2016) classified a woman as having primary infertility if she is unable to bear a child, either due to inability to become pregnant or inability to carry a pregnancy to a live birth. Secondary infertility is defined as the inability to conceive despite exposure to sexual intercourse for one or two years after having conceived at least once before (Lunenfeld & Vansteirteghem, 2004). The detrimental effect of infertility on women, their families and the whole society cannot be overemphasized. If there is a public health strategy focusing on prevention, there will surely be a reduction in the prevalence of infertility.

Prevalence is one of the measures used by epidemiologists and health care providers to determine and describe the distribution and extent of health conditions as it affects each locality. Onwuasigwe (2010) stated that prevalence of a disease is the number of people in a population that have a disease at a given period (old and new cases). The author further defined prevalence rate as the total number of cases of diseases existing in a population divided by the total population multiplied by one thousand. The total number of women who

reported at the gynaecological units of the health facilities shall serve as the numerator for ascertaining the prevalence and prevalence rate in the present study.

Prevalence measurement has been dichotomized into two domains the point prevalence and the period prevalence (Onwuasigwe, 2010). Point prevalence measures the probability of people having a disease at one particular point in time such as a day, several days or even weeks while period prevalence measures the number of people that have a disease within a given period of time such as annual prevalence expressed in relation to a defined population. Gerstman (2003) gave the formular for measuring period prevalence as the total number of existing cases during a specified period divided by the total population at mid-point interval expressed in percentage.

Period prevalence is deemed appropriate for this study as it will be used to determine the total number of infertility cases among women of child bearing age within the whole study period (2006-2015).

Women of childbearing age (WCBA) are called women of reproductive age. Collins, Duffield & Myatt (2000) defined WCBA as the percentage (or number) of women aged 15-49 years. Women of childbearing age in this study refer to women aged between 15-49 years in Enugu State who have reported inability to achieve pregnancy after about 12-24 months of marriage and those who had been pregnant before but now are unable to achieve pregnancy. Therefore, the study will determine the prevalence of infertility among women of childbearing age who reported in selected hospitals in Enugu State. Three research questions will guide the study.

Purpose of the study

The purpose of this study was to determine prevalence of infertility among women of childbearing age (WCBA) attending selected fertility clinics in Enugu State. Specifically, the study sought to determine:

1. Prevalence of infertility among women of childbearing age in Enugu State from 2006-2015.
2. Prevalence rate of infertility among women of childbearing age in Enugu State.
3. Prevalence of infertility among women of childbearing age in Enugu State based on age.

Research questions

The following research questions guided the study:

1. What is the prevalence of infertility among women of childbearing age in Enugu State from 2006-2015?
2. What is the prevalence rate of infertility among women of childbearing age in Enugu State?
3. What is the prevalence of infertility among women of childbearing age in Enugu State based on age?

Method

The descriptive survey research design was used for the study. The population for the study consisted of all women of childbearing age who attended infertility clinics in some selected hospitals within the period of study. The hospitals include the University of Nigeria Teaching Hospital (UNTH) Enugu, Enugu State University Teaching Hospital (Parklane) and two private hospitals-Blessed Assurance Hospital Enugu and Christian Miracle Hospital Enugu. The information on infertility was assessed via the women's folders. A researcher-structured Female Infertility Prevalence Proforma (FIP) was the instrument for data collection. The face validity of the research instrument was established by five experts in Health Education. The proforma did not undergo reliability test since it was only a document that contains indicators of how to extract data from the health records. The data generated with the proforma was analysed using the statistical package for social sciences (SPSS) version 21. Frequencies and percentages were used to answer research questions.

Results

Table 1: **Prevalence of infertility among women of childbearing Age from 2006-2015 (n = 7,463)**

Year	f	%
2006	529	7.1
2007	695	9.3
2008	783	10.5
2009	1,274	17.1
2010	716	9.6
2011	581	7.8
2012	693	9.3
2013	730	9.8
2014	657	8.8
2015	805	10.8
Total	**7, 463**	**100**

Data in Table 1 showed that a total of 7,463 infertility cases were recorded from 2006-2015. The highest prevalence (1,274, 17.1%) was recorded in 2009 followed by 2015 (805, 10.8%). In 2008, a prevalence of (783, 10.5%) was also recorded. The lowest prevalence (529, 7.1%) was recorded in 2006.

