Original Research Article

Infertility: Age, And Gender Differences among Infertile Couples Attending Fertility Clinic in Federal Medical Centre, Owerri

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Abstract

This research study was conducted in Federal Medical Centre, Owerri Imo State, precisely at the fertility clinic of the hospital. The copies of the validated questionnaire were administered by the researcher to the respondents at the area of the study. 67 questionnaires were distributed, completed and all collected back. This resulted to a 100% return rate. The process took 4 days. The collected data was analyzed using a descriptive statistics of frequencies, percentages and mean scores as well as cumulative or cluster mean scores. The frequencies and percentages were used on cluster 1and 3 while mean scores and cluster mean scores were used on cluster 2. The data revealed that 58 respondents representing 86.6% responses majorly agreed that infertility is the inability of a couple to conceive after one year of regular sexual intercourse whereas the rest 9 respondents, representing 13.4% showed different understandings. Also in item No.2, 38 respondents representing 56.7% responses accepted that hormonal imbalance is the most common cause of infertility in females while the remaining 29 respondents or 43.3% response expressed other views. At the same instant 26 respondents or 38.8% responses expressed undescended testis as the most common cause of infertility in men whereas 61.2% responses collectively maintained that either low sperm count, ejaculatory dysfunction or prostate cancers may be the causes of infertility in men. In item No. 4 a total of 36 respondents or 53.7% responses showed that they have never gotten a child of their won while the rest expressed they have one, two or three children of their own respectively. Furthermore, expressing the number of years of infertility experience, 25 respondents representing 37.3% response said they have had 6 to 7years infertility experience whereas the rest said they have had between 0-2years, 3-5 years, and 8years above, infertility experience. In item 6, a total of 49(or 73.1%) response reveals that they have had miscarriages before but 18(or 9%) said No. From statistics, age and gender have significant relationship as far as infertility is concerned. While infertility is seen to occur more in people of the age cohort 30-35 years, it is observed that women are more vulnerable than men.

Keywords: Infertility, age, and gender differences among infertile couples.

INTRODUCTION

Globally, infertility is a reproductive health issue that has been neglected, but still affects majority of families and is one of the leading cause of broken homes as seen today in Nigeria and beyond. Having children is of utmost importance from religious, historical, and cultural aspects of life and can be a reason for divorce (Vizheh *et al.,* 2015). Marriage which fails to produce children sometimes may end in divorce (Rasak and Oladipo, 2017). The population of the world has been on increase an evidence of high fertility trends. The joy of every marriage is for the couple to procreate and raise children of their own. Globally infertility affects about one in six couples and it affects developing countries than developed ones (Olugbenga *et al.,* 2014).

Infertility is defined as the failure to achieve clinical pregnancy after 12months or more of regular unprotected sexual intercourse (Panti & Sununu, 2014). According to Uadia and Emokpae (2015), infertility also includes the inability to carry a pregnancy to the delivery of a live baby. Infertility is two sided; it can either be that the man is infertile or the woman is infertile, and at times the both couples are infertile, so infertility has so much to do with gender. Impaired infertility affects 10-17% of all couples. In 40% of infertile couples, the root of the couples infertility is due to female partner (female factor) while 20% of all

infertile couples, the root of the couples infertility is due to problem with male partner (male factor), couples with combined infertility comprises an additional 30% of the total infertile population (Vizheh *et al.,* 2015).

Infertility in male refers to inability of a man to impregnate a woman after 12months of regular unprotected sexual intercourse, if the woman has no gynaecological problems (Uadia and Emokpae, 2015).

Female infertility means impossibility of becoming pregnant after trying for at least one year (Tersoo, 2018).

Worldwide, infertility is generally quoted as occurring in 8-12% of couples; this incidence varies from one region of the world to another, being highest in Nigeria. In contrast, there is an average prevalence rate of 10-15% in the developed countries (Panti and Sununu, 2014). Approximately 70-80 million couples worldwide are currently infertile (Rasak & Oladipo, 2017). Uadia & Emokpae (2015) stated: the world health organization estimated that 8-12% of couples worldwide experienced some form of infertility during their reproductive lives thus affecting 50-80 million couples with 20-35 million in Africa. It was therefore extrapolated that 3-4 million Nigerian couples are affected.

