

The Effect of Contraceptives on Return to Fertility: Analysis of Clinical Survey of Eggon Women of Central Nigeria.

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Abstract: This research on the effect of contraceptives on return to fertility in Eggon women was carried out with the aim of using statistical analysis to investigate some researcher's claims that contraceptives use does not affect return to fertility. The t-test statistic was used to test the hypothesis $H_0 : \mu_1 = \mu_2$ (Number of women who use contraceptives is equal to number of women who return to fertility without problem). $H_1 : \mu_1 \neq \mu_2$ (Number of women who use contraceptives is not equal to number of women who return to fertility without problem). An

Analyses of a sample of 340 women who used contraceptives from 10 villages in Nasarawa Eggon local government. Minitab software result shows that, the H_0 was accepted which is in conformity with previous results that contraceptive use (whether oral or otherwise, long-term or short-term) does not have effect on return to fertility.

Keywords: *Fertility, Contraceptives, t-test, Population, Demography.*

I. INTRODUCTION

Demographic research in Africa continue to yield result which consistently demonstrate that African women are very fertile and the attention of demographers have been drawn to the unprecedented population growth rate in third world countries after world war II (WW II). Before the war, research findings by some social scientist regarding the association between poverty and high fertility stressed that group difference in fertility was a function more of differential rate of contraceptives practice than those of biology (1).

The research by (2) suggested that high fertility breeds high dependency which in turn promotes consumption while negating investment. As the facts of rapid population growth and their cost to development efforts became apparent to many countries during the 1950s and 1960s. The United Nation (UN) progressively increased its involvement in population issues. The second UN international conference on population development (3) discussed fertility as an explanatory and policy variable as well as a key factor in population policy and significant component of development.

So far, emphasis in development planning has shifted from pinpointing economic development and fertility as the means for stabilizing rapid population growth in 1960 to provision of basic needs in 1970s. By the dawn of the 1980s, it became clear that population problems were more complex than the preoccupation with fertility control. A multidisciplinary approach has since then been advocated to handle the other emerging aspects of the population problems. The thrust of the fifth UN population conference (4) was to consolidate achievements made thus far in functioning contemporary understanding of the population development interrelationship.

Demographers define fertility as the ability to conceive children. Fertility rate is the number of birth that occurs during a certain period in a given area normally per every 1000 person. Fertility differs from fecundity, which is defined as potential for reproduction (influence by gamete production, fertilization and carrying a pregnancy to term). A lack of fertility is called infertility while a lack of fecundity is known as sterility.

According to (5), they stated that fertility rates vary considerably from country to country, even in the same country, they can differ by culture and race. The pattern of transition from high to low fertility across childbearing ages differs among countries of the world. In Asia and Europe, fertility decline are largely accounted for by falling fertility of women in the older age groups. On the other hand, fertility decline in most African countries. It is therefore, necessary to study these patterns in Africa. This is more important at this time

when many countries in the region are beginning to see the negative impact of high fertility rate on their economy and also the fact that high fertility rate is associated with underdevelopment.

The aim of this research work is to carry out a survey on the aftermath of using contraceptives among Eggon women to verify if there is difficulty in returning to fertility after contraceptive used, be it oral or otherwise, long-term or short-term.

Most contraceptive users often complain that whenever the practice is terminated, returning to fertility is delayed; some have complained having miscarriage before normal fertility is return; these were the reasons that motivated this research. Although the research was limited to opinion of contraceptive user who may or may not have received any professional advice before commencing the practice.

The hypothesis will be of the form;

$$H_0 : \mu_1 = \mu_2$$

Number of women who use contraceptives is equal to number of women who return to fertility without problem.

$$H_1 : \mu_1 \neq \mu_2$$

Number of women who use contraceptives is not equal to number of women who return to fertility without problem.

II. LITERATURE

Varying literature continues to indicate that, fertility is high among African women this is therefore, it is necessary to study these patterns in Africa.

African countries are among the countries of the world with highest fertility (6). The high fertility transition being witnessed by many countries of the world is slow in the region (1, 7). And (8) classified African countries into three categories based on their position on a demographic transition continuum. Those countries classed as category 1 are those whose fertility data demonstrate apparent support for a demographic transition from high to much lower fertility levels countries in this category are Nigeria, Kenya, Rwanda, Zambia Cote D'Ivoire, Zimbabwe, Morocco, Tunisia, Ghana and Egypt. Countries that fall into category 2 are those that have recorded small decline in fertility rate and these includes; Benin Mauritania, Senegal, Cameroon, Malawi, CAR, Tanzania, and Swaziland. Category 3 is countries in which their fertility levels appear to have stabilized around a peak, these includes Burkina Faso, Liberia, Mali, Togo, Uganda, DRC, Angola etc.

