# Impact of recreational drug use on people living with HIV´s health.

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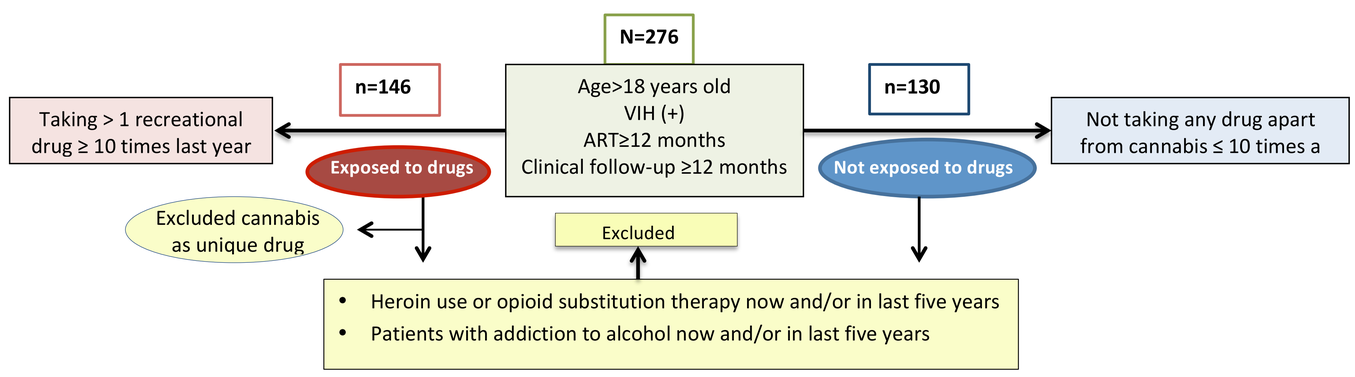
## BACKGROUND

Use of recreational drugs (RD) may have relevant clinical consequences for people living with HIV (PLHIV). This study explored the impact of RD use on HIV clinical and patient-reported outcomes.

## METHODS

A multicentric observational retrospective cohort study was conducted between April 2017 and May 2018. The sample consisted of two cohorts of PLHIV according to their RD use. Retrospective last 12-month clinical data were collected from clinical records. Patient-reported outcomes were collected through a cross-sectional online survey, containing items related to drug use, self-reported health data and use of health services (hospitalizations and emergency care). It also included the following validated measures: ART adherence (CEAT-VIH), health-related quality of life (HRQoL) (WHOQoL-HIV-bref) and Psychological Well-Being (GHQ-12). Differences between drug and non-drug users were analyzed through parametric techniques according to the nature of data. Analyses were performed with SPSS statistics V.22.

Figure 1. Algorithm of criteria for inclusion/exclusion of patients.




## RESULTS

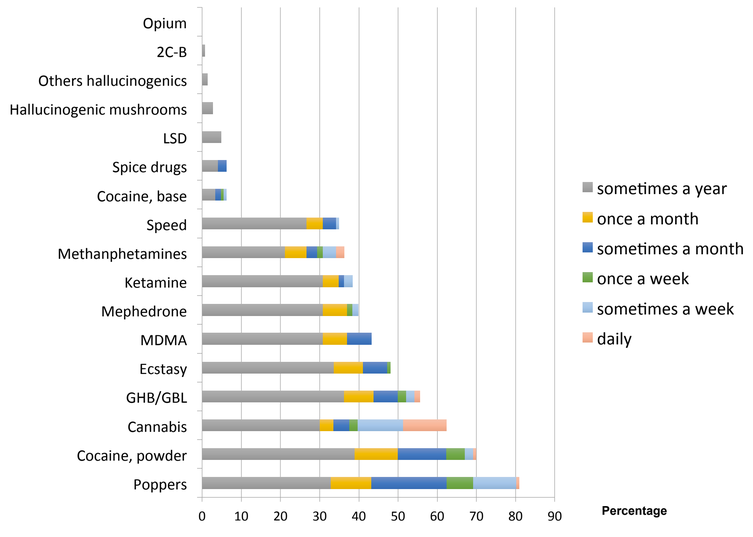
Table 1. Sociodemographic and HIV related characteristics of the participants in the sample