The prevalence of infertility has been notably higher in sub-Saharan Africa ranging from 20-46% (Panti and Sununu, 2014; Agholor, 2017). The majority of infertility issues are resident in third world countries; few dated studies show that infertility affects more than 20% of people in Gambia, Ethopia and Nigeria (Brittany, 2013). In Nigeria like other developing countries, having children is a social obligation, parenthood is culturally mandatory, childlessness is socially unacceptable all due to high societal value placed on children (Olugbenga *et al*., 2014). Nigeria has over 193 million people in the beginning of 2018 (The number was 190 million in 2017), Yet about 20-25% of local couples are childless and the 20-25% prevalence of infertility in Nigeria is for couples that are officially married, but still these number could be higher (Tersoo, 2018).

It has been observed that infertility seem to be prevalent among couples in Owerri Metropolis of Imo state, and this observation prompted the researcher to carry out a study aimed at exploring more facts on infertility; age and gender difference among infertile couples attending fertility clinic in Federal medical centre, Owerri.

This led the researchers to carry out the study on Infertility; age, and gender difference among infertile couples attending fertility clinic in Federal medical centre Owerri.

METHODOLOGY
Research Design
Research design is the framework or guide used for planning, implementation and analysis of a study (Sousa *et al.,* 2017). The study adopted a descriptive survey and a correlational design because of the diverse research questions and hypothesis. Correlational design involves the systematic investigation of the nature of relationships, or associations between and among variables, rather than direct cause-effect relationships (Sousa *et al.,* 2017).

Area of the Study
This research study was conducted in Federal Medical Centre, Owerri Imo State, precisely at the fertility clinic of the hospital.

Target Population
Target population is an informal term used mostly in epidemiology; it is generally defined to mean a group of sets of elements that you want to get more information about (Glen, 2019).

The target population of this study comprises of all infertile couples who visited the fertility clinic section of the Federal Medical Centre Owerri within the period under study (January- May 2021). The total number of 80 couples has visited the clinic since the year 2021. This total population was collected by the researcher from the record unit of the infertility clinic of the hospital.

Sample and Sampling Technique
The researcher would have worked on the entire population since it was not too large but owing to the fact that there was irregular attendance of the patients under study, the researcher decided to use Taro Yamane's formula to determine her sample size. According to Rafael (2014) the formula is given as:

$$n = \frac{N}{1 + N(e)^2}$$

Where
N = Target population
n = Sample size
1 = A constant (Unity)
e = Level of significance/Limit of tolerable error (0.05).

Therefore applying the above formula on the population, a sample size of 67 respondents was statistically determined, thus;

$$n = \frac{80}{1 + 80(0.05)^2}$$

$$n = \frac{80}{1.2} = 66.66.$$

$$\sim = 67$$

The researcher used purposive sampling technique. This technique is applied purely based on the purpose, in the sense that the researcher thinks some couples are in position to supply her with the data she needs, this made her to go ahead handpicking or selecting them by herself.

Instrument for Data Collection

A structured questionnaire of the four-point likert type of scale was used as instrument for data collection.

The questionnaire is made up of two sections; Section A seeks for demographic data of the respondents while Section B comprises of the 16 items of the questionnaire eliciting information to test the knowledge of infertile couples on infertility and its causes, eliciting information on the attitude of infertile couples towards being diagnosed infertile, and eliciting information on the treatment measures infertile couples used and their effectiveness..

All the questionnaire questions are close ended questions and the questionnaire was drafted from the objectives and formulated by the researcher in a way all the research questions were answered.

Validity of the Instrument

Validity refers to the degree to which an instrument measures exactly what it is suppose to measure. The semi structured questionnaire used for this study was submitted to the supervisor who is an expert in research methods for face and content validity. Two other experts from measurement and evaluation also validated the instrument. The content validity was achieved by ensuring that all questions asked are based on the research questions. The researcher effected the necessary corrections as made by the experts before the final draft was printed and approved by her supervisor as an instrument for data collection for the study.

