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A CROSS SECTIONAL STUDY TO DETERMINE THE DELAYED HIV DIAGNOSIS AND ITS CORRELATION WITH DIFFERENT VARIABLES AMONG HIV/AIDS PATIENTS IN PAKISTAN

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Abstract: **Early identification of Human Immuno deficiency virus (HIV) and administration of treatment can aid HIV infected individuals to live longer principally off-loading HIV-related illness. Delayed presentation to healthcare facility means a CD4 count lower than 350 cells/ml, can result in unfortunate results for patients. The study was aimed to determine the frequency of delayed HIV diagnosis among HIV/ AIDS patients receiving antiretroviral therapy (HIV-ART) from HIV clinics of public hospitals.**

Material and Methods: A cross-sectional study was conducted at HIV clinics of two tertiary care hospitals namely; X and Y located in the district of Lahore, Punjab, Pakistan. The study participants were selected from HIV /AIDS patients visiting the HIV clinics for their regular follow-up and data was collected for a duration of four months starting February, 2018 to May, 2018.

Results: The data from 235 patients was collected and it was observed that an overwhelming number of i.e. 87 (37%) patients' diagnosis of HIV was delayed whereas 148 (63%) patients diagnosed early with HIV.

Keywords: **Delayed, presentation, diagnosis, virus, antiretroviral, barriers.**

I. INTRODUCTION

Sexually transmitted infections (STIs) are a global issue which can result in disastrous outcomes like pelvic inflammatory disease, contrary pregnancy outcomes, infertility, rheumatological complications, cancer, organ damage and death (Denison et al., 2017). To eliminate the HIV/AIDS across the globe, the public health community has established striving treatment goals, one of those goals is to lower the HIV viral load to a certain level, maximizing the chances for immunological recovery and minimizing the risk of HIV transmission. (Drain et al., 2019). The expanding use of web based sexual wellbeing mediations stress the issues like inescapable transitions in health administration and the sustained need of approaching individuals with limitations to proper care for those who are vulnerable to sexually transmitted and bloodborne infections (Gilbert et al., 2018). Early identification of HIV and administration of treatment can aid HIV infected individuals to live longer principally off-loading HIV-related illness. Delayed presentation to healthcare facility means a CD4 count lower than 350 cells/ml, can result in unfortunate results for patients (enhanced chances of morbidity and mortality) in addition to more expenses for treatment programmes (Mayston et al., 2016). Delayed presentation to healthcare facility is linked with Internationally, delayed initiation of HIV care has been associated with patient's variables like gender, race, literacy, drug and poverty (Neduzhko et al., 2017). Most of the studies concerning the problem

of HIV involve the patients previously registered in HIV programmes that is why, very limited information is available regarding the barriers to the availability of antiretroviral therapy (ART) for HIV infected individuals and barriers for healthcare workers to reveal the HIV positive status to the patients due to HIV-related stigmas (Madiba & Mokgatle, 2017).

The study was aimed to determine the frequency of delayed HIV diagnosis among HIV/ AIDS patients receiving antiretroviral therapy (HIV-ART) from HIV clinics of public hospitals.

II. MATERIALS AND METHODS

Study design:

A cross-sectional study was conducted.

Study area:

The study was carried out at HIV clinics of two tertiary care hospitals namely; X and Y located in the district of Lahore, Punjab, Pakistan.

Study population:

The study population consisted of HIV /AIDS patients visiting the HIV clinics for their regular follow-up

Study duration:

Study was conducted for a duration of four months starting February, 2018 to May, 2018.

Sampling technique:

The subjects were selected by using systematic random sampling method form these selected HIV clinics of the respective hospitals. The selection of the first subject was made randomly from first three subjects afterward every third patient was enrolled in the study.

Sample size:

The sample size was calculated by using the single proportion formula after considering 50% proportion of delayed HIV testing with 5% margin of error at 95% confidence level. Accordingly, the calculated sample size was 384. However, due to the decreased response from patients, it was only possible to collect data from 235 patients.

Inclusion criteria:

Both male and female HIV/ AIDs patients under treatment, who were aged more than

15 years, were included in the sample.

Exclusion criteria:

The patients with acute HIV/ AIDS infection, patients under the age of 15 years, or

women with pregnancy or breastfeeding, or the patients not giving the consent were excluded from the study.

