

1 Original Research Article

2 Pattern of Sexually Transmitted Infections: A Retrospective Profile from a Sexually 3 Transmitted Infections Clinic of a Secondary Care Hospital in Lagos, Nigeria

4

5 ABSTRACT

6 **Background:** Sexually transmitted infections (STIs) constitute major health problems
and

7 can have serious reproductive health consequences. Understanding the patterns of STI
and

8 their associated risk factors in a particular region is necessary for proper planning
and

9 implementation of targeted interventions.

10 **Aims:** To determine the pattern of STI and their associated risk factors in a secondary
health

11 facility in Lagos, Nigeria.

12 **Materials and Methods:** A hospital based, retrospective study of data collected
from the

13 clinical records of 31 patients that attended STI clinic of the general hospital, Lagos over a
14 period of 12 months. The diagnosis was made based on history, clinical examination
and

15 microbiological investigations. Data analysis was done by SPSS version 23.

16 **Result:** Gonococcal urethritis 8(25.8%) was the commonest STI followed by
7(22.6%)

17 trichomoniasis 7(22.6%), 7(19.4%) genital warts 7(19.4%), 7(19.4%) herpes genitalis
7(19.4%), 3(9.7%) non-gonococcal

18 urethritis 3(9.7%) and only one person had chancroid and was HIV positive. Majority of the
patients

19 had 26 (83.9%) multiple sex partners, 18(58.9%) never used condom and 17(54.8)
had

20 previous history of STI. Occasional use of condom ($X^2 = 6.482$, $df = 1$, $P\text{-value} = 0.039$)
and

21 previous history of STI ($X^2 = 4.644$, $df = 1$, $P\text{-value} = 0.031$) were statistically associated
with

22 Gonococcal urethritis. Dyspareunia ($X^2 = 15.708$, $df = 1$, $P\text{-value} = 0.000$) was also
23 statistically associated with Trichomoniasis.

24 **Conclusion:** Bacterial STI still constitute a major burden of STI in our clinic which
25 is

26 contrary to the recent trends of viral STI constituting a major burden of STI in some parts of
27 the world. Poor condom usage observed from this study might be partly responsible for it.

28 Bearing in mind by Clinicians that bacterial STI is still rampant and Condom use promotion
29 will go a long way to reduce the burden of STI in our community.

Keywords: STI, NGU, Trichomoniasis

30 INTRODUCTION

31 Sexually transmitted infections (STIs) constitute major health and socio-economic
32 problems worldwide leading to morbidity, mortality and stigmatization [1,2]. World
33 health Organization estimates that there are more than 1 million STIs acquired every day [3]. Each
34 year, there are estimated 357 million new infections with one of the four curable STIs and
35 more than 500 million people are living with genital HSV (herpes) infection [3]. A high rate
36 of STI has also been reported in developing countries where STI treatment is less accessible
37 and stigmatization is high [4,5,6].

38 Information regarding the profile of STI in developing countries is based mainly on
39 syndromic management because of inadequate laboratory facilities. Though the
40 approach has many limitations, W.H.O has placed emphasis on it in high-prevalence
41 areas with inadequate laboratory facilities and trained staff [7,8].

42 STI increases the rate of HIV transmission and can have serious reproductive health
43 consequences beyond the immediate impact of the infection itself [3,7,9-11].

44 Various risk factors identified with STI includes sex preferences, inconsistent use of
45 condom, lifetime sex partners, present sex partners, previous history of STI and socio-
46 economic factors [12-14].

47 The incidence and prevalence of a particular STI varies in different geographical areas
48 based on available health facility, socio-economic and cultural factors [1,6,15]. Therefore there is
49 a need to understand the patterns of STI and their associated risk factors in the regions of a
50 country for proper planning and implementation of targeted interventions.

51 The aim of this study is to study and document the pattern of STI and their associated risk
52 factors in a secondary health facility in Lagos, Nigeria over a period of one year.

