

# Assessment of the Rate of Sexually Transmitted Diseases in Kubwa F.C.T. Abuja, Nigeria

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**Abstract:** The purpose of this study was an assessment of the rate of sexually transmitted diseases in Kubwa F.C.T Abuja. A total of two hundred and eight-six patient aged between 9-50 years were examined in the study, out of whom two hundred and six case note could be traced for review, attending the Kubwa General Hospital, Medilan Medical Laboratory Kubwa, Open Health Care Medical Centre Kubwa, Daughters of Charity Health Care Services and the Kubwa Muslim Community Hospital were enlisted into the study between March, 2011 to February 2012. Blood, endocervical swabs, high vaginal swabs, urine, were collected from females whereas urethral swabs, urethral discharge, urine and blood were collected from male counterparts. These samples were screened and tested by laboratory examination methods. The Isolated pathogens included *Staphylococcus aureus* (35%), *Candida* species (21%), *Trichomonas vaginalis* (15%), *Streptococcus pyogenes* (6%), *Neisseria gonorrhoeae* (7%), and *Treponema pallidum* (3%). In the blood samples, syphilis (7%) and HIV (6%). The result revealed a high incidence of infections in Kubwa Metropolis and its neighborhoods. Based on the findings, the researcher has raised recommendations on how to improve ways of combating and managing STIs scourge in Kubwa in particular and F.C.T in general. There is need for the 4Cs of Good sexually transmitted infection management such as counseling, compliance, condoms, contact treatment, etc others include sex education, surveillance and control is necessary in this part of F.C.T, in Nigeria. Also, that both schools and faith groups should be encouraged to dwell more on morality to be able to reduce the spread of the infection through sexual intercourse.

**Keywords:** Sexually Transmitted Diseases, Assessment, Morality Sex Education, Sexual Intercourse

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## 1. Introduction

Sexually transmitted diseases (STD) pose a serious and widespread health threat in Nigeria. Though most Sexually transmitted diseases can be easily diagnosed and treated, many have no noticeable symptoms, and infected individuals may not seek testing or treatment. As a result, many infections go undetected. Without treatment, individuals with STDs are at risk of serious health problems, such as infertility. Also, individuals who are already infected with STDs are at least two to five times more likely than those who are uninfected to acquire HIV infection (WHO, 2005). STDs affect people of all races, ages, and sexual orientations, though some individuals experience greater challenges in protecting their health. STDs take an especially heavy toll on

Nigerians, particularly young Nigerians male and female. Sexually transmitted diseases (STD) remain one of the major scourges of our time particularly in the developing countries such as Nigeria where level of medical awareness tends to be very low, and preventive measures are not easily enforced. Sexually transmitted diseases caused by bacterial agents are well documented in literature (Kleinman 2008, Belsey, 2006, Santelli and Kirby, 2002, Bowie, 2000, Bevan *et al.*, 2012, Araoye *et al.*, 2012, Awake, 2012).

They produce infections that may result in serious complications such as pelvic inflammatory disease (PID), salpingitis and infertility, in the case of syphilis may even lead to death (Olmstead, 2007, Savage, 2007, Bevan *et al* 1995, Brigrigg 1995). The rate of dissemination of sexually transmitted diseases depends largely on the pattern of sexual behavior within and between groups with different levels of

infection (Yorke *et al* 2008) have demonstrated in the case of gonorrhea that a core group of sexually promiscuous individuals can maintain a reservoir of infections that spread slowly to the general population. Although, Human Immunodeficiency Virus (HIV) is more slowly transmitted infection than gonorrhea, it is likely to follow a similar model (Gupta *et al* 2009).

The rate of sexually transmitted diseases may be high and constitute a major sexual and reproductive health problem in Nigeria; its true dimension is greatly unknown due to changing socioeconomic environment, poor data collection and storage. However, the prevalence of sexually transmitted diseases is known to be dependent on cultural, socioeconomic status and biologically determined gender roles under investigation. As a result of these factors enumerated above, attempts will be made during the period of this work to accomplish the following:

1. To find out the commonly implicated etiological agents responsible for sexually transmitted diseases in Kubwa, F.C.T. Abuja.
2. To determine the percentage of positive cases in various samples and the reproductive age group in the various age range.
3. To make recommendation to the F.C.T. administration on how preventive measures can be introduced in minimizing the spread.

## 2. Literature Review

*Prevalence of Sexually Transmitted Disease in Kubwa, F.C.T Abuja*

The sexually transmitted diseases (STD) are a group of contagious conditions in which the principal mode of transmission is by heterosexual or homosexual activity or through sexual contact (Arya *et al.*, 2000). This can involve a number of sites of contact including penis, vagina, cervix, lips, oro-pharynx, anus and rectum together with adjacent skin areas, kissing, oro-genital contact and the use of sexual “toys” such as vibrators. The organisms involved can also be transmitted in other ways than sexual contact as for example in ophthalmia neonatorum where the gonococci or chlamydia are inoculated in the birth canal during delivery; congenital syphilis (transplacental) prepubertal vulvovaginitis (via fomites such as share damp towels) transfusion syphilis (via fresh blood), acquired immune deficiency syndrome – AIDS (via fresh blood, blood products or contaminated needles), inclusion conjunctivitis (by contaminated fingers) and public lice (shared clothes, over-crowding, proximity and possibly toilet seats) (Arya *et al.*, 2000).

The sexually transmitted diseases are more generally regarded as comprising a multiplicity of conditions caused by spirochaetes bacteria, chlamydia, mycoplasma, protozoa, fungi, parasite and viruses some or all of which may be mixed together in any venereal disease or STD clinic (Coleman *et al.*, 1997). Sexually transmitted diseases are now the commonest group of communicable diseases in the world and the number of infected patients continues to rise every year (Awake, 2012). The increase in the incidence has taken place despite improvements in facilities for diagnosis and effective antibiotics which makes patients rapidly non-infectious and cure the majority (Alder and Mccutchan, 2005).