Reliability of the Instrument

Reliability is defined as the consistency of which an instrument measures what it suppose to measure, it is therefore the consistency and dependability of a measuring tool from the researcher's perspective.

The reliability of the instrument was confirmed through a pilot study using test-retest method in which 10 copies of the questionnaire were administered to 10 infertile couples at another health centre in Owerri L.G.A. After filling the questionnaire, the researcher collected the responses. The same questionnaire but fresh copies were administered to same groups after 1 week; results of the 1st and 2nd test were tallied and analyzed using Pearson Product Moment Correlation co-efficient. It yielded a high positive correlation of 0.7, meaning the instrument is very reliable.

Method of Data Collection

The copies of the validated questionnaire were administered by the researcher to the respondents at the area of the study. 67 questionnaires were distributed, completed and all collected back. This resulted to a 100% return rate. The process took 4 days.

Method of Data Analysis

The collected data was analyzed using a descriptive statistics of frequencies, percentages and mean scores as well as cumulative or cluster mean scores. The frequencies and percentages were used on cluster 1and 3 while mean scores and cluster mean scores were used on cluster 2.

Ethical Consideration

All ethical standards pertaining to human research were carefully considered in this study. The researcher obtained a letter of introduction from the head of department of nursing science, Imo State University and submitted same to the head of Nursing Service at Federal Medical Centre Owerri to obtain permission for the study. Also the letter of permission was received from the head of nursing service and was sent to the nurse in-charge of the fertility clinic unit for approval. Also, written and verbal informed consent was obtained from the respondents. They were assured of anonymity and that confidentiality regarding the collected data will not be breached, good rapport and interpersonal relationship was also established between the researcher and the respondents.
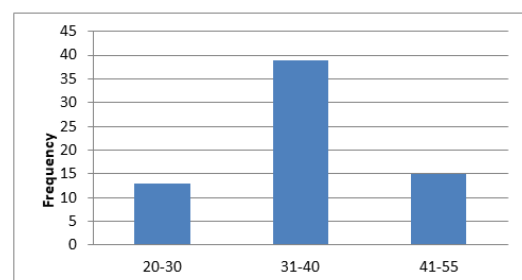
RESULTS
DATA PRESENTATION AND ANALYSIS

This chapter presents the analysis of data collected from the field work. The result of the data analysis was presented in accordance with the research questions and hypothesis that guided the study.

Table 1: Distribution of Respondents by Age

| Age (yrs)	Frequency
20-30	13
31-40	39
41-55	15
Total	67

Data in table 1 shows that respondents of age bracket 20-30 years old were 13 in number, those between the age bracket 31-40 years were 39 in number

and those between the age bracket 41-55 were 15 in number. This implies that respondents between the age brackets 31-40 years old constitute the actual population for the study.

**Table 2: Distribution of Respondents by Educational level**

Educational Status	Frequency
Primary level	7
Secondary level	36
Tertiary level	23
No formal education	1
Total	67
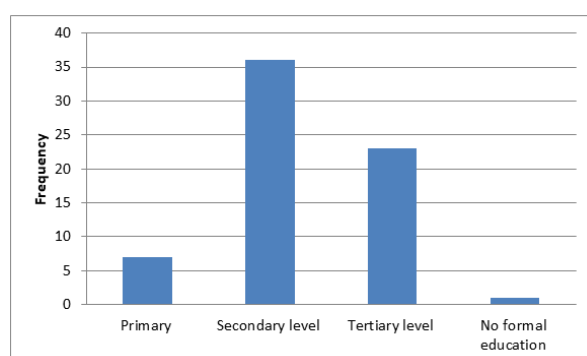
Data in table 2 above indicates that respondents who were of primary school level were 7 in number, those of secondary school level wee 36 in number those of tertiary level were 23 in number while those who had no formal education was only 1. This implies that respondents who attended secondary schools constituted the actual population for the study.

