

(RESEARCH ARTICLE)



Perception prevalence of the relationship between PID and infertility amongst women of reproductive age: A Nigerian study

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International Journal of Life Science Research Archive, 2023, 04(01), 138–142

Publication history: Received on 13 December 2022; revised on 04 February 2023; accepted on 06 February 2023

Article DOI: <https://doi.org/10.53771/ijlsra.2023.4.1.0020>

Abstract

There is an established relationship between Pelvic Inflammatory Disease (PID) and infertility. These two entities are of public health concern globally due to the burden on reproductive health. Evidence has shown the relationship between PID and infertility to be between 9 and 85% from various regions of the world.

Aim: To determine the perception prevalence of the relationship between PID and infertility amongst women of reproductive age in Rivers State Nigeria.

Method: It was a cross sectional study of women of reproductive age who attended enlightenment campaign by the Mother and Baby Care Global Foundation. Information were coded and analysed using SPSS version 25.

Results: Two hundred and fifty (250) subjects were enrolled for the study. The mean age was 24 ± 4 years. One hundred and fifteen (46%) were between ages 20 – 29 years, 30 – 39 years represented 85 (34%) of the subjects, 50(20%) were between ages 40 – 49years. Subjects aware of PID and infertility were 74 (30%) and 113 (45%) respectively. The relationship between PID and infertility was 25 (10%). For the educational status of the subjects tertiary level of education comprised of 200 (80%) while 50 (20%) had.

Conclusion: This study revealed the perception prevalence of the relationship between PID and infertility as 10%. This indeed worrisome taking into cognisance the devastating effect of PID on human reproduction. Enlightenment programme is highly recommended to prevent its negative consequences PID on fertility.

Keywords: Perception; Prevalence; PID; Infertility; Reproductive age; Nigeria

1 Introduction

There is an established relationship between Pelvic Inflammatory Disease (PID) and infertility. These two entities are of public health concern globally due to the burden on reproductive health.¹⁻⁴ Evidence has shown the relationship between PID and infertility to be between 9 and 85% from various regions of the world. [1,2,3-8]

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Pelvic inflammatory disease is an ascending lower genital tract infection contacted mainly from sexually transmitted infections (STIs) of which Chlamydia trachomatis is well implicated.[1]

There is an established link between PID and infertility. Infertility refers to the failure to achieve a clinical pregnancy after over one year of regular unprotected sexual intercourse.[1]

The prevalence of infertility has been on the increase globally, the estimate is approximately 90 of couples within the reproductive age.[1]

Infertility does not only creates a considerable cost burden but also introduces tension to the family.[1,2] It is however imperative to be abreast with the causes of infertility to help ameliorate the burden.[1]

Scholars have demonstrated the relationship between PID and infertility.¹ Worthy of note is that sexually transmitted micro-organisms is an important cause of PID.^{1,2} Evidence have shown that about 85% of PID infections are caused by STIs.[1,3,8-11]

The organism commonly implicated with PID is Chlamydia trachomatis, which is one of the most prevalent sexually transmitted micro-organisms.¹ This organism ascends from the lower genital tract.[1-4] Chlamydia infection can lead to serious reproductive consequences including infertility.[1,2,8-10]

It was estimated that the proportion of tubal infertility caused by Chlamydia was 45%.[1]

In the study conducted by Jennings LK et al showed the relationship between PID and Infertility as 16.8%.⁵ Whereas in a Chinese study by Liu L et al the relationship between PID and infertility was 9%.[1]

The diagnosis of infertility is primarily clinical.[1-4] During patient's evaluations of PID, other etiologies of pain should be suspected in female patients with lower abdominal pain or pelvic pain and genital tract tenderness.[2] Other complications of PID are tubo – ovarian or pelvic abscess, long term complications of PID are ectopic Pregnancy, chronic pelvic pain. Early diagnosis and treatment can potentially prevent complications.[1,4,6] The differential diagnosis of PID include ectopic pregnancy, ruptured ovarian Cyst, ovarian torsion, endometriosis, cystitis, appendicitis, diverticulitis, traumatic Injury to the pelvic region.[1-3]

This study is different from other studies that either deals with PID alone or infertility solitarily .This study is focused on the perception of the relationship between PID and infertility among women of reproductive age during a health talk on reproductive health by the Mother, Baby and Adolescent Care Global Foundation in Port Harcourt Rivers State, Nigeria.

Aim

To determine the perception prevalence of the relationship between PID and infertility amongst women of reproductive age in Rivers State Nigeria.

2 Methods

This was a cross sectional study of women of reproductive age who attended enlightenment campaign by the Mother and Baby Care Global Foundation. Information were coded and analysed using SPSS version 25.

2.1 Sample size estimation

The sample size of 250 was calculated using the Kish Leslie formula for cross-sectional studies calculated, based on 20% approximated from the prevalence 16.8% from study by the Jenning LK on PID and a confidence level of 95%. $n = Z^2Pq/d^2$. Where n is the desired sample size.