**Table 1.** Shows Aetiological Classification of Sexually Transmitted Diseases.

GROUP	AGENT	DISEASES
BACTERIA	a. Neisseria gonorrhea	Gonococcal infection
	b. Chlamydia trachomatis	Non-gonococcal, non-specific urogenital infections lymphogranuloma venereum.
	c. Ureaplasma Urealyticum	Non-gonococcal Urogenital infection.
	d. Mycoplasma hominis	-
	e. Haemophilus ducreyi	Chancroid
	f. Treponema pallidum	Syphilis
	g. Various vaginal anaerobes	Non-specific vaginitis anaerobic vaginosis, bacterial vaginosis
	h. Calymmatobacterium granulomatis	Granuloma inguinale
	i. Group B streptococcus	Neonatal sepsis.
VIRUSES	a. Herpes simplex virus	Genital herpes
	b. Human papilloma virus	Genital warts, cervical cancer
	c. Pox virus	Molluscum contagiosum
	d. Hepatitis virus	Hepatitis B, C, D
	e. Cytomegalo virus	Congenital infection: birth defect; varied manifestation in immunosuppressed host
	f. Human Immunodeficiency Virus (HIV)	Acquired Immunodeficiency Syndrome (AIDS)
FUNGI	Candida albicans	Genital candidiasis
PROTOZOA	Trichomonas vaginalis	Trichomoniasis
ARTHROPODS	Phthirus pubis sarcoptes scabies	Pediculosis scabies

Adopted from Arya *et al*, (2000)

Published reports show clearly that the introduction of contraception has increased sexually transmitted disease, particularly gonorrhea have reached epidemic proportions (Klienman, 2008; Santelli and Kirby, 2002). There are also controlled studies to show that increased availability of condoms does not increase sexual activity (Awake, 2012). It

is now well established that in women as well as in men, STD is the most common preventable cause of infertility (Sherries and Fox, 2003). Post-infections tubal damage is one of the most important causes of infertility and particularly frequent in women with secondary infertility (Templeton and Kerr, 2007). During the acute phase, pelvic inflammatory

disease is associated with considerable morbidity and the long-term sequel effect on health and fertility. It has been estimated that up to 20% of women who develop pelvic inflammatory disease become infertile (Westrom, 2000). The damage to the fallopian tube and surrounding structures is usually remediable surgery is only occasionally successful in restoring fertility (Maclean and Macnaughton, 2000). The impression that infection of the male genitor-urinary tract may be associated with infertility is a long standing concept. Much of this alleged association has been based upon inconsistent evidence and in particular, asymptomatic infection has led to great difficulties in its detection. There have been many claims to support the fact that the treatment of male genital tract infection lead to improved semen quality and fertility. These assertions apply to both acute and chronic genital tract infection (Maclean and Macnaughton, 2000).

It is difficult to establish in a broad sense, a precise incidence of infertility, since the size of the problem relates to the particular population studied. However, it is generally accepted that around 10% of random population of couples suffer infertility after at least 12 months of unprotected intercourse (Harris 2001 and Vaessen, 2004). Revelation from hospital records in Kubwa FCT Abuja confirms a high, though indeterminate incidence of sexually transmitted disease FCT hospital annual report 2004. At the same time training in sexually transmitted disease in FCT is generally inadequate while in some cases non-existent, both to the medical practitioner and the paramedical personnel. Therefore cases of untreatable or inadequately treated genital tract infections, frequently due to the sexually transmitted diseases are not uncommon. These have resulted in serious medical and economic consequences. There is therefore the need to undertake a thorough study of sexually transmitted disease in this apparently neglected but by no means less important part of Nigeria, so as to provide medical, environmental health officers and public health officers with valuable guide in the management, diagnosis and control of sexually transmitted diseases in Kubwa metropolis.

Majer *et al*, 2002 opines the benefits of sex education in schools, providing a unique setting for reaching large number of youths with prevention and early intervention services for adolescent reproductive health problems: pregnancy, sexually transmitted diseases, Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (AIDS). The most important determinant of an adolescent's risk of an early pregnancy or sexually transmitted diseases is the age of sexual debut. The perception of peer behavior strongly influences an adolescent's sexual behavior. Adolescents living in poverty, with limited religious involvement and in families in which either a mother or sister has experienced a pregnancy during adolescent, face an increased likelihood of teenage pregnancy. Other risk-taking behaviors such as alcohol or other drug use, smoking and delinquency are associated with early onset of sexual activity. School staff should also be aware of the federal and state regulations that address protection of student's privacy in the provision and documentation of reproductive health services. All over the

world, sexually transmitted diseases are very common. In industrialized countries, there are medical and social problems which incidences are steadily rising. Although facilities for their correct diagnosis and treatment in most of Africa are still sadly inadequate, available evidence shows alarmingly high rates for the sexually transmitted diseases, especially gonorrhea (Idose *et al*, 2003). In Ibadan, Nigeria, the prevalence of gonorrhea among asymptomatic woman was about 5%, while among commercial sex-workers and females on out-patients basis was between 15-20% (Cruickshank, *et al*, 2005).

Similarly, in Uganda and Kenya, prevalent rates of about 20% were noted among women. The problem is also serious in Sudan and Ethiopia (Parry, 2004). It is obvious that sexually transmitted diseases in Africa are a major problem. For example, the prevalence rate for gonorrhea per 100,000 populations in Kampala (Uganda) is 10,000; Nairobi (Kenya) 7,000 while the corresponding figures for greater London (United Kingdom) and Atlanta (United State of America) are 310 and 2,510 respectively (Parry, 2004).

