Original Research Article

Knowledge And Management Of Sexually Transmitted Infections By General Practitioners Of Lahore

Abstract

HIV/AIDS has affected nearly every country on the planet. The effect of this surge has brought all major modes of HIV/AIDS transmission to the attention of public health professionals worldwide. Sexually Transmitted Infections (STIs), which are a major mode of transmission, increases the prevalence of HIV/AIDS by 8-10 fold. The study's aim was to assess knowledge and management of sexually transmitted infections by general practitioners of lahore. A cross-sectional survey, of 518 general practitioners in Lahore, was conducted using structured questionnaires. Descriptive analysis was used to compute means and proportions. According to the findings of this study, 23 percent of UDS and 5 percent of GPs appropriately managed GUS syndromes. However, none of the GPs were found to managed VDS. The GPs were more likely to be trained in syndromic management who managed UDS appropriately (adj. OR: 8.0; 95% CI: 3.2-20.1), and UDS was appropriately managed (adj. OR: 2.7; 95% CI: 2.0-3.6). This study reveals a significant proportion of GPs in Karachi managed STIs. This provides a fantastic opportunity to treat and counsel STI patients and their partners. However, general practitioners lack the necessary skills. As a result, GPs must be trained in STI management in order to avert the impending disaster of HIV/AIDS. This study suggested that practicing doctors, particularly those who are young and female, should get prioritized training in STI care. Even though both the public and business sectors are actively working in this direction, additional efforts are still required.

Key Words: HIV/AIDS, Sexually Transmitted Infections, Urethral Discharge Syndrome, Genital Ulcer Syndrome, Vaginal Discharge Syndrome, General Practitioner

1. INTRODUCTION

Sexually Transmitted Infections (STIs) are spread between partners through sexual activity, most commonly vaginal intercourse, oral sex, or anal sex [1]. The infections were commonly known as venereal diseases (VD) until around 1990, when public health officials introduced the new term to improve the clarity of their public warnings. STIs probably have been around for thousands of years, but the most dangerous of these conditions, the acquired immunodeficiency syndrome (AIDS), has only been recognized in the early eighties [2]. The STI is also known as an STD (Sexually transmitted Disease).

1.1. STI Epidemiology

The STIs are caused by a host of factors categorized into; The physiological micro environment consist of microbiologic, hormonal and immunologic environment of the vaginal canal and /or urethra and penile lesions which determines the intra and extra-cellular presence, longevity and transmission capacity of the sexually transmitted organism The behavioural and personal environment depicts high-risk individuals' sexual behaviours and substance use, whereas the sociocultural macro environment depicts the socioeconomic, demographic, and political behaviours of the society in which the high-risk individual lives [3-4].

1.2. STI Diagnosis

STIs are currently managed in many countries using clinical or etiologic diagnosis with incomplete diagnostics [5]. This method is unreliable because many co-infections are missed.

1.3. Global disease burden

According to the World Health Organization (WHO), 340 million new cases of STIs are reported each year [6].

South and Southeast Asia has the highest number of new infections, estimated at 151 million, followed by Sub-Saharan Africa, Latin America, and the Caribbean. However, Sub-Saharan Africa has the highest rate of new cases per 1000 population. [7].

1.4. Disease burden at the local level

Pakistan does not have reliable data on the prevalence and incidence of various STIs. However, data from four provincial capitals' tertiary care centres show that 27.5 percent of 465 STI patients had gonorrhoea, 31.6 percent had syphilis, 17.2 percent had Chancroid, 18.3 percent had Herpes, and 5.2 percent had various forms of Chlamydial infections.

1.4.1 The HIV-STI relationship

Several studies now show that STIs, both ulcerative and non-ulcerative, increase HIV transmission [9-10]. HIV appears to change the natural history of some STIs [9]. HIV has also been isolated from both male and female genital ulcer exudates [11].

1.5. STI Health, Social, and Economic Consequences

STIs have the greatest impact on women and children [12]. Morbidity and mortality due to STIs, excluding HIV, are second only to maternal causes in women aged 15 to 44.

In Pakistan, we have all risk factors discussed in the STI epidemiology. To begin with, 40.0% of Pakistanis are of reproductive age. Secondly, a study of the country's largest city found that migration accounts for 1.9 percent of urban growth (annual increase), while natural growth in urban areas accounts for 2.6 percent, annum. This pattern would be consistent with the rest of the country. Thirdly, traditional health-care providers have a huge influence on society's health-care seeking behaviours. The practice of male circumcision is most likely the most important factor responsible for slowing HIV transmission in Pakistani society.

