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A Hospital-Based Observational Study on the Pattern of Sexually Transmitted Infections in Patients Attending a DVL Clinic

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ABSTRACT

Background: Sexually transmitted infections remain an important cause of morbidity in dermatology and venereology practice, and their clinic-based pattern varies across regions and time.
Objectives: To describe the sociodemographic profile, clinical presentation, syndromic and etiological pattern, sexual behavior, risk factors, and selected laboratory findings among patients attending a DVL clinic.
Methods: This hospital-based observational study was conducted on one hundred consecutive patients diagnosed with sexually transmitted infections were included. Demographic details, sexual history, clinical features, syndromic categorization, and laboratory findings were recorded and analyzed using descriptive statistics.
Results: The mean age was 29.8 ± 7.6 years, and 44.0% of patients were aged 21-30 years. Males constituted 58.0% of the study population. Genital discharge was the commonest presenting complaint [36.0%], and genital discharge syndrome was the predominant syndromic category [36.0%]. Genital herpes was the most frequent sexually transmitted infection [22.0%], followed by genital warts [18.0%] and syphilis [14.0%]. Unprotected sexual exposure [72.0%] and inconsistent or absent condom use [68.0%] were the leading risk factors. VDRL reactivity was observed in 14.0% of patients and HIV seroreactivity in 9.0%.
Conclusion: The study showed that sexually transmitted infections in this DVL clinic predominantly affected young adults, with a greater burden among men. Viral sexually transmitted infections, especially genital herpes, formed the leading diagnostic group. The findings support continued emphasis on early clinic attendance, syndromic evaluation supported by targeted laboratory testing, risk-reduction counseling, condom promotion, and routine screening for syphilis and HIV in STI clinic settings.

Keywords: *sexually transmitted infections; DVL clinic; genital herpes; syndromic management; risk behavior; HIV seropositivity.*

INTRODUCTION

Sexually transmitted infections [STIs] continue to represent a substantial clinical and public health burden because they sustain ongoing transmission, contribute to genital morbidity, increase the risk of pelvic inflammatory disease and adverse reproductive outcomes, and facilitate human immunodeficiency virus [HIV] acquisition and transmission [1,2]. In routine practice, the STI case mix encountered in specialty clinics is shaped by local sexual behavior, gender-related healthcare access, referral patterns, laboratory support, and evolving pathogen epidemiology [3]. For this reason, hospital-based data from dermatology, venereology and leprosy [DVL] clinics remain valuable for understanding the prevailing profile of disease in a given region.

Indian studies conducted over the last two decades have consistently shown that the epidemiology of STIs is dynamic rather than static. Earlier tertiary-care reports documented substantial burdens of genital ulcer disease and bacterial STIs, whereas later studies increasingly highlighted the growing contribution of viral infections such as genital herpes, genital warts, and molluscum contagiosum [4,5]. A ten-year retrospective study by Narayanan observed genital ulcer diseases as the dominant category, while Ray and colleagues demonstrated changing trends over time with a rise in viral STIs and syphilis in a major regional STD centre [4,5]. Subsequent studies from different parts of India reported regional variability, underlining the need for periodic local audits instead of relying solely on older or geographically distant data.

Syndromic case management remains central to STI care in many resource-constrained settings because it allows treatment at the first visit and reduces delay in care; however, its limitations are also well recognized, particularly for vaginal discharge syndromes and mixed infections [6,7]. Etiology-based confirmation, when feasible, improves diagnostic precision, supports surveillance, and helps identify coexisting infections such as syphilis, candidiasis, trichomoniasis, and HIV [6,7]. In addition, behavioral variables such as condom use, unprotected intercourse, multiple partners, and contact with commercial sex workers continue to influence clinic-level STI patterns and remain critical targets for counseling and prevention.

Despite the continued relevance of STIs, contemporary data from many institutional DVL clinics are limited, and local evidence from Telangana is comparatively sparse in the published literature. A structured description of the sociodemographic profile, syndromic pattern, etiological distribution, and associated risk behavior among STI attendees can assist clinicians in refining diagnostic suspicion, planning counseling messages, and strengthening screening practices for syphilis and HIV. The objectives of the present study were to describe the sociodemographic characteristics of patients diagnosed with STIs attending a DVL clinic, analyze their clinical and syndromic presentation, determine the distribution of common STI diagnoses with sex-wise patterns, and assess associated sexual behavior, risk factors, and selected laboratory findings.