It is likely that puerperal sepsis and sexually transmitted infections have been a cause of death and disability from the earliest times. Yet there is little mention of them in the writings of the ancient world, including the Bible. Venereal diseases were probably rare in ancient Israel because of the strict rules about sexual morality (Maclean and Macnaughton, 1999). Mackey-scolly *et al*, 2007 demonstrated in Perth. In Western Australia of 2216 females attending the sexually transmitted clinic in the city, 17.9% had infections with candida albicans (fungus), 10.5% with trichomoniasis (protozoa), 18.2% with gonorrhea (bacterium), 3% with syphilis (treponeme), 11.5% with Chlamydia and viruses 1.4% with cytomegalovirus, 3.1% with herpes virus (an unknown percentages had warts) while 49% had none of these. Recent development regarding venereal syphilis concern the increased incidence of early infections in many parts of the world, changing patterns of its clinical and laboratory presentation magnified by wider use of new test which reveal hitherto for undetected antibodies and problems posed in treatment especially of the late disease. There has been a worldwide increase in the incidence of primary and secondary syphilis from the low points achieved in the 1950s (World Health Organization 2005, 2007). Using the United State figures as an example, the nadir was in 1956 when there were 6516 cases (4.1 per 100,000), which had replaces the peak figure of 106,539 cases (75.6 per 100,000) only nine year before in 1947. However, the cases then increased again to 23,250 (12.3 per 100,000) during the next nine years but since 1965, they have fluctuated slightly but nevertheless had increased to 24,933 (11.9 per 100,000) in 1976 (United State Public Health Services, 2007). Subsequently, there has been a slight fall. Recently, increased figures are widespread throughout Europe. In the venereal disease clinics of England for example, there were 181 of primary and secondary syphilis in 2007 compared with 187 cases in England and Wales in 2001 (Department of Health Social Security Data, 2009).

Worldwide, two trends which contributed to the situation are particularly striking.

1. The high proportion of infections in the male homosexual which appears to be increasing.
2. The replacement with syphilis in the vacuum created by the elimination of yaws, which has seemed to offer some protection against syphilis in areas in which the yaws campaigns have been successful.

Infections in homosexuals are exemplified by United Kingdom studies. In a British cooperative clinical group study in 1971 in England 45.9% of infections with primary and secondary syphilis were in homosexual (British Cooperative Clinical Group, 2003) but in 2007 the percentage had increased to approximately 58.0% (British Cooperative Clinical Group, 2008). Significant increases were also noted in Scotland and Wales, although as previously very much the highest around three quarters of infection were homosexually acquired in the clinics of the west end of London. The increase in homosexual infection were marked greater than those of heterosexual infection in all areas studied in England, increase numbers had been noted in individual clinics in all areas even in towns of less than 50,000 populations. These observations are relevant to parts of big cities in other countries of Europe, North America and Australia. The emergence of venereal syphilis in the wake of previous yaws campaign was well documented in Papua New Guinea by (Rhodes and Anderson, 2000). In other previous yaws areas of Oceania very significant increases since 2001 have been recorded in Fiji, New Caledonia and French Polynesia (Wilcox, 2008). Indeed in these areas, Fiji and New Caledonia, cases of early con-genital syphilis are being recorded for the first time (South Pacific Commission, 2008).

The reported incidence of syphilis has increased than that of gonorrhea which has been even greater in many countries of all continents and only a small fraction of the total number may be reported. In the USA, as with syphilis, peak figure were noted at the end of World War II with 400,639 cases (284.2 per 100,000) in 1947. During the next decade the number fell progressively to 216,476 in 1957 (129.8 per 100,000) but from that point on progressively increased until by 1976 there were no less than 1,011,014 reported cases (rate 478.1 per 100,000) and the true annual incidence in the country as a whole was estimated at 2.7million cases (United State Public Health Services, 2007).

Subsequently, the rate has declined slightly. Rising number of cases have been reported since 1970 although at a slower rate of increase in the majority of European countries (Wilcox, 2007). In England for example, there were 58,734 cases in 1977 compared with 57,578 in England and Wales in 1971 (Dept. Health Social Security, 2009). In Sweden as reported by Wallin (1978), the previously high rate pertaining more than doubled between 1959 and 1970 which was followed by a marked decrease (for which a multiplicity of reason are advanced) but in 1976 and 1977 there has been a new period of increase. Meanwhile in common with most countries the male and female ratio has fallen in Sweden

from 1:7:1 in 1961 to 1:1:1 in 1976.

While a decline from the peak figure was evident in Sweden in 1970 small fall and checks have later been reported in a number of other European countries such as Denmark, Finland, The German Democratic Republic, Poland, Yugoslavia and it has been postulated that this may be due to economic factor rather to effective public health action (WHO, 2007). Judson *et al* 1977 found an incidence of 11.5% of such infection in 419 homosexual men screened in a bath house in the USA; Savage 1977 reported 10 percent incidence of asymptomatic gonorrhea amongst male in New Zealand hospital over a 21months period. Gilstrap *et al* (2007), screening the male contact of female with pelvic inflammatory disease (PID) isolated the gonococcus in 39% and no less than 22% of these men were asymptomatic. Also the organism was found in the male consort of 15% of women diagnosed as having non-gonococci (PID) and 30% of these were found by Crawford *et al* (2007) to differ from those from symptomatic infection in so far that 24 of 25 isolates from the former required arginine, hypoxanthine and uracil compared with only 10 of 25 of the latter. It was also noted that asymptomatic infections were more common among white than colored patients.