These factors may cause Pakistan to move from a low to a high prevalence country for HIV/AIDS, implying that complacency is inappropriate.

1.6. Study's objectives

1.Determine the proportion of general practitioners (GPs) who treat STI patients.

2.To identify the factors that influence management of STIs by GPs.

3. To assess the proportion of GPs who manage the three most common STI syndromes, namely Urethral Discharge Syndrome (UDS), Genital Ulcer Syndrome (GUS), and Vaginal Discharge Syndrome (VDS) (VDS)

4. To identify the factors that influence whether or not GPs in Karachi appropriately manage the three most common STI syndromes in their private practices.

2. METHODS

2.1. Research design

The study's goals were accomplished using a descriptive cross-sectional study design. The clinics and hospitals where the GPs maintained their private practice served as the study's location. The location of this study was Lahore, Pakistan.

2.1.1 inclusion criteria of study:

1. All Lahore general practitioners who see more than 40 patients per day

2.MBBS or a comparable degree. (As acknowledged by the Pakistan Medical and Dental Council)

The general practitioners (GPs), who later participated in the study, provided an informed consent.

2.2. Sampling procedures

The GPs were chosen, using a basic random sampling procedure, which usesa probability sample.

2.3. Sample size

The estimated sample size was 518.

2.4. Data Gathering Instrument

To learn more about the percentage of Karachi's general practitioners that treated STIs and any possible contributing variables, a survey questionnaire in English was created. Additionally, data on the suitability of managing three STI syndromes and any relevant contributing variables was gathered.

2.5.1 Descriptive Analysis

The statistical package for social sciences (SPSS version 11.5 for Windows) was used to analyses the data [14]. The analysis ran the frequencies and ratios. Age, educational level, male to female ratio, number of patients managed per day, number of STI patients managed every month, time spent with each patient, percentage of GPs handling STIs, and other factors were all given descriptive data.

2.5.2. Univariate Analysis

Since the study's goals were to identify the variables that influence whether, or not a general practitioner (GP) effectively handles three STI syndromes (Objective 4), as well as whether, or not they do so, three distinct univariate analyses were carried out.

2.5.3. Multiple Logistic Regression

For goals 2 and 4, we created three multivariable models: one to determine whether, or not a doctor treats STI patients, and the other two to determine whether, or not a doctor treats STI syndromes, like GUS and UDS, adequately. However, as was already indicated, the model for VDS could not be created because it was discovered that none of the GP was properly managing the condition.

3. RESULTS

518 of the 532 GPs responded. This research had a response rate of 97.4%.

3.1. Percentage of GPs who treated STI patients

Almost all of the GPs(99.7%) managed UDS, 77.0% managed GUS, and 27.0 % managed VDS.

Percentage of doctors who treated three STI symptoms appropriately (Table 1) Only 23.0% of GPs who handled UDS did it in an appropriate manner.

Table 1 shows the proportion of general practitioners (n=387) who manage three STI symptoms and the appropriateness of their knowledge of STI care. More than 387 general practitioners weree combined, indicating an overlap.

3.2. Descriptions of the traits

3.2.1. Sociodemographic characteristics of GPs

(Table 2) Males made up 71.0% of the general practitioners (GPs) interviewed; their average age was 40.5 years (+8.5); and they mostly completed their internships in medicine and surgery (57.9%) as opposed to medicine and gynaecology and medicine and dermatology (22.0% and 20.0% respectively).

Only a quarter of these GPs (27.1%), who make up 30.0% of the group, had ever heard of the idea of syndromic treatment of STIs.

Table 2 lists the demographics of the general practitioners(n=518) in Karachi who were treating three STI syndromes in the study..specialised areas beyond of those already listed.

Table 2a

These doctors saw an average of 3.6 (1.2) STI patients every month, which was a small proportion of the 71.1(14.4) regular patients seen on an average day.

Table 2a lists the characteristics of Karachi's general practitioners who were examined on management of STI patients (n=518).

3.3 Logistic regression analysis

Univariate analysis to determine the variables that influence whether a GP handled STI patients:

(Table 3) Compared to GPs who did not treat STI patients, those who did were more likely to manage when the number of their daily patients grew by 25, maintain patient privacy while managing STI patients, and be hired by the government.