Z is the standard normal deviate usually set at 1.96, which corresponds to the confidence interval P is the proportion of patients with PID which in this case is 20% q is complementary proportion equivalent to two (1), that is 1- 0.2% equal to 0.8%, d is the degree of accuracy desired which is 5.0% (0.05%) $n = 1.96^2 \times 0.2 (1 - 0.8)/0.05^2 = 245$.

This was rounded up to the nearest whole number, the reason for using 250 as the sample size.

2.2 Inclusion criteria

Women who consented for the study

2.3 Exclusion criteria

Women less than 15 years of age

Women above 49 years of age

3 Results

Table 1 Summary of Research

Number of Subjects	250
Mean Age	24 + 4 years
Awareness of PID amongst Reproductive Age Women	74 (30%)
Awareness of Infertility amongst Reproductive Age Women	113 (45%)
Relationship between PID and Infertility	25 (10%)
Educational Status Tertiary	250 (100%)

Table 2 The distribution of the educational status of the women

Level of education	Number (n)	Percentage (%)
Primary	-	-
Secondary	50	20
Tertiary	200	80
Total	250	100

Table 3 Age distribution of Subjects the women of reproductive age

Age (years)	Number (n)	Percentage (%)
20 - 29	115	46
30 - 39	85	34
40 - 49	50	20
Total	250	100

Table 4 Perception of the relationship of PID and infertility based on age distribution

Age	Number n	percentage
20 - 29	4	2
30 - 39	12	6
40 - 49	4	2
	20	10

Two hundred and fifty (250) subjects were enrolled for the study. The mean age was 24 ± 4 years. One hundred and fifteen (46%) were between ages 20 – 29 years, 30 – 39 years represented 85 (34%) of the subjects, 50(20%) were between ages 40 – 49 years. Subjects aware of PID and infertility were 74 (30%) and 113 (45%) respectively. The relationship between PID and infertility was 25 (10%). For the educational status of the subjects tertiary level of education comprised of 200 (80%) while 50 (20%) had secondary level.

4 Discussion

Our study relationship of the awareness of the perception of the relationship between PID and infertility as 10% among women of reproductive age in Rivers State Nigeria. This figure though represented by 10% of the population. This was not in agreement with the study by Liu L et al in China where the relationship between PID and infertility was 9%. [1] This prevalence was lower when compared with that gotten from our study which was 10% prevalence rate (table 1). However, in the research conducted by Jennings et al the prevalence of 16.8% was revealed concerning the relationship between PID and infertility. [3] It is important to note that the findings of the two research works were actually demonstrated proven scientifically compared to our study which was based on perceived prevalence rate of women of reproductive age.

Some researchers have shown that about 85% of PID infections are caused by STIs. [1,3,5-11] This findings are much more higher than obtained from our study which was 10% prevalence rate from our study (see tables 1 and 2). Evidence from scholarly work across the globe has rightly pointed out the relationship between PID and infertility. [1,2,7-10] Infections such as Chlamydia trachomatis and Neisseria gonorrhoeae are two common STIs implicated in PID causing ascending genital tract infections. [1,2]

From our study the highest prevalence of the percentage perception of the women of reproductive age who with respect to the relationship between PID and infertility were in the age range of 30 – 39 years representing 6% of the total prevalence. (see table 4). The other 2 age ranges of 20 -29 years and 40 – 49 years had 2% perception of prevalence respectively (see table 4).

Our research work also revealed that 80% of the subjects had tertiary level of education and 20% secondary level of education respectively (see table 2). This might have played a role in their level of awareness of PID and infertility which were 30% and 45% respectively (table 1). This might have also influenced the perception prevalence rate of 10% considering the relationship between PID and infertility.

The organism commonly implicated with PID is Chlamydia trachomatis, which is one of the most prevalent sexually transmitted micro-organisms. [1,4-6,11] This organism ascends from the lower genital tract. [1-4] Chlamydia infection can lead to serious reproductive consequences including infertility. [1-3,10]

5 Conclusion

This study revealed the perception prevalence of the relationship between PID and infertility as 10%. This indeed worrisome taking into cognisance the devastating effect of PID on human reproduction. Enlightenment programme is highly recommended to prevent its negative consequences PID on fertility.

Recommendation

This study should be conducted in rural communities of Nigeria with wider sample size. Further, there should screening of persons at risk of STIs in these rural communities and those with STIs followed up to identify those with PID and the relation on their reproduction especially with fertility.

Compliance with ethical standards

Acknowledgments

Mother, Baby and Adolescent Care Global Foundation.

Disclosure of conflict of interest

Authors have declared no conflict of interest.

Statement of ethical approval

Permission for the study was granted by the office of the Director of Public Health of the Rivers State Ministry of Health in line with the Helsinki Declaration (2013 revised).

Statement of informed consent

This was a retrospective study.

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