METHODOLOGY

Study design and setting

This hospital-based observational study was carried out in the Department of Dermatology, Venereology and Leprosy, Mamata Academy of Medical Sciences, Hyderabad, Telangana, India, over a 12-month period from February 2025 to January 2026. The study was designed to document the clinic profile of patients presenting with sexually transmitted infections in a tertiary-care DVL setting, where patients are evaluated using a combination of clinical examination, syndromic assessment, and targeted laboratory testing [5,6,].

Study population and sampling

The study included 100 consecutive patients diagnosed with sexually transmitted infections during the study period. Consecutive sampling was used to reduce selection bias within the clinic population. Adult patients presenting with symptoms, signs, or examination findings suggestive of an STI and subsequently confirmed on clinical, syndromic, or etiological grounds were eligible for inclusion. Patients who were unwilling to participate, those attending for follow-up of the same episode after prior enrollment, and those with non-venereal genital dermatoses without evidence of STI were excluded.

Clinical evaluation and data collection

After registration in the outpatient clinic, each patient underwent a detailed evaluation in a confidential setting. A structured proforma was used to record age, sex, marital status, residence, occupation, presenting complaints, sexual exposure history, condom use, number of partners, past history of STI, and substance use. A focused genital examination was performed, supplemented by general physical examination and relevant systemic assessment wherever indicated. Clinical presentations were categorized into common syndromic groups such as genital discharge syndrome, genital ulcer disease-herpetic, genital ulcer disease-non-herpetic, ano-genital wart syndrome, and lower abdominal pain syndrome, in line with accepted STI clinic practice and published syndromic literature [9,13].

Laboratory investigations and diagnostic categorization

Relevant investigations were performed according to the presenting syndrome and provisional diagnosis. Serological screening for syphilis using the Venereal Disease Research Laboratory [VDRL] test and HIV testing after appropriate counseling were undertaken as part of the clinic work-up. Gram stain was used in patients with urethral or cervical discharge suggestive of gonococcal infection. Potassium hydroxide mount was performed for suspected vulvovaginal candidiasis, wet mount examination for Trichomonas vaginalis, and Tzanck smear in selected cases with clinically suspected genital herpes. Final diagnostic categorization was based on the combined interpretation of history, examination findings, syndromic classification, and available laboratory results.

Data handling and statistical analysis

All collected data were entered into a master spreadsheet and checked for completeness and consistency before analysis. Descriptive statistics were used for data presentation. Continuous variables were summarized as mean and standard deviation, whereas categorical variables were expressed as frequencies and percentages. The results were tabulated under sociodemographic profile, clinical presentation, STI pattern, sex-wise distribution, sexual behavior and risk factors, and laboratory findings.

Ethical considerations

Ethical approval was obtained from the Mamata Academy of Medical Sciences, Hyderabad, Telangana, India. Written informed consent was obtained from all participants before enrollment, and confidentiality of patient identity and sexual history was maintained throughout the study.

RESULTS

A total of 100 consecutive patients diagnosed with sexually transmitted infections were included in the present hospital-based observational study. All enrolled patients underwent clinical evaluation, relevant laboratory investigations, and syndromic or etiological categorization. The study population comprised 58 males and 42 females, yielding a male-to-female ratio of 1.38:1. The mean age of the study population was 29.8 ± 7.6 years, and the highest proportion of patients belonged to the 21-30 year age group [44.0%]. Most participants were married [62.0%], and urban residents constituted 56.0% of the study population. With respect to occupation, daily wage workers and laborers formed the largest group [28.0%], followed by homemakers [20.0%]. The detailed sociodemographic and occupational profile is shown in Table 1.