Table 3: Univariate Odds Ratio and 95% confidence intervals (CI) of variables influencing whether or not general practitioners in Karachi, Pakistan, handled STI patients (n=518). The impact of the daily patient increase of 25 patients has been noted.

3.4. Multivariable Logistic Regression Model to determine the variables influencing whether a GP consulted STI patients or not:

(Table 4)

Compared to GPs, who did not consult STI patients, STI patient-managing GPs were more likely to be under the age of 34, work for the government, and maintain their privacy.

As their daily patient load grew by 25 patients, these GPs were more likely to treat STI patients.

Table 4: Adjusted odds ratios and 95% confidence intervals (CI) of variables influencing whether, or not general practitioners in Karachi, Pakistan,consulted with STI patients (n=518)

1. Based on quartile analysis, the age was dichotomized (1st quartile midpoint: 34; 2nd – 4th quartile midpoint: 34).
2. The impact of the average number of patients seen each day increasing by 25 patients is documented.

3.5. Univariate analysis to determine the variables that influence whether a general practitioner (GP) correctly manages Genital Ulcer Syndrome (GUS):

(Table 5)

The GPs in Karachi who properly handled GUS patients were less likely to do so as their ages grew; younger GPs would have adequately controlled GUS, resulting in a fee increase of Rs. 50/-

Table 5: Univariate Odds Ratio and 95% confidence intervals (CI) of variables related to Karachi's general practitioners' ability to treat genital ulcer syndrome effectively (n = 298). The impact of the user fee's rise of Rs. 50/- was reported.

Medicine and surgery was created by combining medicine and gynaecology and medicine.

3.6. Multivariable Logistic Regression Model for Determining Factors Associated With Management of Genital Ulcer Syndrome (GUS) by a General Practitioner:

(Table 6) Compared to the GPs who did not treat GUS correctly, the GPs who did so may have completed their internships in dermatology and medicine. The charge was raised by Rs.50/- as a result of GPs managing GUS patients properly.

Table 6: Adjusted Odds Ratio and 95% Confidence Intervals (CI) of variables influencing whether general practitioners in Karachi, Pakistan, effectively handled genital ulcer syndrome (n=298)

The user fee's impact was stated for the Rs.50/- increase. Combining medicine and gynaecology and medicine created medicine and surgery.

3.7. Univariate study was conducted to determine the variables that influence whether a general practitioner (GP) correctly addressed urethral discharge syndrome (UDS):

(Table 7) General practitioners who handled UDS well were more likely than those who did not to have had training in syndromic treatment and to be hired by the government.

GPs were more likely to treat UDS effectively as the number of STI patients rose.
GPs were less likely to treat UDS patients properly as they aged.
Table 7: Univariate Odds Ratio and 95% confidence intervals (CI) of variables influencing whether general practitioners in Karachi, Pakistan, treated urethral discharge syndrome correctly (n = 386). Zero cell counts precluded further analysis of internship

3.8. Multivariable logistic regression model to determine the variables that influence whether or not a GP managed UDS

(Table 8) Compared to GPs who improperly handled UDS, the former were more likely to have received training in syndromic care. (adj.OR: 8.0; 95%CI: 3.2 - 20.1) These GPs were more likely to handle UDS well as the number of STI patients rose (adj.OR: 2.7; 95% CI: 2.0 - 3.6).
Adjusted Odds Ratio and 95% Confidence Intervals (CI) of variables influencing whether Karachi's general practitioners treated urethral discharge syndrome correctly (n = 386).