Table 3: Distribution of Respondents by Occupation

| Occupation	Frequency
Farmer	10
Civil servant	21
Trader	16
Student	8
Tailor	9
No occupation	3
Total	67
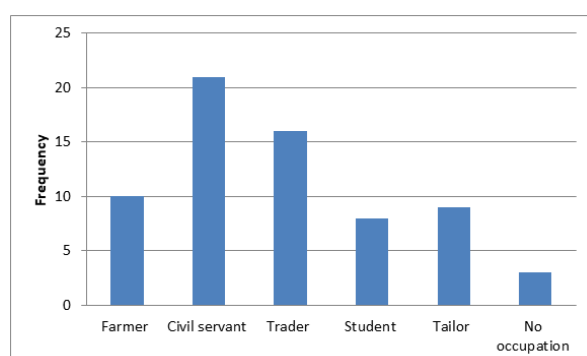
The data in table 3 shows that respondent who are farmers are 10, those who are civil servants are 21,

those who are traders are 16, tailors are 9, students are 8 in number and those without any occupation are 3 in number only. This implies that those who are civil servants constitute the actual population for the study.

Table 4: Distribution of Respondents by Sex

Sex	Frequency
Males	16
Females	51
Total	67
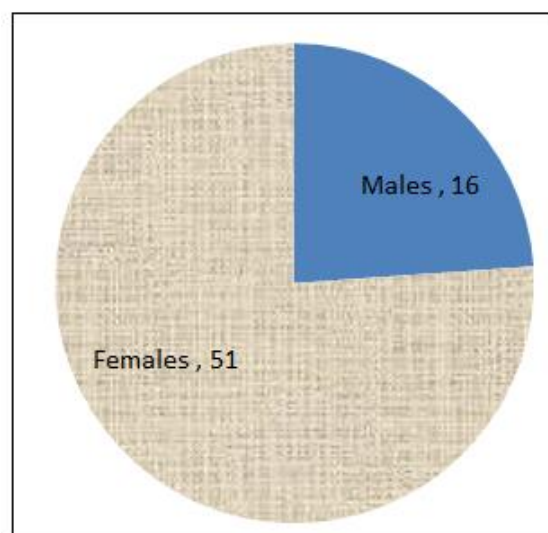
The pie chart in table 4 above indicates that out of the 67 respondents that attended fertility clinic in FMC Owerri, 16 are males while 51 are females. This implies that females form bulk of the population for the study.

**Table 5: Distribution of Respondents by Marital Status**

Status	Frequency
Married	49
Single	-
Widowed	11
Divorced	7
Total	**67**
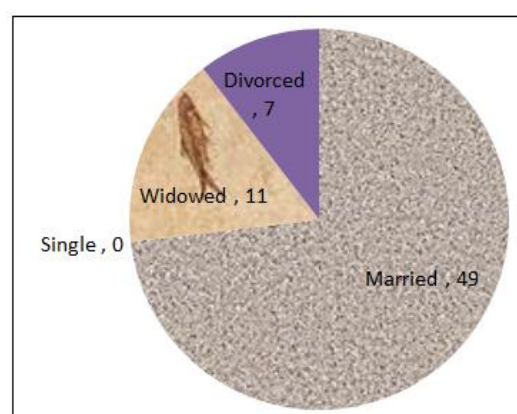
The pie chart in table 5 above reveals that there is no single respondent, those who are married are 49 in number, respondents who are widowed are 11 in number and those who are divorced are 7 in number. This implies that married respondents who attended fertility clinic constituted the actual population for the study.

Table 6: Distribution of Respondent by Family Type

Family type	Frequency
Monogamous	47
Polygamous	20
Total	**67**
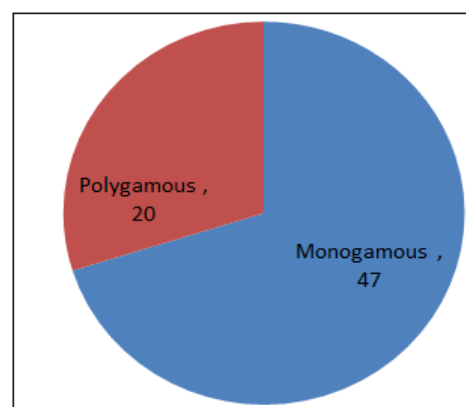
Data in table 6 indicates that respondents from monogamous families are 47 in number and those from polygamous families are 20 in number. This implies that respondents from monogamous families constitute the actual population for the study.