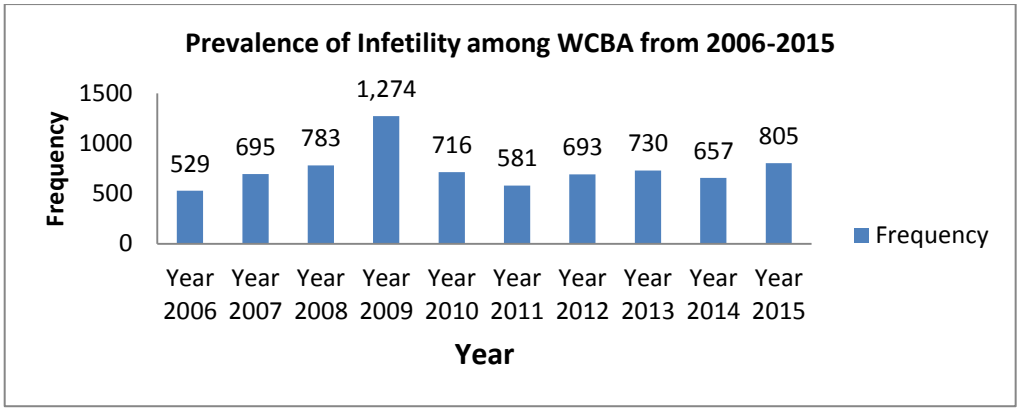

Figure 1: Bar Chart showing Prevalence of Infertility among WCBA from 2006-2015.

The bar chart showed that the highest prevalence of 1, 274 cases of infertility was recorded in 2009 while the lowest prevalence of 529 cases of infertility was recorded in 2006.

Table 2: **Prevalence rate of infertility among women of childbearing Age in Enugu State from 2006-2015 (n = 7,463).**

Year	n	F	PR(Per1000)
2006	5,198	529	101.8
2007	5,263	695	132.1
2008	5,845	783	134
2009	6,518	1,274	195.5
2010	4,206	716	170.2
2011	2,864	581	202.9
2012	3,238	693	214.0
2013	3,674	730	198.7
2014	3,408	657	192.8
2015	5,858	805	137.4
Total	**46,072**	**7,463**	

Key: PR- Prevalence Rate

Data in Table 2 showed that the prevalence rate of infertility was highest (214.0 per 1000) in 2012, followed by 2011 (202.9 per 1000). However, the lowest prevalence rate (101.8 per 1000) was recorded in 2006.

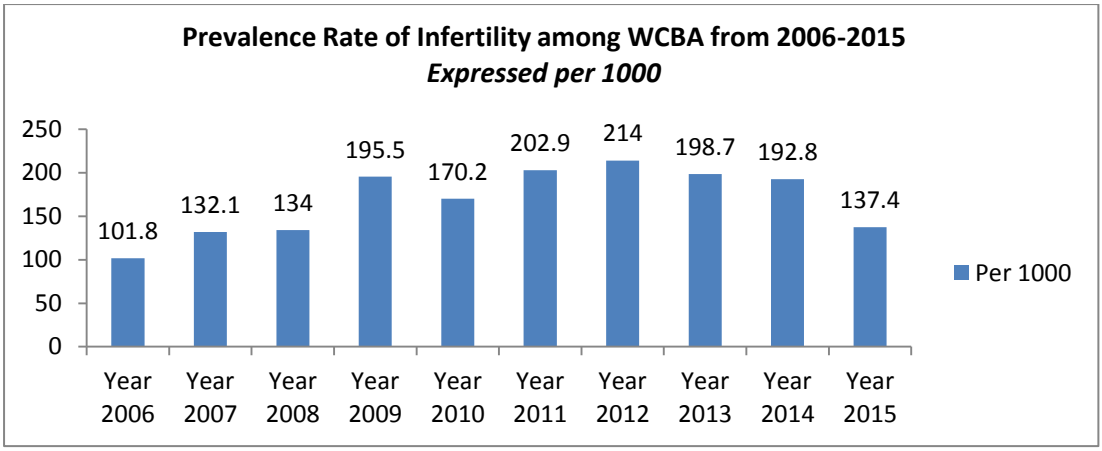

Figure 2: Bar Chart showing Prevalence rate of Infertility among WCBA from 2006-2015.