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55 MATERIALS AND METHODS

- 56 Clinical case notes of all the 31 patients that attended the sexually transmitted clinic
of
- 57 General Hospital, Lagos over a period of one-year January till December, 2017 were

58 retrospectively studied. Ethical approval was received from the General hospital
Lagos

59 ethical approval committee.

60 Detailed history, demographic data, Clinical examination and microbiologic
investigation

61 were recorded from all the patients. All patients were tested for HIV using parallel methods

62 and ELISA (Not referenced). *Neisseria gonorrhea* was detected by Gram staining and
culture on Chocolate

63 agar followed by identification tests (Not referenced). *Trichomonas vaginalis* was
detected by Microscopy

64 using wet preparation methods. Genital warts were diagnosed clinically. *Candida*
species

65 were isolated on sabaraund agar from some of the female patients that presented with
vaginal

66 discharge. Patients that presented with genital ulcer were tested for VDRL and also herpes

67 simplex virus with vircell diagnostic kit (Not referenced). Data analysis was done by SPSS
version 23 and Chi

68 square was done as test of significance

69 RESULT

70 Out of 31 patients, 20(64.5%) were males and 16(51.6%) were females (Authors
should review the statistics). Majority of the

71 patients were single 21(67.7%) and 10(32.3%) were married. The age of the patients ranged
72 from 15 to 57 years, the mean age was 29.39years. Business/ Trade were their
main

73 18(58.1%) source of income, 16(51.6) had Secondary Education while 15(48.4%) had
74 Tertiary Education and 23(74.2) were from Yoruba tribe. Table 1

75 Majority of them 13(41.9) had their last coitus within the last month of presentation,
76 18(58.1%) never used condom, 26(83.9%) had history of multiple sex partners
and

77 17(54.8%) had history of previous STI. Table 2

78 Out of the total patients, 7(22.6%) had trichomoniasis, 6(19.4%) had genital warts, 1(3.2%)
79 had Chancroid, 6(19.4%) had herpes genitalis, 8(25.8%) had vaginal candidiasis,
2(6.5%)

80 were VDRL reactive with no clinical features of syphilis and 1(3.2%) was HIV positive.
Out

81 of the patients that had genital warts, 4(66.7%) were males and 2(33.3%) were females. Out

82 of the patients with herpes genitalis, 5(83.3%) were males while 1(16.7%) were females

83 Urethral discharge was the presentation in 11(35.5%) of them. Out of these, 11(72.7%) had
84 gonococcal urethritis while 3(27.3%) had non- gonococcal urethritis. Some of the
patients
85 had mixed infections. The overall commonest STI was gonococcal urethritis. Table 3.

86 Occasional use of condom ($\chi^2 = 6.482$, $df = 1$, **P- value** = 0.039) and previous history of
STI
87 ($\chi^2 = 4.644$, $df = 1$, **P- value** = 0.031) were statistically significant with Gonococcal
urethritis.

88 Dyspareunia ($X^2 = 15.708$, $df = 1$, **P-value** = 0.000) was also statistically significant
inpatient

89 that had trichomoniasis. (All tables should follow results presentation).

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91 **DISCUSSION**

92 STI is responsible for a lot of health problems such as infertility, abortion, ectopic
pregnancy,

93 chronic pain and menstrual irregularities. Apart from health problems, the social
stigma

94 associated with STI is quite enormous especially in developing countries.

95 In our study, the mean age was 29.39 years ranging from 15 to 57 years. Most of the
patients

96 (51.6%) (Statistics not correct) were sexually active. The mean age and age predominance
of patients were similar (Statement not correct)

97 to that found in other studies [16,17].

98 Males constituted 64.5% and females 35.5% of the patients with female to male
ratio of

99 1:1.82. The male predominance is similar to what was documented from other studies
100 [2,16]. This male predominance pattern might be as a result of social and cultural stigma
101 associated with female's attendance of public STI clinic and also asymptomatic nature of
102 the infection

among
females.