Data collection:

The data were collected by conducting a face to face interview of patients and reviewing patient's medical files using a structured questionnaire (Appendix II). The information sought included (1) demographic and socioeconomic characteristics of the patients such as; age (measured in years), gender, marital status, level of education, body mass index (BMI), employment before and after HIV diagnosis, family monthly's income (PKR), provincial distribution, district, area of residence, and religion; (2) barriers related to delayed HIV testing including stigma and discrimination, Feeling no risk of acquiring HIV, Fear of HIV, accessibility, affordability, and time barriers.

Operational Definition of outcome variable:

The outcome variable was delayed HIV testing in patients which was defined as any patient who has at least one of the following:

- An initial CD4 cell counts below 200 (cells/mm^3) within 1 year of first positive HIV test.

OR

- The patients whose HIV infection was confirmed by HIV PCR after more than three months of HIV diagnosis by positive HIV screening/ Elisa.

Statistical Analyses

For categorical variables, frequency distribution was computed i.e. mean values (±standard deviation) and median values (with interquartile range (IQR). Chi-Square test was used to find the association of delayed HIV testing with various independent factors.

III. RESULTS

Data for different variables was collected from a total of 235 HIV/AIDS patients visiting HIV clinics of two largest public sector hospitals X (n = 158) and Y (n = 77), Lahore. Table 1 describes the socio-demographic characteristics of the study participants. Most of the patients were between the ages of 26-40 years 157 (66%) with mean age of 35 years, males 174 (74%), ever married 162 (69%), had no schooling 74 (32%), and Muslims by religion 221 (94%). One hundred and sixty-one 161 (69%) patients were from urban areas and 99 (42%) among them were from Lahore (provincial capital) with 91 (39%) of patients claimed family's monthly income less than 15,000 PKR.

Table 1: Demographic Characteristics of HIV/ AIDS Patients Attending HIV Clinics of Public Hospital, Lahore, Pakistan (N= 235).

Variables	Frequency	Percentage
Age (Years)		
17-25	36	15.3
26-30	97	41.3
31-40	67	28.5
>40	35	14.9
Mean ±SD	35.03 ± 9.35	
Gender		
Male	174	74.0
Female	44	18.7
Change	17	7.2
Marital status		
Ever married ǂ	162	68.9
Never married	73	31.1
Level of education		
No schooling	74	31.5
Up to primary school	56	23.8
Up to secondary school	66	28.1
Up to college/ university	39	16.6
Religion		
Islam	221	94
Christian	14	6.0
District		
Lahore	99	42.1
Other	136	57.9
Area of residence		
Urban	161	68.5
Rural	74	31.5

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Family monthly income in PKR		
≤15,000	91	38.7
15,000-30,000	72	30.6
30,000-45,000	23	9.8
≥45,000	40	17.7
Mean ±SD	28460.18 ± 25235.44	

It is shown in figure 1 that an overwhelming number of patients i.e. in 87 (37%) patients' diagnosis of HIV was delayed whereas 148 (63%) patients diagnosed early with HIV.