According to (9), contraceptive use regardless of its duration and type does not have a negative effect on the ability of woman to conceive following termination of use and doesn't significantly delay fertility. Therefore, appropriate counselling is important to assure the women use the methods as to their interest.

Study result from a large cohort of nurses indicate that fertility is reduced briefly but return to normal within 3 months with no significant consequent delay to conception for ever users and no increasing risk of infertility with increasing duration of use, (10). (11) in their research on contraceptive methods and the subsequent search for a pregnancy conclude that, return to fertility, has been thoroughly analyzed and it was found to be a sure, albeit sometimes slightly slow in the short term and there is no any side effect of the use of contraceptive in the woman and her offspring. The effect on birth weight seems small and inconclusive. (12) Suggested that, some of the factors a woman consider before chosen contraceptive are; effectiveness, comfort, cost, safety and early recovery of fertility after ceasing using this method. Past experiences with contraceptive and future fertility intensions can lay a role in this decision. She concluded that, whichever method a woman chooses to use, whether long-term or short-term, contraceptive use does not affect fertility in anyway.

The work of (13) states that, the important factors governing human fertility includes; fecundability, age at marriage, rest period of gestation and post partum amenorrhea, sterility, family planning and temporary withdrawal from cohabitation. They concluded that some of the factors responsible for this high population in Africa includes early marriage, infant mortality, lack of experience in the use of modern contraceptive, high fertility rate, high value associated with number of children, competition among co-wives in polygamy families and the fear that some of the children may die early in life.

Some authors have noted in the last few years that we have observed increasing rates of oral contraceptives (OCs) use as well as increasing rates of autism spectrum disorder diagnoses and have raised hypotheses regarding specific consequence in the offspring, this remain to be elucidated in future clinical studies (14). (11, 15) concluded in their research that; it seem clearly that fertility returns promptly with OCs and that any delay to return to normal physiology does not remarkably influence one year or longer fertility rates. There no consistent evidence to conclude that OCs are associated with future miscarriage, preterm birth or low birth weight.

Study from (16) supported other researchers by concluding his work with the words: many hormonal contraceptive choices have risks, but infertility is not one of them. You are as likely to conceive if you used birth control in the past as a woman who has never used hormonal contraceptives. (17) Concluded his work that,

“a rise in contraceptive prevalence among fecund women has the same average effect on fertility in Sub-Saharan Africa as in other regions of the developing world”.

III. METHODOLOGY

This research on “effect of contraceptive on return to fertility” was carried out among Eggon women in Nasarawa Eggon local government, Nasarawa state. The research covered 10 villages in the local government, these includes: Alogani, Kagbu, Lambaga, Alamis Ezzen, Lizzi, Arikpa, Mada, Wulko and Galli.

A sample of size 340 women was estimated from the infinite population of contraceptive users in the area and the questionnaire was not distributed equally to those 10 villages. The choice of our respondents was restricted to women who have used contraceptives for child spacing and are within the reproductive age of (15-49).

The 2-sample t-test was used to compare the two populations which we shall denote by n_1 (number of women who used contraceptive) and n_2 (number of women who returned to fertility without problem after discontinuation). The mean of the two population n_1 and n_2 were compared using the 2-sample t-test to determine if the 2 means are equal at 0.05 level of significance. One of the variations in t-test is that the data may be paired or not paired.

If null hypothesis is accepted, we say that the mean of the population of women who use contraceptives is the same as the mean of the population of women who return to fertility and conclude that contraceptive have no effect on return to fertility, if the null hypothesis is rejected, we conclude that the mean of the population of women who return to fertility is not the same with the mean of the population of women who used contraceptives, hence we conclude that contraceptive have effect on return to fertility.

Minitab statistical software version 13.32 was used for this analysis.

IV. DATA ANALYSIS

The data collected from the survey conducted across the 10 villages is presented in the table below according to villages;

Table 1: Data from the Survey

<u>Village</u>	<u>n_1</u>	<u>n_2</u>	<u>d</u>	<u>R_1</u>	<u>R_2</u>	<u>R_3</u>
Alogani	35	35	0	13	30	35
Kagbu	30	29	1	8	29	29
Lambaga	30	30	0	10	25	30
Alamis Ezzen	43	41	2	11	30	41
Lizzi	32	31	1	9	22	31
Arikpa	28	28	0	7	17	28
Mada	34	33	1	8	19	33
Wulko	34	34	0	10	20	34
Galli	35	35	0	6	21	35
Wadugu	39	38	1	12	21	38

Where n_1 is the population of women who use contraceptives that were sampled in each of the 10 villages, n_2 is the population of women that return to fertility after discontinuation of contraceptives, d is the difference between n_1 and n_2 in each village, R_1 , R_2 and R_3 are numbers of women who returned to fertility after 1month, 2month and 3month respectively.