103 The overall commonest STI was gonococcal urethritis (25.8%). This is contrary to
104 other studies in which viral STI were the overall commonest [1,2,16,17] but the
105 prevalence is similar to that of a previous study in a developing country [18]. This
106 finding suggests that the prevalence of bacterial STI might still be high in some
107 developing countries compared to the

changing trends of viral STI becoming the overall commonest in developed
countries.

108 Our study showed a relatively higher incidence of gonococcal urethritis than non-
109 gonococcal urethritis among patients that presented with Urethral discharge. This is
110 similar to what has
been documented in other literatures [19,20].

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The second trichomoniasis followed by herpes genitalis and genital warts with the same prevalence
commonest (19.4%) then HIV (3.2%) and Chancroid (3.3%). Chancroid seems to be on the
STI from this downward trend as evident from previous studies [2,17]. The
study was low prevalence of HIV has also been reported in previous studies [16,21].

115 VDRL reactivity was seen in only two asymptomatic patients and this finding is similar to
116 that of previous studies [2,17,22] and this suggest a decline of syphilis in recent times.

Vaginal candidiasis was the commonest cause of vaginal discharge from this study and is similar to what was found in a previous study [16,23] although some other studies found bacterial vaginosis to be the commonest [16,24].

Condom promotion is not adequate in this study, 38.7% of the patient used condom occasionally while 58.1% never used condom even though majority of them (83.9%) had history of multiple sex partners. This suggest that Education on the use of condom as one of the ways to prevent STI is not adequate.

The significant statistical association between Gonococcal urethritis and occasional use of condom and also previous history of STI further confirms that factors that relate with sexual behaviours are associated with several STI's.

The limitation of this study is the low attendance of patients in our STI clinic even though we have a well equipped laboratory for aetiological diagnosis of STI but this is likely due to the stigma associated with STI in our Country

In conclusion, bacterial STI still constitute the major burden of our STI clinic and this is contrary to the recent trends of viral STI constituting the major burden in other parts of the world. The inadequate condom promotion as evident from this study might be responsible for this. Awareness of condom use as one of the ways to prevent STI should be increased and physician should not be on the look out for viral STI but bacterial STI as well

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206 **Table 1: Socio-demographic characteristics of the respondents (N=31)**

Variables	Frequency	Percentage
Age groups (in years)		
≤ 25	15	48.4
>25	16	51.6
Sex		
Male	20	64.5
Female	11	35.5
Occupation		
Student	9	29.0
Professional	2	6.5
s Civil	2	6.5
servant	18	58.1
Business/Trad e		
Education		
Secondary	16	51.6
Tertiary	15	48.4
Marital status		
Single	21	67.7
Married	10	32.3
Religion		
Christianity	16	51.6
Islam	15	48.4
Tribe		
Yoruba	23	74.2
Others	8	25.8

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209 **Table 2: Sexual behaviours of Respondents (N =31)**

Variables	Frequency	Percentage
Last coitus		
A week	9	29.0
A month	13	41.9
>a month	9	29.0
Condom use		
Always	1	3.2
Occasionally	12	38.7
No/Never	18	58.1
Type of sex		
Vaginal	30	96.8
Vaginal and anal	1	3.2
Sex partner		
Single	5	16.1
Multiple	26	83.9
Number of present sex partners		
1	16	51.6
>1	15	48.4
Alcohol		
Yes	8	25.8
No	23	74.2
Previous STI		
Yes	17	54.8
No	14	45.2

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217 Table 3: Type of STI among the respondents (N=31)

Variables	frequency	percentage
HIV Status		
Positive	1	96.8
Negative	30	3.2
VDRL reactive		
Yes	2	6.5
No	29	93.5
Gonococcal urethritis		
Yes	8	25.8
No	23	74.2
Trichomoniasis		
Yes	7	22.6
No	24	77.4
Genital warts		
Yes	6	19.4
No	25	80.6
Herpes genitalis		19.4
Yes	6	80.6
No	25	
Non- gonococcal urethritis		
Yes	3	9.7
No	28	90.3
Vaginal candidiasis		
Yes	8	25.8
No	23	74.2
Chancroid		
Yes	1	3.2
No	30	96.8

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