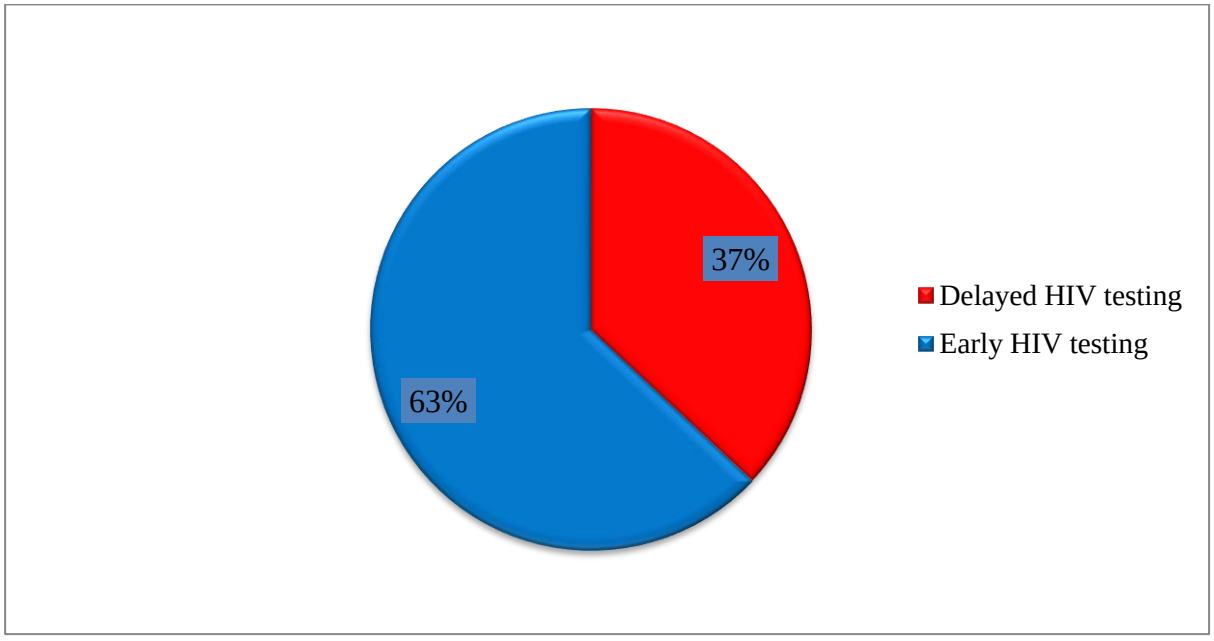

Figure 1: Delayed HIV Testing among HIV/ AIDS Patients Attending HIV Clinics of Public Hospitals, Lahore, Pakistan (n=235).

Advanced age (>35 years) is statistically significantly associated with delayed HIV testing (p-value < 0.05). Whereas the variables; like age at diagnosis gender, marital status, level of education, district, and religion, were not found have statistically significant association with delayed HIV testing (p-value > 0.05) (Table 2).

Table 2: Association between HIV Testing and Demographic Characteristics of HIV/ AIDS Patients Attending HIV Clinics of Public Hospitals, Lahore, Pakistan (N=235).

	HIV Testing		Total N (%)	χ^2- value	P-value
	Delayed %	Early %			
Age (Years)					
≤35	48.3	61.5	133(56.6)	3.883	0.048
≥35	51.7	38.5	102(43.4)		
Age at diagnosis (Years)					
≤30	49.4	54.1	123(52.3)	0.471	0.493
≥30	50.6	45.9	112(47.7)		
Gender					
Male	73.6	74.3	174 (74.0)	0.712	0.701
Female	20.7	17.6	44 (18.7)		
Transgender	5.7	8.1	17 (7.2)		
Marital status					
Ever married	67.8	69.6	162(68.9)	0.081	0.776
Never married	32.2	30.4	73(31.1)		
Level of education					

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No schooling	28.7	33.1	74(31.5)	4.293	0.232
Primary (up to 5th standard)	26.4	22.3	56(23.8)		
Secondary (6th to 12th standard)	23.0	31.1	66(28.1)		
College/ university	21.8	13.5	39(16.6)		
Religion					
Islam	97.7	91.9	221(94.0)	3.300	0.069
Christian	2.3	8.1	14(6.0)		
District					
Lahore	39.1	43.9	99 (42.1)	0.526	0.468
Other	60.9	56.1	136 (57.9)		

In figure 2 below, year-wise percentage distribution of early and delayed HIV testing is shown. It can be seen that in a great majority of patients, diagnosis was delayed in years 2010 or earlier (75%) and 2011 (83%). While, there is steady decrease in number of patients who diagnosed delayed with HIV infection since 2013.