*Haemophilus Vaginalis* or *Corynebacterium Vaginale*, controversy has always persists concerning the significance of this organism in relation to Vaginitis. Josey *et al* (2006), in a study of 288 cases, described it as producing a discharge of pasty consistency, with a distinctive odour clinging to the vaginal wall and Josey and Lambe (2006) on an experiment of 184 infected women considered that epidemiological data including the cervical neoplasia-supported the conclusion that the organism was transmitted sexually. On the other hand, McCormack *et al* (2007) founded *corynebacterium virginal* in 150 (32.2%) of 446 young women attending a gynecologist in a student health service. While non-white race, use of oral contraceptives, no history of marriage and history of pregnancy were considered relevant; they found no relation to sexual experience and no association with a vaginal discharge either as reported by the participant or noted by the physician. Also, Bowie *et al* (2007) and Wang *et al* (2007) in an examination of males attending a venereal clinic did not often find *corynebacterium vaginale* and could not associate it with non-gonococcal urethritis. In the venereal disease clinics of England in 2007 there were 30,918 reported cases of viral infection comprising 22,766 of condylomata acuminata (venereal warts), 7,222 of genital herpes (compared with 2001 of primary and secondary syphilis) and 930 of molluscum contagiosum (Dept. Health Social Sec. 2009). In United States, the estimated annual incidence of venereal warts is 0.7million and of genital herpes 0.3million (United States Public health service 2007) of these conditions, genital herpes is potentially the most important. No figures are available for infections with other viruses which may be passed sexually such as that of Hepatitis B, cytomegalovirus and the virus responsible for glandular fever (infectious mononucleosis which may be transmitted by kissing).

The clinical manifestation of type II Herpes Virus (HSV-2) infection are now becoming widely appreciated, 13 cases of ano-rectal infections in homosexual males were recorded by (Waugh, 2006); 11 cases of urinary retention requiring catheterization in young adult with sign of sacral radiiculomyopathy including lower extremity or perineal parasthesial, constipation and impotence were reported by Caplan *et al* (2007). Cases of aseptic meningitis associated with genital herpes are also being reported by Herron (2007) and Olmstead (2007). Condylomata acuminata is a common and often troublesome sexually transmitted condition (Oriol, 2007). In a review of the subject as a worrisome nuisance both to the patient and the physician who is trying to get them treated is now being encountered in pediatric age group with urethral condyloma acuminatum as reported by Mininberg and Rudwick (2006). An overall prevalence of congenital cytomegalovirus infection amongst the offspring of a young female population was assessed at 2.4% amongst 939 examined by Stagno *et al* (2007). The virus was isolated from the semen of 6 of 249 men examined and from 6.6% of 531 female patients attending a venereal disease clinic (Willmott, 2005). Seven babies born to infected mothers showed no signs of cytomegalic inclusion disease. That cytomegalovirus may be transmitted sexually and sometimes progress to the mononucleosis syndrome was indicated by a case report of two men who had had sex with the same infected woman, one of whom may have infected another girl (Chretien *et al* 2007).

Hepatitis B virus is regarded by some as the most potentially serious agent which may be sexually transmitted. Serological evidence of infection continued to be found more commonly amongst homosexual than heterosexual men. In the Greenwich Village area of New York City according to Williams *et al* 2008, the case rate of Hepatitis B in 1975 was 23.9 per 100,000 for men and only 4.7 for women. Non- B hepatitis also had a strong male bias. The observation of Coleman *et al* (2007) suggest that the male homosexual represent a pool of individuals amongst which the hepatitis B virus is readily transmitted mainly as a sub-clinical infection although clinical infection occur in some patients. It was considered not possible yet to state whether the high antibody rate in male homosexual was related to promiscuity or sexual practices. Lim *et al* (2007), however, finding the antigen or antibody in 27 of 76 bisexual and homosexual male could detect no link with sexual practices but noted that the risk of acquisition increased with the number of sexual partners and nearly half of those who had enjoyed more than 10 consorts had been infected. These findings would relate to the findings in prostitute by Frosner *et al* (2005) who showed a higher prevalence of hepatitis B antibody according to their length of registration in their trade.

### 3. Materials and Methods

In this study both primary and secondary data were used, the sources of secondary data were textbooks, journals, newspaper, magazine, previous research studies and articles,

while primary data include personal observations and results from conducted tests. Five hospitals were randomly selected for the study. Samples were collected from these five hospitals and a total of 475 were selected from the following hospitals namely: Kubwa General Hospital, Medilan Medical Laboratory, Open Health Care Medical Centre Kubwa, Daughters of Charity Health Care Services and Kubwa Muslim Community Hospital in Kubwa, F.C.T Abuja respectively. The subjects included male and female patient's referred to the laboratory by clinicians of the various hospital officers on the grounds of sexually transmitted disease and HIV screening. At examination, urine, high vaginal swab, endocervical swab, urethral swab, urethral discharge and blood were collected from those patients. These were done after informed consent and counseling.

#### Patients

Two categories of patients or subjects were included in this study. These were designated as:

Group A	0 – 9	Years
Group B	10 – 19	”
Group C	20 – 29	”
Group D	30 – 39	”
Group E	40 – 49	”
Group F	50 – above	”

### 4. Data Analysis and Presentation of Results

#### Analysis of Result

A total of 286 samples were examined in this study, out of whom 206 case notes could be traced for review. Varied specimens were collected from each person except where repeats or some others specimens were required for purposes of confirming previous result or clearing some uncertainties. Table 2: shows the type of infection by sex distribution of patients at final diagnosis at the randomly selected hospital in Kubwa from 2010 – 2011 by rank between male and female. It shows that 45.2% of male had Non-Gonococcal while 2.4% of female had Non-Gonococcal. Also the number of female with Candidiasis is 37.2% which is higher than the number of male with 3% Candidiasis. Similarly, 31.8% of female with Gardrenella Vaginalis is higher than male which had only 1% of it. However, other infection is higher in male than in female except for Genital warts (6.2%), Trichonomiasis (3.9%) which is higher in female than in male. Table 3 shows the number of infected patients in staphylococcus aureus. In the age range of 0-9, the percentage prevalence of positive HVS cases was lowest with 1.4%, when compared to age range of 20-29; the percentage prevalence was highest with 28.2%. In table 4 the number of infected patients in neisseria gonorrhea positive cases in the age range of 0-9 was 0% and when compared to 20-29 age range, the percentage prevalence was highest with 42.9%. Table 5 shows the number of infected patients in streptococcus pyogenes positive cases in the age range of 0-9; the percentage prevalence of positive cases was lowest