Table 7: Percentage responses on infertility, its possible causes and barriers or experiences

S/N	Items	Frequency	% Responses
	Infertility means:		
	Inability of a couple to conceive.......	58	86.6%
	Inability of an individual to.....	2	3.0%
	Inability of a couple to achieve.....	3	4.4%
	Inability of a female to carry......	4	6.0%
	The most common cause of infertility in females are:		
	Endometriosis	3	4.4%
	Hormonal imbalance	38	56.7%
	Obstructed fallopian tube	6	9.0%
	Fibroid	20	29.9%
	The most common causes of infertility in men are:		
	Low sperm count	24	35.8%
	Ejaculatory dysfunction	9	13.4%
	Prostate cancer	8	12.0%
	Undescended testis	26	38.8%
	How many children of your own do you have?		
	One	22	32.8%
	Two	7	10.5%
	Three and above	2	3.0%
	None	36	53.7%
	How many years of infertility have you experienced?		
	2 years	13	19.4%
	3-5 years	18	26.9%
	6-7 years	25	37.3%
	8 years and above	11	16.4%
	Have you had any miscarriage?		
	Yes	49	73.1%
	No	18	26.9%
	If yes, how many times?		
	Once	3	6.1%
	Two times	8	16.3%
	Three times	10	20.4%
	Four times and above	28	57.2%
	Have you used any family planning method before?		
	Yes	14	20.9%
	No	53	79.1%

In table 7 above, data revealed that 58 respondents representing 86.6% responses majorly agreed that infertility is the inability of a couple to conceive after one year of regular sexual intercourse whereas the rest 9 respondents, representing 13.4% showed different understandings. Also in item No.2, 38 respondents representing 56.7% responses accepted that hormonal imbalance is the most common cause of infertility in females while the remaining 29 respondents or 43.3% response expressed other views. At the same instant 26 respondents or 38.8% responses expressed undescended testis as the most common cause of infertility in men whereas 61.2% responses collectively maintained that either low sperm count, ejaculatory dysfunction or prostate cancers may be the causes of infertility in men. In item No. 4 a total of 36 respondents or 53.7% responses showed that they have never gotten a child of their won while the rest expressed they have one, two or three children of their own respectively. Furthermore, expressing the number of years of infertility experience, 25 respondents representing 37.3% response said they have had 6 to 7years infertility experience whereas the rest said they have had between 0-2years, 3-5 years, and 8years above, infertility experience. In item 6, a total of 49(or 73.1%) response reveals that they have had miscarriages before but 18(or 9%) said No. Furthermore, in item No. 7, a total of 27 respondents representing 57.2% of the 49 people that said they had had miscarriages in life acclaimed they had miscarriages four times and above, while the rest 39 said they had miscarriages either once, twice or thrice as the case may be. Finally in item no. 8 of cluster I table 4.1, it was revealed that 53 respondent (or 79.1% responses) said they haven't used any family planning method before while the rest 14 (or 20.9% responses) said they have tried the family planning method before.

Table 8: T-test analysis of significant relationship between the response mean scores of age and gender of infertile couples attending fertility clinic at FMC, Owerri

S/N	Variables	No	$\bar{X}$	SD	df	Sig. Level	t-cal	t-tab	Decision
1.	Age of patients	16	2.0	0.90					
					65	0.05	3.79	2.021	Reject Ho
2.	Gender of Patients	51	1.7	0.89					

Sig. at 0.05 level, df = 65.

The table 8 above shows t-test analysis of significance relationship between the mean response scores of age and gender of infertile couples attending fertility clinic at FMC Owerri. Result from the analysis shows that t-calculated is 3.79 while t-tabulated is 2.021 at 0.05 level of significance and degree of freedom (df) of 65.