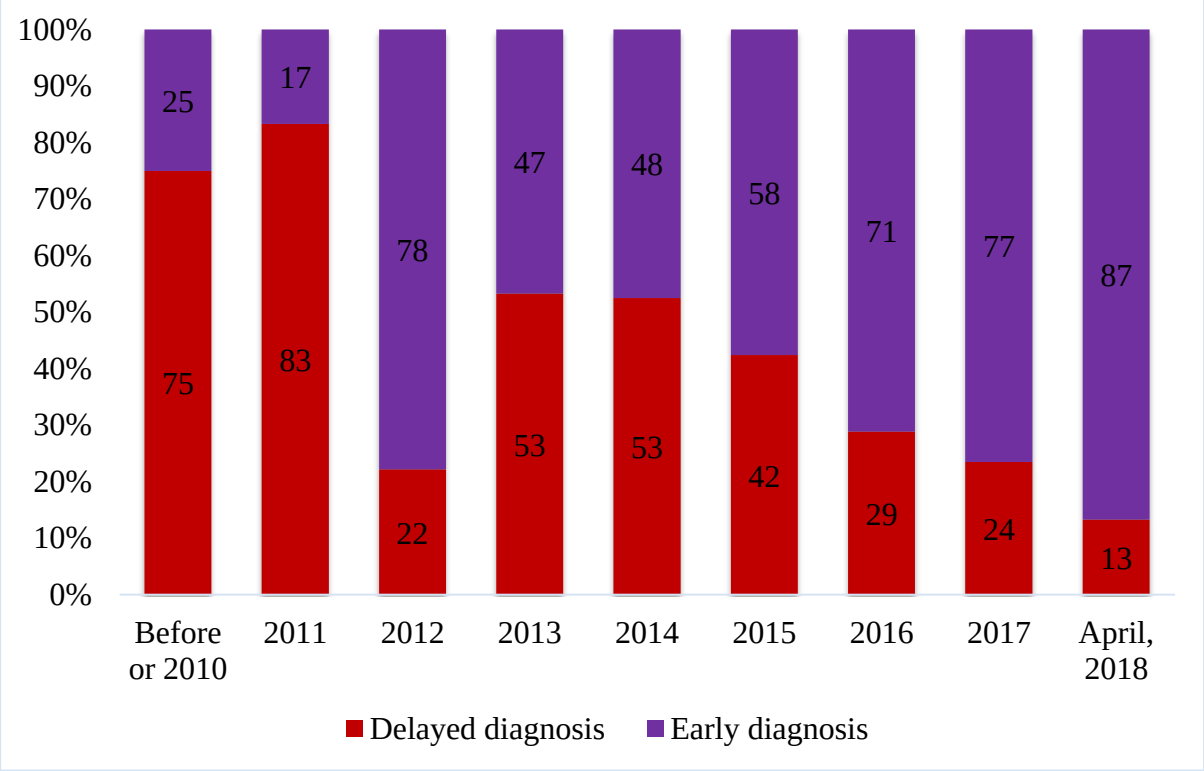

Figure 2: Year-wise Percentage Distribution of Early and Delayed HIV Testing among HIV/ AIDS Patients Attending HIV Clinics of Public Hospitals, Lahore, Pakistan (N=235).

IV. DISCUSSION

A total of 235 HIV/ AIDS patients visiting two public hospitals X and Y participated in this study. Most of the respondents i.e. 41.3 % were between the age group of 26-35 years which resemble the findings of Dailey et al., 2017 in their study where 32.9% participants were aged 25-34 years. A vast majority of the participants were male 74% and 83% did not went to high school whereas similar results were seen in the study of Gamarel et al., 2017 where 95.5% participants were male and findings of Rane et al., 2018 where education level of 63% was less than high school.

In our study, 68.5% sample was from urban areas which differs from the findings of Cyrus et al., 2019 in their study in China where 92.3% individual with HIV were from urban areas. This difference is attributable to the lifestyle in Pakistan as social clubs especially nightclubs are not so common in Pakistan. Economic status of 68.8% participants was low that was determined by the family income level, these findings are in resemblance with the results from the study of Cyrus et al., 2019 where 60% study subject had low socioeconomic status.

In 37% study participants, diagnosis of HIV was delayed in our study that is comparable to the findings of Wilton et al., 2018 where 53% of study sample were with late diagnosis.

It is obvious from the study results that age is associated significantly with delayed HIV testing whereas the findings of Dai et al., 2015 show that age and gender both are significantly associated (p-value<0.0.5). There was no significant association between variables like gender, marital status, level of education, and religion was found to delayed HIV testing which is contrary to the findings from the study of Dai et al., 2015. This can be attributed to Pakistan being an Islamic country where approximately 95% of the nationals follow religion of Islam and its values contradicts homosexual behavior.

V. CONCLUSION

This study concluded that there is a considerably high rate of delayed HIV diagnosis. Certain barriers prevail in society that lead to delayed HIV diagnosis. The barriers that lead to delayed HIV testing must be highlighted and proper policies should be devised to address those barriers effectively. Prospective research studies must be initiated to assess the barriers to delayed HIV testing. There is a dire need to broadcast awareness among community especially in the age group of <30 years regarding HIV/AIDS to facilitate the early identification of HIV exposure and to encourage the timely screening of HIV.

REFERENCES

[1] Buregyeya, E., Naigino, R., Mukose, A., Makumbi, F., Esiru, G., Arinaitwe, J., ... & Wanyenze, R. K. (2017). Facilitators and barriers to uptake and adherence to lifelong antiretroviral therapy among HIV infected pregnant women in Uganda: a qualitative study. *BMC pregnancy and childbirth*, *17*(1), 94.