with 0% when compared to age range of 20-29 with percentage prevalence, highest with 38.5%. Table 6 show the number of infected patient in trichomonas vaginalis. The age range of 0-9 has 0% positive case when compared to age range of 20-29 and 30-39 respectively with percentage prevalence highest with 32.3%. Table 7 shows the number of infected patient in candida albicans. The age range of 0-9 has 4.9% positive cases when compared to the age range of 20-29 with percentage prevalence highest with 29.3%.

Table 8 shows the number of infected patient in treponema pallidum. The age range of 0-9 has a 0% positive case when compared to age range of 20-29 and 30-39 respectively with percentage prevalence highest with 50%. Table 9 shows parameter of blood sample from syphilis subjects. In the age range of 0-9 and 50 above shows the least positive percentage case of 0% respectively. While the highest positive percentage was recorded in age range of 20-29 with 33.3%. Table 10 shows parameter of blood samples from HIV subjects. The number of infected positive cases in the age range of 0-9 was lowest with 0% when compared to age range of 20-29 with percentage prevalence, highest with 33.3%.

In all the age group range, the group that is sexually active was found in the age range of between 20-39. The percentage of positive cases in various samples are shown in figure 9 below as follows; Staphylococcus Aureus; 35%, Neisseria Gonorrhea 7%; Streptococcus Pyogenes 6%; Trichomonas Vaginalis 15%; Candida Albicans 21%; Treponema Pallidum 3%; Syphilis 7% and HIV 6%. The findings from the sources of the data in the five hospital/laboratory records are as follows:

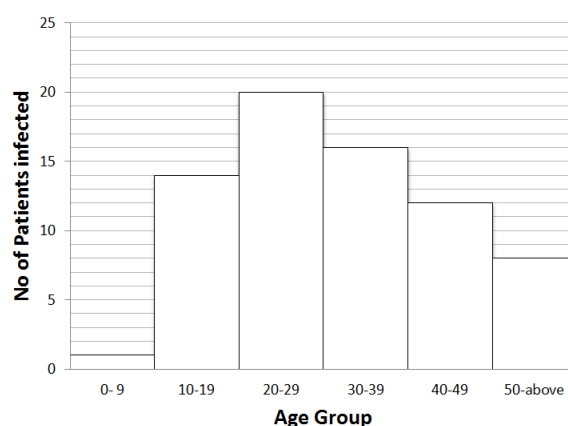
## 5. Observation and Analysis of Result

**Table 2.** The type of infection by sex distribution of patients at final diagnosis at the Randomly selected hospital in Kubwa from 2010 – 2011 by rank.

Rank	Diagnosis	Male (%)	Female (%)	Total
1	Non-gonococcal Urethritis/cervicitis	71 (45.2)	16 (2.4)	87
2	Candidiasis	3 (1.9)	48 (37.2)	51
3	Guardrenella Vaginalis	1 (0.6)	41 (31.8)	42
4	Others	27 (17.2)	4 (3.0)	31
5	Gonococcal Urethritis/crvicitis	25 (15.9)	3 (2.3)	28
6	Genital warts	6 (3.8)	8 (6.2)	14
7	Genital herps	7 (4.5)	1 (0.8)	8
8	Trichonomiasis	2 (1.3)	5 (3.9)	7
9	Syphilis	4 (2.6)	1 (0.8)	5
10	Lymphogranulome venetrum	4 (2.6)	0	4
11	HIV/Aids	2 (1.3)	1 (0.8)	3
12	Chancroid	3 (1.9)	0	3
13	Haemophilus vaginitis	0	1 (0.8)	1
14	Scabies	1 (0.6)	0	1
15	Chlamydia	1 (0.6)	0	1
		157	129	286

**Table 3.** Age distribution of Infected Patient (Staphylococcus Aureus).

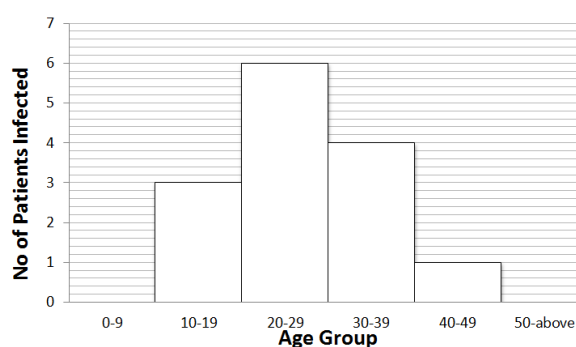
Staphylococcus Aureus		
Age group	No of Patients infected	% of individual diseases
0 – 9	1	1.4
10 – 19	14	19.7
20 – 29	20	28.2
30 – 39	16	22.5
40 – 49	12	16.9
50 & Above	8	11.28
Total	71	



**Figure 1.** Staphylococcus Aureus.

**Table 4.** Age distribution of Infected Patient (Neisseria Gonorrhea).

Neisseria Gonorrhea		
Age group	No of Patients Infected	% of individual diseases
0 – 9	0	0
10 – 19	3	21.4
20 – 29	6	42.9
30 – 39	4	28.6
40 – 49	1	7.1
50 & Above	0	0
Total	14	