4. DISCUSSION

According to the current survey, three-fourths of Karachi's general practitioners manage STIs. However, it does not accurately depict the situation because not all of these clinicians do so. The potential to treat STI patients and their partners as well as to counsel them on many elements of risk factor reduction is greatly diminished by the poor level of proficiency in STI care. As a result, there is little overall impact on breaking the chain of STI transmission.
According to research done in Karachi, 80.0% of GPs treated STIs [15].
Even then, only 44.0% of the GPs were found to appropriately manage UDS, compared to 23.0% in the current research. According to the current study, even a lower percentage of GPs were discovered to be correctly managing GUS and none managed VDS. Because the current study adhered to the WHO standards for the care of syndromic conditions, the mismatch in percentage was discovered.
The current study indicates that there are extremely few STI patients visiting general practitioners. In this study, a general practitioner (GP) treated a maximum of twelve STI patients in a month, with a mean of 3.6 (1.2). We assume that cultural influences, [16–17] a lack of knowledge about the person engaging in risky behaviours related to STIs [18] and inappropriate management provided by the GP are the factors that drive the patient to seek assistance from the informal sector or, more likely, be content with self-medication [16]. This amplifies the need for increased public knowledge of STIs and for GP training in STI care. The current study also reveals that GPs who treated STIs were more likely to be under 34 years of age and work for the government.
The GPs with effective GUS and UDS management were more likely to be skill-based. Studies suggest that in areas where healthcare professionals have received syndromic training, the outcomes have significantly improved [19–20]. In the current investigation, it was discovered that, none of the GPs were managing VDS) well. This critical but sometimes overlooked aspect of VDS care have to be the focus of CME programmes.
Although the incidence of HIV/AIDS is still low in Pakistan, the rise in the number of HIV/AIDS patients, over the past several years, is a strong indicator that preventative measures must be developed. Investments in STI awareness, in general, and training of GPs in identifying and treating at least major STI syndromes, in particular, are projected to significantly reduce the approaching burden of STIs and HIV/AIDS. This is because STIs play a significant role in the transmission of HIV/AIDS.

5. CONCLUSION

The results of this study show that while though three-fourths of Karachi's general practitioners (GPs) treat STI patients in their private practises, only a small percentage of these clinicians are capable of providing proper care. This study also demonstrates that the management of STIs is not reliant on knowledge or expertise. In the current study, it was discovered that GPs' understanding of VDS was insufficient, bringing attention to the problem of gender equity in access to effective STI treatment.

6. RECOMMENDATIONS

This study suggests that STI management be covered in the medical curriculum at the undergraduate level. The curriculum should be done in order to introduce the idea of syndromic management to all medical graduates. This study suggests that practising doctors, particularly those who are young and female, should get prioritised training in STI care. Even though both the public and business sectors are actively working in this direction, additional efforts are still required.

Declaration

a. Funding

There were no particular grants awarded to the research from funding organisations in the public, private, or not-for-profit sectors.

b. Competing interests and conflicts of interest

The author did not disclose any competing or conflicting interests.

c. Data and material accessibility

Not relevant

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Not relevant

d. Code accessibility

Not relevant

e. Ethics clearance

The University of Lahore's Research Ethics Committee and University Institute of Public Health Committee awarded its ethical permission.

g. Acceptance of participation

Yes, permission was received.

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Table 1: Percentage of GPs managing three STI syndromes and appropriateness of their knowledge regarding STI management (n=387)

STI Syndrome	Number of GPs managing STI Syndromes n*	Appropriate management n (%)	Inappropriate management n (%)

Urethral Discharge Syndrome (UDS)	386	90 (23.3)	296 (76.7)
Genital Ulcer Syndrome (GUS)	298	16 (5.4)	282 (94.6)
Vaginal Discharge Syndrome (VDS)	106	0 (0.0)	106 (100)

Table2: Demographic characteristics of the study population (GPs) managing three STI syndromes in Karachi (n=518)

Variables	n	(%)	Mean (±SD)
Age	518	100	40.5 (±8.5)
Sex Female Male	149 369	28.8 71.2	--
Post-graduation None (MBBS only) Gynecology Dermatology Others*	 368 86 16 48	 71.0 16.6 3.1 9.3	--
Internship Medicine& surgery Medicine & gynecology Medicine & dermatology	 300 112 106	 57.9 21.6 20.4	--
Facility Clinic Hospital	 419 99	 80.9 19.1	--
Training in Syndromic Management of STIs Never Ever	378 140	72.9 27.1	--
Socioeconomic area of Practice Upper Middle Lower	118 189 211	22.8 36.5 40.7	--
Nature of Employment Private Government	 398 120	 76.8 23.1	--

Table 2a: Practice-related characteristics of the GPs studied for managing STI patients in Karachi (n=518)

Variables	n	(%)	Mean (±SD)
Manage STI patients No Yes	 131 387	 25.3 74.7	--
Privacy in facility No Yes	 121 397	 23.4 76.6	--
Number of patients seen daily	518	100	71.1 (±14.4)
Number of STI patients seen per month	518	100	3.6 (±1.2)
Time spent per patient (in minutes)	518	100	2.7 (±1.3)
User fee (Rs)	518	100	83.40 (±40.30)