Since the t-calculated value is greater than the table value, the hypothesis is therefore rejected. This then implies that a significant relationship exist from the opinions of respondents on the age and gender of infertile couples attending fertility clinic at FMC Owerri. This is why Puscheck (2016) in supporting the above finding asserts that aging affects male and female fertility, for as men advance in age, testosterone level decreases, and gonadotrophin level increases, sperm concentration and semen volume change and libido decreases and this affects female dramatically due to the fact that menopause occurs earlier in women.

Table 9: Mean score responses on attitude of infertile couples towards being infertile

S/N	Item	SA	A	D	SD	Total	$\bar{X}$	Decision
9.	The affected partner, if the ...	23 92	29 87	9 18	6 06	67 203	3.0	Agreed
10	On the basis of disclosure ...	20 80	35 105	7 14	5 05	67 204	3.0	Agreed
11	When the cause of infertility...	33 132	28 84	2 04	4 04	67 224	3.3	Agreed
12.	On diagnosis of being......	37 148	25 75	0 04	3 03	67 253	3.7	Strongly Agreed
	Cluster Mean						3.3	

From the above table 9, it was revealed that in items no. 9, respondents, mean score was 3.0, respondents mean score in item no 10 was also 3.0 but their mean score in item No. 11 was 3.3 and their mean score in item No. 12 was 3.7. However, a cluster mean score of 3.3 which is greater than the criterion mean of 2.5 implies that respondents highly obliged the attitudes of victims of infertility immediately they are diagnosed being infertile.

Table 10: Percentage responses on treatments measures for infertility patients

S/N	Items	Frequency	Percentages
13.	Which is the best solution for infertility		
	Divorce	4	6.0%
	Adoption	15	22.3%
	Invitro fertilization (IVF)	27	40.3%
	Polygamy	19	28.4%
	Surrogacy	2	3.0%
14.	What step did you take when you were diagnosed being infertile?		
	Seek medical attention	30	44.8%
	Went to prayer centre	16	23.9%
	Took herbal mixtures	14	20.9%
	Met a native doctor	7	10.4%
15.	If you sought medical attention what medical treatment was rendered?		
	In vitro fertilization (IVF)	2	6.7%
	Surrogacy	1	3.3%
	Intra-uterine insemination	0	0%
	Placed on drugs	27	90%
16.	How effective was the treatment measure?		
	Effective	21	70
	Very effective	3	10
	Not effective	6	20

From the table 10 above, it was observed in items 13, that 27 respondents representing 40.3% of the entire responses agreed that in vitro fertilization (IVF) is the best solution for infertility after other measures have failed. Also in items No 14, a total number of 30 persons (or 44.8% responses) accepted seeking medical attention when they were diagnosed of being infertile while the rest said they took to such measures like going to prayer houses, to native doctors and taking herbal mixtures. However, in item No. 15, 27 respondent representing 90% of the entire 30 respondents who acclaimed they opted for medical attention maintained they were initially placed on drug. Lastly, 21 respondents or 70% of those respondents revealed that the treatment measure was effective. Only 6 (20%) of them said that the treatment measure was ineffective.

DISCUSSION
The findings in respect of this research questions reveals that people of between the ages of 20 to 55 years of age attend fertility clinic in federal medical centre Owerri but from statistical data collected both men and women between the age cohorts of 31-40 constitute the actual population of fertility clinic attendants in the institution under study. Brazier (2018) further supports this when he said that after about 32 years of age, a woman's fertility gradually declines, while men's fertility starts to fall by forty. He also opined that infertility in older women may be as a result of higher rate of chromosomal abnormalities in the eggs. This affirms that fertility decreases with age but is more significant with women.