**Figure 2.** Neisseria Gonorrhea.

**Table 5.** Age distribution of Infected Patient (Staphylococcus Pyogenes).

Streptococcus Pyogenes		
Age group	No of Patients Infected	% of individual diseases
0 – 9	0	0
10 – 19	1	7.8
20 – 29	5	38.5
30 – 39	3	23.1
40 – 49	1	7.7
50 & Above	3	23.1
Total	13	

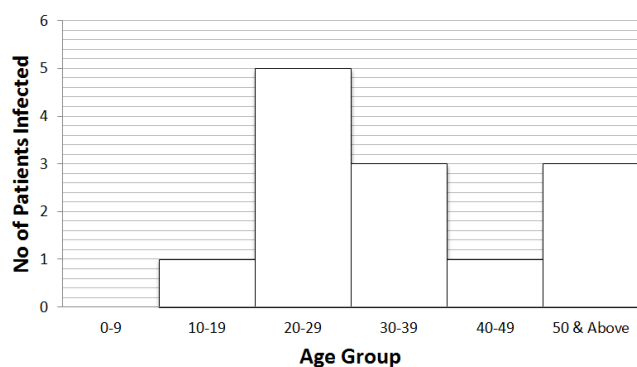


Figure 3. Streptococcus Pyogenes.

Table 6. Age distribution of Infected Patient (Trichomonas Vaginalis).

Trichomonas Vaginalis		
Age group	No of Patients Infected	% of individual diseases
0 – 9	0	0
10 – 19	6	19.4
20 – 29	10	32.3
30 – 39	10	32.3
40 – 49	3	9.7
50 & Above	2	6.5
Total	31	

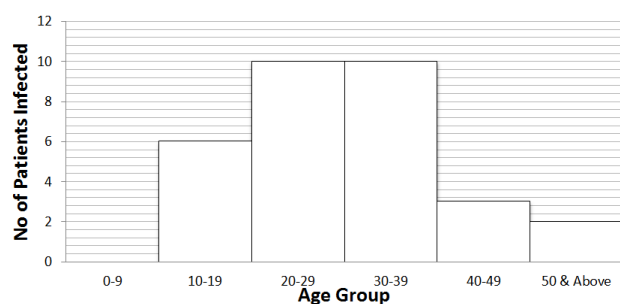


Figure 4. Trichomonas Vaginalis.

Table 7. Age distribution of Infected Patient (Candida Albicans).

Candida Albicans		
Age group	No of Patients Infected	% of individual diseases
0 – 9	2	4.9
10 – 19	7	17.1
20 – 29	12	29.3
30 – 39	9	21.95
40 – 49	7	17.1
50 & Above	4	9.8
Total	44	

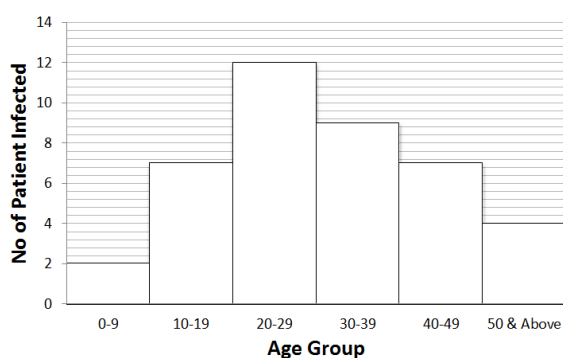


Figure 5. Candida Albicans.

Table 8. Age distribution of Infected Patient (Treponema Pallidum).

Treponema Pallidum		
Age group	No of Patients Infected	% of individual diseases
0 – 9	0	0
10 – 19	0	0
20 – 29	3	50
30 – 39	3	50
40 – 49	0	0
50 & Above	0	0
Total	6	

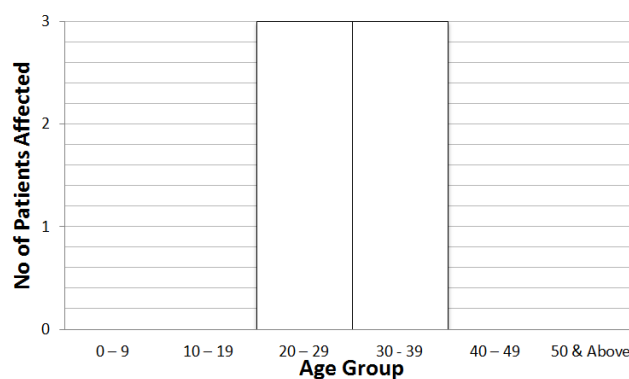


Figure 6. Treponema Pallidum.

Table 9. Age distribution of Infected Patient (Syphilis).

Syphilis		
Age group	No of Patients Infected	% of individual diseases
0 – 9	0	0
10 – 19	2	13.3
20 – 29	5	33.3
30 – 39	6	40
40 – 49	2	13.3
50 & Above	0	0
Total	15	

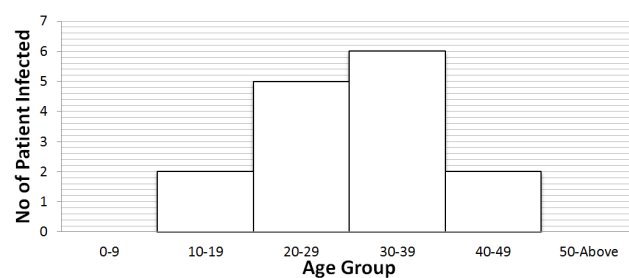


Figure 7. Syphilis.

Table 10. Age distribution of Infected Patient (HIV).