The bar chart showed that the highest prevalence rate of 214 per 1000 women occurred in 2012 while the lowest prevalence rate of 101.8 per 1000 women occurred in 2006.

Table 3: **Prevalence of infertility among women of childbearing age in Enugu State based on Age (n = 7, 463)**

	AGE			
Year	**15-25 yrs n = 399 f (%)**	**25-34 yrs n =3, 716 f (%)**	**35-44 yrs n = 3,027 f (%)**	**45 & above n = 331 f(%)**
2006	26 (4.9)	255 (48.1)	231 (48.6)	17 (3.2)
2007	34 (4.9)	309 (44.5)	310 (44.6)	42 (6.0)
2008	45 (5.7)	427 (54.5)	271 (34.6)	40 (5.1)
2009	73 (5.7)	684 (53.7)	469 (36.8)	48 (3.8)
2010	43 (6.0)	389 (51.5)	277 (38.7)	27 (3.8)
2011	12 (2.1)	260 (44.8)	264 (45.4)	45 (7.7)
2012	38 (5.6)	312 (45.7)	312 (45.7)	21 (3.1)
2013	42 (5.8)	352 (48.2)	315 (43.2)	21 (2.9)
2014	48 (7.3)	291 (44.3)	284 (43.2)	34 (5.2)
2015	38 (4.7)	437 (54.3)	294 (36.5)	36 (4.5)
Average	**5.27**	**48.96**	**41.73**	**4.53**

Data in table 3 showed that prevalence of infertility among WCBA was highest in age group 25-34years (48.96%) followed by age group 34-44years (41.73%) while the lowest prevalence was found in age group 46years and above.

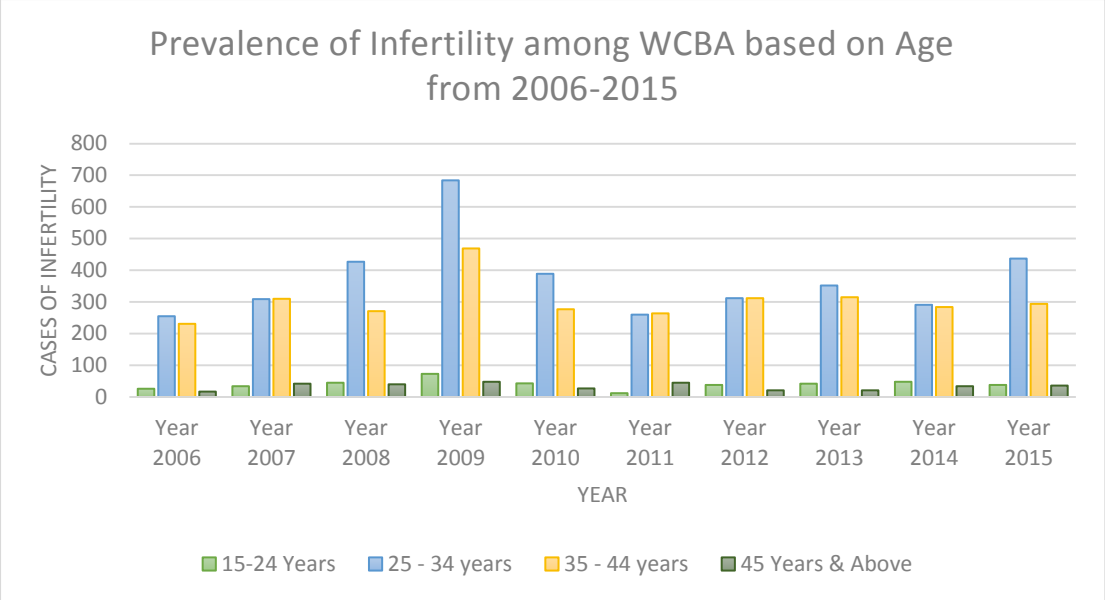

Figure 3: Bar Chart showing Prevalence of Infertility among WCBA from 2006-2015.