A cursory look at the findings from this research question shows that 38 respondents out of the entire 67 respondents or 56.7% responses agreed that infertility in women is majorly caused by hormonal imbalance while 26 and 24 respondents or 38.8% and 35.8% responses agree that the most common causes of infertility in men are undescended testis and low sperm count respectively. The above findings are actually true of females and males respectively but they are never the only causes of infertility in them. Other causes abound, and that is why Uadia and Emokpae (2015) opined that the etiology of male and female infertility is multi factorial. They maintained that while male infertility could be caused by genetic factors, physical abnormalities, injuries, drugs, infections of the genital tract, radiation, toxins or unexplained factors, the major cause of male infertility in Nigeria are infections and hormonal abnormalities. Brazier (2018), further stated that the causes of male infertility include low sperm count, low sperm motility, abnormal sperm, medical conditions like testicular infection, cancer, surgery, anaemia, cushing syndrome, thyroid disease, ejaculatory dysfunction, premature ejaculation, mumps, hypospadias and cystic fibrosis, among others. For female infertility, Puscheck (2016) enumerates the causes to include cervical factor –cervical narrowing or stenosis and infection of the cervix, uterine factor such as presence of submucousal fibroids or benign tumours in the muscular wall of the uterus, congenital malformation like endometriosis and ovarian factor. Ovulation disorder (Brazier, 2018), tubal factor- involving abnormalities or damages to the fallopian tube. Panti and Sunnunu (2014), was of the opinion that combined causes and recognizable causes. Nevertheless Tabong and Adongo (2013), in their exploratory and qualitative study on communities perception on child bearing and childlessness in Northern Ghana (Upper region) revealed that socially couples could become infertile though supernatural causes such as

bewitchment and disobedience of social norms abortion, masturbation and use of contraceptives.

Findings from the above research questions reveals that all the 67 respondents agreed to all the items with a cluster/cumulative mean score of 3.3 which is far greater than the criterion mean of 2.5, Respondents agreed that if the cause of infertility is one sided, the affected person usually receive less support from his or her partner, that the affected partner usually find it difficult to disclose that he/she is the cause of infertility. If it's both sided, the couple finds it difficult to disclose it to their friends and relatives, and on diagnosis of being positive, the victim usually feels unease, depressed and dejected. Supporting the above findings was a revelation made by Vizheh *et al.,* (2015), from their study to determine the effect of gender-specific infertilities diagnosis on the response of infertile couples, saying that wives with female factor have less marital and sexual satisfaction than wives with other factors and also husbands with male factor show less sexual and marital satisfaction than husbands with other factors. Results from the findings in research question four reveals that 27 or 40.3% response from infertile respondents agreed that in vitro fertilization (IVF) is the best option for infertility away from polygamy or adoption. The above findings is in line with Ali *et al*., (2014) who from their study on the knowledge, perceptions and myths regarding infertility among selected adult population in Pakistan opined that a lot of misconceptions and myths are prevalent in the society hence, alternative medicine is the option for people seeking infertility treatment. This means that those who were diagnosed being infertile immediately sought Medical attention as was the case from this finding where 44.8% of the respondents sought medical attention instead of going to prayer houses, native doctors or taking herbal mixtures as some of the respondents acclaimed. Meanwhile, 27 respondents or 90% response from those who acclaimed they went to hospital for medical treatment said they were placed on drugs initially after which other remedial measures followed and 21 or 70% of them accepted that the treatment was effective on them. All the above findings and opinions are supported by Uadia and Emokpae (2015) who from their study and findings on male infertility in Nigeria suggested that efforts should be made in arriving at a proper diagnosis and adequate treatment given where causes are treatable otherwise the patients be adequately counselled.

The findings of the study have some important implications for nursing, for they have exposed some areas where people supposed to get acquainted with the necessary things to do to prevent the occurrence of the scourge, and where it is occurs the necessary beneficial steps to take for its treatment or management. As a matter of fact, the scourge in fertility is living with us and has come to stay with us since inception. It therefore, calls on healthcare professionals to put up more emphasis on people who happen to be victim of infertility to take the right steps at the right time to treat and/or mange he scourge to avoid had I know when it is late. It has become expedient that nursing students, qualified nurses and healthcare professionals as well as guidance counsellor should step up their bounds in going extra miles making sure that people they suspect should be advised to take the necessary procedure to treat infertility problems in the clinics and not following the matter through the unofficial societal erroneous or religious belief system. It is however a known fact that the role of the school of nursing is to prepare nurses on the best way to champion the affairs of women when it comes to child birth and welfare of women therefore they should be exemplary and champion matters of this sort. If this is done, they would go a long way in relieving the anxiety and depression level of those affected with this scourge in our society.