HIV		
Age group	No of Patients Infected	% of individual diseases
0 – 9	0	0
10 – 19	3	25
20 – 29	4	33.3
30 – 39	3	25
40 – 49	2	16.7
50 & Above	0	0
Total	12	



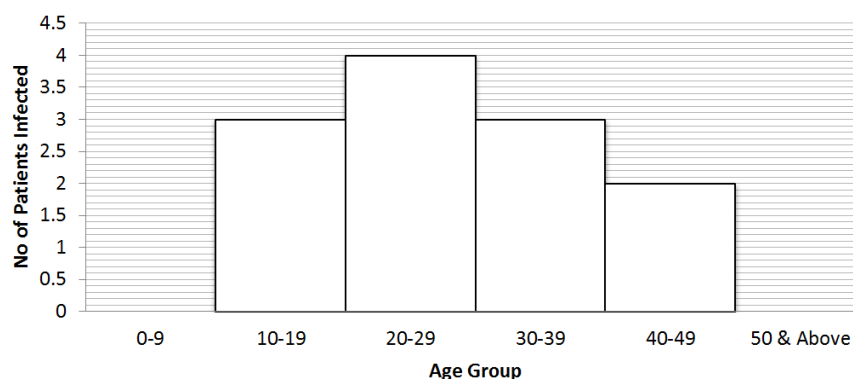


Figure 8. HIV.

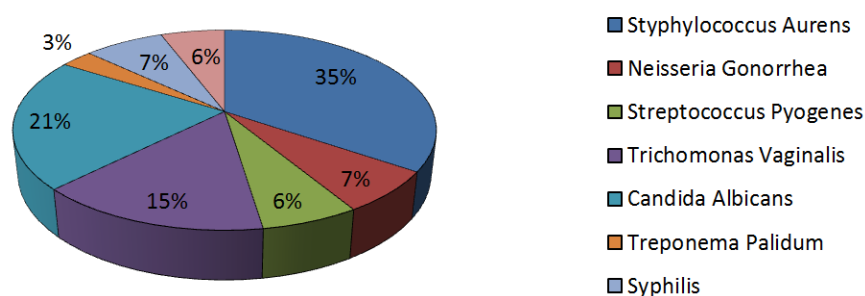


Figure 9. Percentage Distribution of Sexually Transmitted Diseases in Kubwa.

The pie chart above shows the percentage distribution of sexually transmitted diseases at the Randomly selected hospital in Kubwa from 2010 – 2011 by rank.

## 6. Discussion of Result/Findings

Although staphylococcus aureus is the most common isolate from laboratory specimen. It is not considered a sexually transmitted disease. The reason for this is not far fetch. It is a normal flora of the skin including the genital area and any contamination from skin in the process of sample collection will result in its isolation of laboratory cultures. Of the STI diagnosed through laboratory examination Candida Albicans is the most common; it accounts for about 21% of all positive STI result while treponema pallidum was least with 3%. The importance of the genital trait as the medium for sexual urge or satisfaction and procreation cannot be over emphasized. Since procreation is of paramount importance in tropical Africa, infertile women may be divorced, abandoned or replaced and the infertile men may be cast out. Both sexes are faced with varied psychological and psycho sexual problems because they cannot fulfill their marital obligations.

Recurrent non specific genital infection often result in anxiety, depression, suicidal ideas, and an abnormal fixation of attention on the genitalia, and with HIV, there is stigma, neglect, abandonment and sometimes complete out cast by the family and by the society in general. A wife who contacts a venereal disease from her husband may become depressed at certain knowledge of his unfaithfulness to her. The diagnosis of genital tract infection in relation to bacteria is

best achieved by culture. However, the high cost of the test especially with the involvement of HIV, coupled with its reliance on specialized personnel as well as a 24 or 48hours and sometimes up to 72hours waiting period has resulted in an intensive search for an alternatives by anxious patients who might resort to physicians, pharmaceutical stores, patent medicine stores traditional healers and sometimes even quacks.

The 35% incidence of staphylococcus species in this study are in consonance with that of Sherries and Fox (2003), who isolated infection caused by staphylococci are probably the most common in our hospitals as depicted by their study. Interestingly, Staphylococcus aureus was more frequent in HVS, urine, U/S, ECS respectively. This implies that staphylococci has been persistent and notorious diseases causing bacteria and among the hardiest bacteria, surviving in our environment even in the desiccated state. Several weeks, a feature responsible for their ease of transmission within a hospital, this is in concord with Templeton and Kerr (2007).

Neisseria gonorrhoeae had (7%) isolation rates in this study. However, this is not in harmony with Arya *et al* (2003) who stated that from all available data gonorrhea continues to defy the existing control measure. Man himself being the only host is the one to blame. The (2.4%) Neisserian gonorrhoeae isolation from the female population in our study is lower than those of Alder and Mccutchan (2005) from Ibadan, Nigeria and that of Finlayson *et al* (2004) for South Africa whose isolation rate was 3% and 5.3% respectively. However, Neisserian gonorrhoeae isolated in Kubwa, Nigeria from our study was lower than those Arya *et*



al (2003) in Teso district in Uganda (18.3%) Hopcroft et al (2003) in Kenya (17.3%), Hall and Whitcomb (2008) in South Africa and Jha et al; (2008). In India, 10.2% isolation rates each, Rhodesia (Zimbabwe); 9.7% was isolated by Weissenberger *et al* (2007). Also the 45.2 Neisserian gonorrhoeae isolated in our study from male is much higher than that of Winfield et al (2006) who isolated 8.9% from male population in Teso district in Uganda.

A positive case of Neisserian gonorrhoeae isolated from a 38years old female with five children whose husband was away from Nigeria on a Technical Aid Corps (TAC) assignment confirms the finding of Arya *et al* (2000) who stated the living apart as occur with migrant labour where wife is left at home is very conducive to the transmission of sexually transmitted diseases. There was a positive case of Neisserian gonorrhoeae in a 12years old female who was raped by a driver in Kubwa, and this was in harmony with the finding of Siegal *et al* (2007), who stated categorically that contact abuse which ranges from inappropriate fondling to intercourse is experienced by over 20% of girls and some 10% of boys before they reach 14years. Most of the perpetrators are men known to the child, often in some position of authority such as teachers or activity leaders or trusted friend of the family. Contrary to popular opinion, relatively few abusers come from the child's immediate family. The above statement is not uncommon in this area where grandmothers, often spoil the girl kept with them sexually, especially those from a poor background.