Table 3. Multivariable Logistic Regression Model for identifying factors associated whether or not a GP managed STI patients:

Variables	Manage		Odds Ratio	95% CI
	yes	no		
Age	--	--	0.56	0.48 – 0.65
Number of patients seen daily*	--	--	3.91	2.1 – 7.2
Time spent per patient (time in minutes)	--	--	1.46	0.97 – 2.05
Number of STI patients seen per month	--	--	1.52	0.96 – 2.13

Privacy in facility No Yes	61 325	59 73	1.0 4.31	-- 2.83 – 6.55
Nature of Employment Private Government	273 113	125 7	1.0 7.39	-- 3.3 – 16.4
Training in Syndromic Management Never Ever	281 105	97 35	1.00 1.04	-- 0.66- 1.63
Internship Medicine & surgery Medicine & dermatology	310 80	102 26	1.00 1.01	-- 0.63-1.63

Table 4: Adjusted Odds Ratio and 95% confidence intervals (CI) of factors associated with whether or not the GPs managed STI patients in Karachi, Pakistan (n=518)

Variables	Adjusted Odds Ratio	95% CI
Age [3]34 <34	1.0 18.9	-- 8.6 – 41.7
Nature of Employment Private Government	1.0 12.2	-- 4.5 - 33.1
Privacy in facility No Yes	1.0 2.4	-- 1.7 – 3.4
Number of patients seen daily[2]	1.34	1.13 – 1.56

Table 5: Univariate Odds Ratio and 95% confidence intervals (CI) of factors associated with whether or not the GPs appropriately managed Genital Ulcer Syndrome in Karachi (n= 298)

Variable	Manage GUS		Odds Ratio	95% CI
	Appropriate	Inappropriate		

Age	--	--	0.90	0.83- 0.99
User fee* (in rupees)	--	--	17.8	3.8 – 83.1
Number of STI patients seen per month	--	--	1.04	0.90-1.10
Number of patients seen daily	--	--	1.2	0.97 – 1.40
Time spent per patient	--	--	1.03	0.80 – 1.25
Internship Medicine & Surgery [a] Medicine & Dermatology	 15 35	 228 20	 1.0 26.6	 -- 12.4 – 56.8
Nature of employment Private Government	 153 71	 60 14	 1.0 1.98	 -- 1.04-3.7
Privacy No Yes	 5 71	 16 206	 1.0 1.10	 -- 0.39-3.09
Training in syndromic management Never Ever	 79 174	 15 30	 1.0 1.1	 -- 0.56 – 2.15

Table 6: Adjusted Odds Ratio and 95% confidence intervals (CI) of factors associated with whether or not the GPs appropriately managed Genital Ulcer Syndrome in Karachi, Pakistan (n=298)

Variables	Adjusted Odds ratio	95% CI
Internship Medicine & surgery[a] Medicine & dermatology	 1.0 18.2	 -- 5.52 - 100.9
User fee*	3.8	1.9- 7.5

Table 7: Univariate Odds Ratio and 95% confidence intervals (CI) of factors associated with whether the GPs appropriately managed Urethral Discharge Syndrome in Karachi, Pakistan (n = 386)

Variable	Manage UDS		Odds Ratio	95% CI
	Appropriate	Inappropriate		
Age	--	--	0.90	0.80 – 0.98
Number of STI patients per month	--	--	2.5	2.0 - 3.2
User fee	--	--	1.0	0.9 – 1.1
Time spent per patient	--	--	1.05	0.92 – 1.4
Number of patients seen daily	--	--	1.1	0.96 – 1.5
Training in Syndromic Management Never Ever	 30 69	 251 36	 1.0 16.0	9.4 – 27.1
Employment Private government	 67 46	 206 67	 1.0 2.1	 -- 1.32- 3.32
Privacy No Yes	 35 231	 26 94	 1.0 1.82	 -- 1.22-3.19

Table 8: Adjusted Odds Ratio and 95% confidence intervals (CI) of factors associated with whether or not the GPs appropriately managed Urethral Discharge Syndrome in Karachi (n=386)

Variables	Adjusted Odds Ratio	95% CI
Training in Syndromic Management No Yes	 1.0 8.0	 -- 3.2 – 20.1
Number of STI patients seen	2.7	2.0 – 3.6