CONCLUSION

Infertility all over the world and since generations has been a silent but an age-long health issue that invades couples and disintegrated families. It is a double barrelled problem that affects both male and females alike. As a matter of fact, the scourge has something to do with age and gender. From statistics, age and gender have significant relationship as far as infertility is concerned. While infertility is seen to occur more in people of the age cohort 30-35 years, it is observed that women are more vulnerable than men. As at the year 2017, statistics had it that Nigerian population was over 190 million, about 20-25% of local couples were childless, and this 20-25% infertility prevalence in Nigeria is for couples that are officially married.

REFERENCES

- Agholor, K. (2017). The burden of infertility in Nigeria: Raising visibility to projote equitable access to care. Retrieved from: https;//www.inhtf.org/2017/04/06/the-burden-of-infertility-innigeria-riaisng-visibility-to-promote-equitable-access-to-
- Ali, S., Sophie, R., Imam, A. M., Khan, F. I., Ali, S. F., Shaikh, A., & Farid-ul-Hasnain, S. (2011). Knowledge, perceptions and myths regarding infertility among selected adult population in Pakistan: a cross-sectional study. *BMC public health*, *11*(1), 1-7.
- Brazier, Y. (2018). Infertility in Men and Women. Retrieved from: https://www.medicalnewstoday.com/articles/165748.php.
- Brittany, R. (2013). Consequences of Infertility in developing countries. Retrieved from: Https://journals.sagepub.com/dotlabs/10/1177/1757913912472415? Journal code = rshi
- Glen, S. (2019). Target population. Definition, Example. Retrieved from:

https://www.statistichowto.datasciencecentral.com/ target-populaton-definition-examples.

- Olugbenga, B. A., Adebimpe, W., Olanrewaju, S., Babatunde, O., & Oke, O. (2014). Prevalence of infertility and acceptability of assisted reproductive technology among women attending gynaecology clinics in tertiary institution in southwestern Nigeria. *Gynecol Obstet (Sunnyvale)*, *4*, 1-7.
- Paints, A. A., & Sununu, T. Y. (2014). The profile of infertility in a teaching hospital in north west Nigeria. Retrieved from: www.smjonline.org/artile.asp?issn=1118- 8561;year=2014;volume=IT;Issue=1;spage=7;epag e=11aulast=part.
- Puscheck, E. (2019). Infertility. Retrieved from: https://emedicine.mediscape.com/articel/274143- overview.
- Rafael, C. (2014). Note: its Taro Yamene not Yaro Yamane! Retrieved from: https://nairaproject.com/in/blog/019.html
- Rasak, B., & Oladipo, P. (2017). childlessness and its socio-cultural implication on married couples within some selected Yoruba communities in South-West Nigeria. *International Journal of Innovative Social Sciences & Humanities Research*, *5*(1), 42-54.
- Sousa, D. V., Docessnack, M., & Mendes, C. A. (2017). An Overview of research designs relevant to nursing: Part I: Quantitative research designs. Retrieved from: www.scilo.br/Scielo.Php?scrpt-sci- art.ext&Pid=So10411692007003000322.
- Tabong, P. T. N., & Adongo, P. B. (2013). Understanding the social meaning of infertility and childbearing: a qualitative study of the perception of childbearing and childlessness in Northern Ghana. *PloS one*, *8*(1), e54429.
- Tersoo, A. (2018). Prevalence of infertility in Nigeria. Retrieved from: https://www.naija.ng/114452prevalence infertility- nigeria.html.
- Uadia, P. O., & Emokpae, A. M. (2015). Male infertility in Nigeria: A neglected reproductive health issue requiring attention. *Journal of Basic and Clinical Reproductive Sciences*, *4*(2), 45-53.
- Vizheh, M., Pakgohar, M., Rouhi, M., & Veisy, A. (2015). Impact of gender infertility diagnosis on marital relationship in infertile couples: a couple based study. *Sexuality and Disability*, *33*(4), 457- 468.