Community studies suggest that the risk of victims of child sexual abuse developing mental disorders in adult life is increased two to twelve times (Harries, 2001). Child sexual abuse generates deep concern world wide as a social phenomenon and pressing public health issue. The potential traumatic impact of child sexual abuse is well documented (Bukbuk and Audu, 1996), (Ernst *et al* 1993, Rowan and Foy, 1993) notably as a contributory factor in poor school performance, substance abuse, delinquency, prostitution, sexual dysfunction, mental illness, suicide and transmission of abusive behaviour to subsequent generations (Rhodes and Anderson 2000, Scot 1992, Ernst *et al* 1993). Over the past two decades, epidemiological studies have yielded prevalence estimates of child sexual abuse ranging between 6% and 62% for women and 3% and 31% for men (Finkelhor, 1994).

Our findings of 21% *Candida albicans* was however higher than the 17.9% reported by (Mackay Scollay *et al* 2007) in Perth, Western Australia. Fungal infections of the vagina are frequently encountered in general practice, family planning, obstetrics and gynaecology, veneraology and cytology clinics (Frosner *et al* 2005). The infections (candidates) caused by these mycotic agents usually arise from alterations in the normal milieu of the host as in diabetics, women on oral contraceptives or broad spectrum antibiotics and during the last trimester of pregnancy. Apart from being sexually transmitted spread from the ano-genital tract occurs with the intestinal tracts serving as the most important foci of infection (Bukbuk and Audu, 1996).

Vulvitis, vaginitis and vulvovaginitis are terms often used interchangeably for inflammation of the lower genital tract. Infection or inflammation may be localized at the onset but vaginal discharges tend to produce maceration on the vulva and vulvitis often produces a secondary vaginitis so that the problem becomes more generalized (Rowan and Foy, 1993). *Candida* species is uncommon in pre puberal girls between 1-15 years unless there are an underlying factor such as diabetes mellitus, recent antibiotic or napkin use (O'Brien, 1995).

## 7. Conclusion

This study enables us to explore the social background and the risky behaviour of the public. Men and women mainly of the reproductive age group subjects between age group (20-39 years) stand out prominently, closely followed by those between (10-19 years) comprising mainly student of primary and post primary education or schools. These age groups are sexually active, promiscuous and prone to prostitution, especially with present severe socio economic constrain and cultural changes. There is at present very little information upon which to base a reasonable assessment of the true incidence and pattern of sexually transmitted bacterial diseases including HIV in Kubwa and its neighborhood. The few facts available suggest a high incidence of infection and a considerable reservoir of infection among the female and male population.

Even though the occurrence of STI is very common in this study, it is worthy of note that the hospital record represent only a small handful of STI cases and there are many more undiagnosed in the community. The prevalence will even be higher if those who were treated without laboratory examination are included. Many STIs were not included in the list because all the source laboratories have limitations in conducting advanced diagnostic technique like Herpes isolation. The overall picture of findings indicates clearly that the situation is very serious and the need for improvement of facilities for medical laboratory diagnosis and treatment is very urgent. In view of the emerging pattern of the epidemic in this country, it is now time to provide our young people with the knowledge on sex education and means to protect them from infection. There is urgent need for the introduction of population and family life education including 4Cs of good STI Management and sex education as integral part of the school curricula at all levels should be facilitated.

## Recommendations

Encourage the establishment of early intervention service program as follows.

1. To meet the needs of the students.
2. Effective, theory based classrooms education.
3. Confidential health services.
4. 4Vigorous campaign should include developing dynamic and flexible approaches to address sexual health problem in the contest of changing life roles, and

using medical centre's, youth services and sexually health centre's to provide information and resources, and using the media, to support sexual health education.

5. A mass education campaign on STD treatment and HIV management, seeking behaviour and sensitization of community leaders for public awareness campaign on sexually transmitted diseases including HIV.
6. Promoting safer sex practices among the sexually active population and increasing the use of condoms
7. The local government action committee on Aids should be initiated to reach the rural populace, just like NACA and SACA
8. There is need for the establishment of a modern sexually transmitted diseases reference clinic
9. The programme should focus on raising awareness on the prevention of STD and AIDS through the following
  - (i) Strengthening and supporting health units in Kubwa and neighboring communities to provide effective STD and AIDS control services.
  - (ii) Establishing a monitoring and evaluation system, and expansion of the pathology department and provision of essential medical laboratory equipment to aid diagnostic services
  - (iii) Promulgate a decree or law to protect single women from sexual assault.

Also, I recommend the 4Cs of Good Sexually Transmitted Infection Management

#### Counselling

You should

- a) Put yourself in their place
- b) Listen to patient and engage in dialogue
- c) Counsel patient on the need to change risky behavior
- d) Educate patient on STI prevention
- e) Educate patient on the implications if untreated STI
- f) Discuss the other 3Cs

Compliance

Encourage Patient on

- a) Avoid self medication
- b) Ensure completion of treatment regimen even after all the symptoms have disappeared and not to share the medication with partner.
- c) Abstain from sex until treatment is completed and infection cured
- d) Discuss the other 3Cs.

#### Condoms

You should

- a) Inform patient on proper condom use
- b) Educate patient on consistent and correct condom use
- c) Demonstrate condom use
- d) Provide condoms to patient
- e) Discuss the other 3Cs

#### Contact Treatment

Encourage patient to

- a) Inform all sexual partners in the last three months to seek medical treatment
- b) Avoid reinfection
- c) Discuss the 3Cs

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