The bar chart showed that the highest prevalence of infertility occurred in age group 25-34 years in 2009 while the lowest prevalence of infertility occurred in age group 45 years & above in 2006.

Discussion

Result in Table 1 showed that the highest prevalence (1, 274, 17.1%) of infertility among WCBA was in 2009 while the lowest was in 2006 (529, 7.1%). The increase in the prevalence of infertility was not surprising because of increase in the level of exposure of women to the various risk factors for infertility. The result is in line with Leonard (2002) who stated that infertility is on the increase in women because of the increasing exposure of women to sexually transmitted infections such as Chlamydia which sadly may have no symptoms until the infection have spread up from the cervix through the womb to the fallopian tubes causing inflammation and scarring, leading to infertility. The high prevalence may also be attributed to increase in sexual exploitation by young people also leading to increase in sexually transmitted infections, delay in marriages because more women want to be established in their careers before starting a family. Thus, the chances of conceiving are reduced as the woman's age increases. The finding of the study is similar to that of Tracy, Jocelynn, Cook, Albert, Suzanne and John (2013) which showed an increase in infertility prevalence in Canada. Result in Table 2 revealed that the highest prevalence rate of infertility among WCBA was recorded in 2012 (214 per 1000) while the lowest prevalence rate was in 2006 (101.8 per 1000). This result was not surprising in view of the available literature Sule, Erigbali and Eruom (2008) reported that in Osun State prevalence rate of infertility increased to (57.5%) when compared to the research conducted by Okonfua in 1995 in the same

locality which was (19.5%). In support of this finding, Rutstein and Igbal (2004) reported that the regions with the highest rates of infertility were Eastern Europe, North Africa, the Middle East, Oceania and Sub-Saharan African. This high prevalence rate may be attributed to late marriages and increase prevalence of reproductive health problems.

Result in Table 3 showed that prevalence of infertility was highest in age group 25-34 years (48.96%) while the age group 45 years and above had the lowest prevalence (4.53%). The result was not surprising as it agrees with available literature. Olugbenga, et al (2014) reported that in tertiary institutions in south-western Nigeria prevalence of infertility among WCBA was highest in age group 25-34 years (44.4%) while the lowest prevalence was in 15-24 years (8.09%). The reason for this high prevalence at 25-34 years could be that at 25-34 years majority of the women had married and were more concerned about their fertility hence their increased presentation at the fertility clinics. The low prevalence among age group 45 years and above could be that at that age, many women may have lost hope of conceiving and may not find it necessary to visit the hospital. Result in Table 4 revealed that secondary infertility (5017, 67.7%) was more common than primary infertility (2,446, 32.3%). The result was not surprising as it agrees with available literature. Ekwere, et al (2007), reported that in Calabar, primary infertility was found in 34.5% of females while secondary infertility was found in 65%. The result is also in consonance with Ugwu, Onwuka and Okezie (s2s012) who also reported that in UNTH primary infertility accounted for 23.2% while secondary infertility accounted for 76.8% of infertility cases. The high prevalence of secondary infertility suggests that the outcome of the last pregnancy may play an important role in the ability of a client to achieve future pregnancies. Sexually transmitted infections, non-availability of safe abortion services and poor maternal health services especially during childbirth may predispose a woman to secondary infertility. This implies that if STIs are prevented or properly treated, and good maternal health services and safe abortion services are provided the prevalence of infertility will be reduced. However, the result of the study does not agree with Chimachanya and Suangkawatin (2008) who reported that primary infertility (61.8%) was more common than secondary infertility (35.6%). This could be as a result of improved health care services in developed countries.

Conclusion

On the basis of the findings and discussions, the following conclusions were drawn: overall infertility cases of 7, 463 were recorded among WCBA in Enugu State from 2006-2015. The highest prevalence was in 2009 while the lowest prevalence was in 2006. Prevalence of infertility was highest in age group 25-34 years while the lowest was in age group 45 years and above.

Recommendation

Based on the findings and conclusions of this study, the following recommendations were made. Since infertility is on the increase there is urgent

need for government, non-governmental agencies and health care providers to carry out health education to sensitize women on the need for early treatment of reproductive health problems, STI and other chronic health problems which are likely to affect their ability to have children when they desire to do so.

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