Two-Sample t-test and CI: n_1, n_2

	N	Mean	StDev	SE Mean
n_1	10	34.00	4.47	1.4
n_2	10	33.40	4.09	1.3

Difference = $\mu_{n_1} - \mu_{n_2}$

Estimate for difference: 0.60

95% CI for difference: (-3.43, 4.63)

T-Test of difference = 0 (vs not =): T-Value = 0.31, P-Value = 0.758 DF = 18

Both use Pooled StDev = 4.28

V. FINDINGS

From the minitab result obtained above, the P-Value is 0.758 which is greater than 0.05, this indicates that, the test is statistically insignificant hence the null hypothesis is accepted that the two population means are equal.

The return to fertility is delayed in some women for two to three months; this could be as a result of estrogens and progesterone activities on female hormones which differ from one woman to another.

Some women observed cessation of menstruation and increase in weight during the period for which they used contraceptives while some complain of irregular menstruations which result to loss of weight. There are also few cases of unexpected pregnancy. Some of the respondents have also complained of multiple births (twins) on return to fertility.

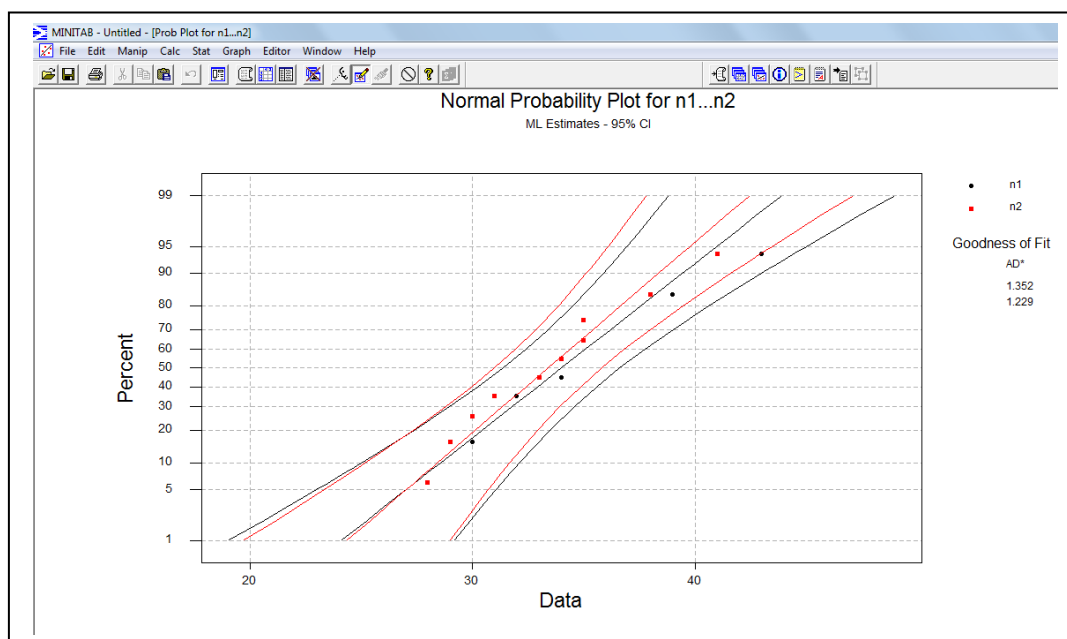


Figure 1: Probability Plot for 2-Sample t-test

VI. CONCLUSION

The result of this research clearly indicates that contraceptives use have no effect on return to fertility in Eggon women, but there could be little delay in return to fertility in some women which could be as a result of estrogens and progesterone activities on female hormones which differ from one woman to another. Some minor side effects may be observed in some women these are not evidence enough against return to fertility. In the aggregate, contraceptive use (whether oral or otherwise, long-term or short-term) does not have effect on return to fertility. This is in agreement with previous researches in the field. The case of Eggon women is not different from other women in developing countries of the world.

This work has further confirmed the earlier work of many researchers in the field. Hence, women who intend to use contraceptive as birth control method should be encourage using them without fear as return to fertility is almost sure, but should see a specialist for advice on which contraceptive to use.

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