Table 1. Sociodemographic and occupational profile of the study population [n = 100]

Variable	Category	n	%
Age group [years]	18-20	10	10.0
	21-30	44	44.0
	31-40	32	32.0
	41-50	11	11.0
	>50	3	3.0
Sex	Male	58	58.0
	Female	42	42.0
Marital status	Married	62	62.0
	Unmarried	38	38.0
Residence	Urban	56	56.0
	Rural	44	44.0
Occupation	Daily wage workers/laborers	28	28.0
	Homemakers	20	20.0
	Drivers	14	14.0

Variable	Category	n	%
	Students	12	12.0
	Private employees	11	11.0
	Others	15	15.0

Genital discharge was the most common presenting complaint, reported in 36.0% of patients, followed by genital ulceration in 24.0% and genital growths or warts in 18.0%. When categorized syndromically, genital discharge syndrome was the most frequent pattern [36.0%], followed by genital ulcer disease-herpetic [22.0%], genital ulcer disease-non-herpetic [19.0%], and ano-genital wart syndrome [18.0%]. Lower abdominal pain syndrome accounted for 10.0% of cases. These clinical and syndromic findings are summarized in Table 2.

Table 2. Clinical presentation and syndromic pattern among patients with sexually transmitted infections [n = 100]

Parameter	Category	n	%
Presenting complaint	Genital discharge	36	36.0
	Genital ulcer	24	24.0
	Genital growths/warts	18	18.0
	Genital itching/irritation	12	12.0
	Lower abdominal pain with discharge	10	10.0
Syndromic pattern	Genital discharge syndrome	36	36.0
	Genital ulcer disease-herpetic	22	22.0
	Genital ulcer disease-non-herpetic	19	19.0
	Ano-genital wart syndrome	18	18.0
	Lower abdominal pain syndrome	10	10.0

With regard to etiological pattern, genital herpes was the commonest sexually transmitted infection, accounting for 22.0% of cases, followed by genital warts [18.0%], syphilis [14.0%], gonococcal urethritis or cervicitis [12.0%], and non-gonococcal urethritis or cervicitis [11.0%]. Vulvovaginal candidiasis constituted 10.0% of cases, whereas chancroid, molluscum contagiosum, trichomoniasis, and mixed infections were less frequent. Sex-wise analysis showed that genital herpes, genital warts, syphilis, and urethritis syndromes were more common among men, whereas vulvovaginal candidiasis and trichomoniasis were predominantly seen among women. The distribution of STI diagnoses with sex-wise pattern is presented in Table 3.

Table 3. Distribution of sexually transmitted infections with sex-wise pattern [n = 100]

Diagnosis	Male [n = 58]	Female [n = 42]	Total	%
Genital herpes	14	8	22	22.0
Genital warts	12	6	18	18.0

Diagnosis	Male [n = 58]	Female [n = 42]	Total	%
Syphilis	10	4	14	14.0
Gonococcal urethritis/cervicitis	8	4	12	12.0
Non-gonococcal urethritis/cervicitis	7	4	11	11.0
Vulvovaginal candidiasis	1	9	10	10.0
Chancroid	4	1	5	5.0
Molluscum contagiosum	2	2	4	4.0
Trichomoniasis	0	3	3	3.0
Mixed infections	0	1	1	1.0

Risk behavior analysis showed that 72.0% of patients reported unprotected heterosexual exposure and 68.0% reported inconsistent or absent condom use. Multiple sexual partners were documented in 26.0%, past history of STI in 21.0%, and contact with commercial sex workers in 18.0% of cases. Alcohol or tobacco use was noted in 34.0% of participants. Laboratory evaluation showed reactive VDRL in 14.0%, HIV seroreactivity in 9.0%, Gram stain findings suggestive of gonococcal infection in 12.0%, KOH positivity for candidiasis in 10.0%, and wet mount positivity for Trichomonas vaginalis in 3.0% of patients. These findings are detailed in Table 4.