[2] Cyrus, E., Sheehan, D. M., Fennie, K., Sanchez, M., Dawson, C. T., Cameron, M., ... & Trepka, M. J. (2018). Delayed Diagnosis of HIV among non-latino black caribbean immigrants in Florida 2000–2014. *Journal of health care for the poor and underserved*, *29*(1), 266.

[3] Dai, S. Y., Liu, J. J., Fan, Y. G., Shan, G. S., Zhang, H. B., Li, M. Q., & Ye, D. Q. (2015). Prevalence and factors associated with late HIV diagnosis. *Journal of medical virology*, *87*(6), 970-977.

[4] Dailey, A. F., Hoots, B. E., Hall, H. I., Song, R., Hayes, D., Fulton Jr, P., ... & Valleroy, L. A. (2017). Vital signs: human immunodeficiency virus testing and diagnosis delays—United States. *MMWR. Morbidity and mortality weekly report*, *66*(47), 1300.

[5] Drain, P. K., Dorward, J., Bender, A., Lillis, L., Marinucci, F., Sacks, J., ... & Garrett, N. (2019). Point-of-care HIV viral load testing: An essential tool for a sustainable global HIV/AIDS response. *Clinical microbiology reviews*, *32*(3).

[6] Denison, H. J., Bromhead, C., Grainger, R., Dennison, E. M., & Jutel, A. (2017). Barriers to sexually transmitted infection testing in New Zealand: a qualitative study. *Australian and New Zealand journal of public health*, *41*(4), 432-437.

[7] Gamarel, K. E., Nelson, K. M., Stephenson, R., Rivera, O. J. S., Chiaramonte, D., Miller, R. L., & Adolescent Medicine Trials Network for HIV/AIDS Interventions. (2018). Anticipated HIV stigma and delays in regular HIV testing behaviors among sexually-active young gay, bisexual, and other men who have sex with men and transgender women. *AIDS and Behavior*, *22*(2), 522-530.

[8] Gilbert, M., Thomson, K., Salway, T., Haag, D., Grennan, T., Fairley, C. K., ... & Ogilvie, G. (2019). Differences in experiences of barriers to STI testing between clients of the internet-based diagnostic testing service GetCheckedOnline. com and an STI clinic in Vancouver, Canada. *Sexually transmitted infections*, *95*(2), 151-156.

[9] Hamilton, A., Shin, S., Taggart, T., Whembolua, G. L., Martin, I., Budhwani, H., & Conserve, D. (2020). HIV testing barriers and intervention strategies among men, transgender women, female sex workers and incarcerated persons in the Caribbean: a systematic review. *Sexually transmitted infections*, *96*(3), 189-196.

[10] Mayston, R., Lazarus, A., Patel, V., Abas, M., Korgaonkar, P., Paranjape, R., ... & Prince, M. (2016). Pathways to HIV testing and care in Goa, India: exploring psychosocial barriers and facilitators using mixed methods. *BMC Public Health*, *16*(1), 765.

[11] Madiba, S., & Mokgatle, M. (2017). Fear of stigma, beliefs, and knowledge about HIV are barriers to early access to HIV testing and disclosure for perinatally infected children and adolescents in rural communities in South Africa. *South African Family Practice*, *59*(5), 175-181.

[12] Neduzhko, O., Postnov, O., Perehinets, I., DeHovitz, J., Joseph, M., Odegaard, D., ... & Kiriazova, T. (2017). Factors associated with delayed enrollment in HIV medical care among HIV-positive individuals in Odessa Region, Ukraine. *Journal of the International Association of Providers of AIDS Care (JIAPAC)*, *16*(2), 168-173.

[13] Peng, Z., Wang, S., Xu, B., & Wang, W. (2017). Barriers and enablers of the prevention of mother-to-child transmission of HIV/AIDS program in China: a systematic review and policy implications. *International Journal of Infectious Diseases*, *55*, 72-80.

[14] Rane, M. S., Hong, T., Govere, S., Thulare, H., Moosa, M. Y., Celum, C., & Drain, P. K. (2018). Depression and anxiety as risk factors for delayed care-seeking behavior in human immunodeficiency virus–infected individuals in South Africa. *Clinical Infectious Diseases*, *67*(9), 1411-1418.

[15] Youssef, E., Cooper, V., Delpech, V., Davies, K., & Wright, J. (2017). Barriers and facilitators to HIV testing in people age 50 and above: a systematic review. *Clinical Medicine*, *17*(6), 508.