Table 4. Sexual behavior, risk factors, and laboratory findings [n = 100]

Domain	Parameter	n	%
Sexual behavior/risk factors	Unprotected sexual exposure	72	72.0
	Inconsistent/no condom use	68	68.0
	Alcohol/tobacco use	34	34.0
	Multiple sexual partners	26	26.0
	Past history of STI	21	21.0
	Contact with commercial sex workers	18	18.0
Laboratory findings	VDRL reactive	14	14.0
	Gram stain suggestive of gonococcal infection	12	12.0
	KOH positive for candidiasis	10	10.0
	HIV reactive	9	9.0
	Wet mount positive for Trichomonas vaginalis	3	3.0

DISCUSSION

The present study demonstrated that STI clinic attendees were predominantly young adults, with the highest burden in the 21–30 year age group and a modest male preponderance. This age concentration is consistent with the sexually active and economically active period identified in several Indian clinic-based studies [8,9]. The higher proportion of men in the present series is also comparable to many tertiary-care reports and likely reflects differences in symptom recognition, gendered healthcare access, and the tendency of women with genital complaints to present to gynecology services rather than STI clinics [8,10].

In the current study, genital discharge was the most common presenting complaint and genital discharge syndrome was the leading syndromic category. This finding agrees with reports in which discharge syndromes contributed substantially to clinic attendance, particularly among women [9,11]. At the same time, the etiological pattern in our study showed genital herpes as the commonest individual STI, followed by genital warts and syphilis. This observation is in line with several Indian studies documenting the increasing prominence of viral STIs, especially herpes genitalis, in tertiary-care centers [10,12,13]. Vora et al. identified herpes genitalis as the leading STI among males, while recent observational evidence has continued to show the relevance of genital ulcer disease patterns in STI practice [10,13]. Our findings therefore support the view that herpes remains a major driver of current STI clinic morbidity.

The sex-wise pattern in the present study is also notable. Men more often presented with genital herpes, genital warts, syphilis, and urethritis syndromes, whereas women showed a greater contribution from vulvovaginal candidiasis, trichomoniasis, and discharge-related complaints. Similar sex-linked differences in STI clinic profiles have been observed previously, with male attendees more frequently showing ulcerative and wart-related disease and female attendees contributing a larger share of vaginal discharge syndromes [10,11]. These differences are clinically relevant because they influence syndrome-based treatment, counseling priorities, and partner notification strategies.

Risk behavior analysis showed high levels of unprotected sexual exposure, inconsistent condom use, and multiple partnerships. These findings are comparable to the behavioral patterns reported in clinic-based Indian series, which continue to identify unsafe sexual exposure as a central driver of STI transmission [11,14]. The detection of VDRL reactivity in 14.0% and HIV seroreactivity in 9.0% of participants further reinforces the need for integrated screening in STI clinics. Earlier Indian studies have shown that HIV seropositivity is frequently associated with ulcerative STIs, highlighting the clinical and epidemiological linkage between these conditions [11,12].

An important implication of the present study is the continued relevance of syndromic management, but with deliberate laboratory support wherever feasible. Published evidence has shown that syndromic algorithms are practical and useful in resource-limited settings, yet their performance is weaker for certain discharge syndromes and mixed infections [12,14]. The present findings therefore support a balanced DVL clinic approach in which prompt syndromic treatment is complemented by targeted investigations such as VDRL, HIV testing, Gram stain, KOH mount, and wet mount examination.

Limitations

This was a single-center hospital-based observational study with a modest sample size, so the findings reflect the clinic population rather than the community burden. Etiological confirmation through advanced molecular diagnostics was not available for every syndrome. Follow-up data, partner evaluation, treatment outcomes, and recurrence patterns were not assessed. Some sexual behavior variables depended on self-reporting and were vulnerable to under-reporting because of stigma.

CONCLUSION

This hospital-based observational study showed that sexually transmitted infections in a tertiary-care DVL clinic were concentrated in young adults and occurred more often in men than in women. Genital discharge was the most common presenting complaint, whereas genital herpes was the most common individual diagnosed STI, followed by genital warts and syphilis. High rates of unprotected sexual exposure and poor condom use highlighted the continuing behavioral drivers of transmission. The coexistence of VDRL reactivity and HIV seroreactivity emphasized the need for routine screening. Local clinic surveillance, early diagnosis, prompt syndromic treatment supported by focused laboratory testing, counseling, partner management, and prevention-focused education remain essential components of STI control in routine practice

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