| VARIABLE | TOTAL SAMPLE (N = 276) | NO DRUG USERS (n= 130) | DRUG USERS (n=146) | p |
|---|---|---|---|---|
| **SOCIODEMOGRAPHIC VARIABLES** | | | | |
| **Age (mean, SD) (years)** | **44.69 (10.77)** | **48.50 (11.99)** | **41.31 (8.22)** | **.000 (F=16.99)** |
| **Gender** | | | | **.002 ($\chi2$=12.36)** |
| Male n (%) | 259 (93.8) | 115(88.5) | 144(98.6) | |
| Female n (%) | 16 (5.8) | 14 (10.8) | 2(1.4) | |
| Transgender n (%) | 1 (0.4) | 1(0.8) | 0(0.0) | |
| **Sexual orientation** | | | | **.000 ($\chi2$=16.72)** |
| Heterosexual n (%) | 37(13.4) | 29(22.3) | 8(5.5) | |
| HSH n (%) | 232(84.1) | 98(75.4) | 134(91.8) | |
| Others n (%) | 7(2.5) | 3(2.3) | 4(2.7) | |
| Transmission route | | | | .052 ($\chi2$=10.97) |
| Sexual contact n (%) | 225(81.5) | 101(77.7) | 124(84.9) | |
| Intravenous drug use n (%) | 9(3.3) | 7(5.4) | 2(1.4) | |
| Blood transfusion n (%) | 2(0.7) | 2(1.5) | 0(0.0) | |
| Other % (n) | 37(14.5) | 20(15.4) | 20(13.7) | |
| **Current relationship** | | | | **.032 ($\chi2$=4.59)** |
| Yes n (%) | 111(40.2) | 61(46.9) | 50(34.2) | |
| No n (%) | 165(59.8) | 69(53.1) | 96(65.8) | |
| Educational level | | | | .232 ($\chi2$=4.29) |
| No studies n (%) | 3(1.1) | 3(2.3) | 0(0.0) | |
| Primary/secundary education n (%) | 160(58.0) | 78(60.0) | 82(56.2) | |
| University degree n (%) | 107(38.8) | 46(35.4) | 61(41.8) | |
| Other n (%) | 6(2.2) | 3(2.3) | 3(2.1) | |
| **Work situation** | | | | **.000 ( $\chi2$=21.55)** |
| Working n (%) | 181(65.6) | 73(56.2) | 108(74.0) | |
| Unemployed n (%) | 56(20.3) | 29(22.3) | 27(18.5) | |
| Retired or disability n (%) | 32(11.6) | 27(20.8) | 5(3.4) | |
| Monthly incomes | | | | .072 ($\chi2$=8.59) |
| None | 26(9.4) | 15(11.5) | 11(7.5) | |
| ≤ 1000 € n (%) | 53(19.2) | 27(20.8) | 26(17.8) | |
| 1001-1500 € n (%) | 120(43.5) | 72(47.7) | 58(39.7) | |
| 1501-2000 € n (%) | 31(11.2) | 9(6.9) | 22(15.1) | |
| > 2001 € n (%) | 44(15.9) | 16(12.3) | 28(19.2) | |
| Country of birth | | | | .670 ($\chi2$=0.18) |
| Spain n (%) | 147(53.3) | 71(54.6) | 76(52.1) | |
| Outside of Spain n (%) | 129(46.7) | 59(45.4) | 70(47.9) | |
| **HIV RELATED VARIABLES** | | | | |
| **Time diagnosed (mean, SD) (years)** | **12.34 (7.62)** | **13.86 (8.81)** | **10.89 (5.96)** | **.002 (F=19.73)** |
| **Time on ART (mean, SD) (years)** | **10.04 (6.58)** | **10.98 (7.22)** | **9.16 (5.79)** | **.028 (F=11.77)** |
| $CD_4$ cell count known n (%) | | | | .072 ($\chi2$=5.25) |
| < 200 $CD_4$ cells/µL | 15(5.4) | 8(6.2) | 7(4.8) | |
| 200-400 $CD_4$ cells/µL | 24(8.7) | 17(13.1) | 7(4.8) | |
| > 400 $CD_4$ cells/µL | 163(59.1) | 75(57.7) | 88(60.3) | |
| Viral load known n (%) | | | | .164 ($\chi2$=1.94) |
| Undetectable | 254(92.0) | 121(93.1) | 133(91.1) | |
| Detectable | 14(5.1) | 4(3.1) | 10(6.8) | |

Notes. Data provided in frequencies, percentages, means and SDs. Not all categories of response are displayed in the table.

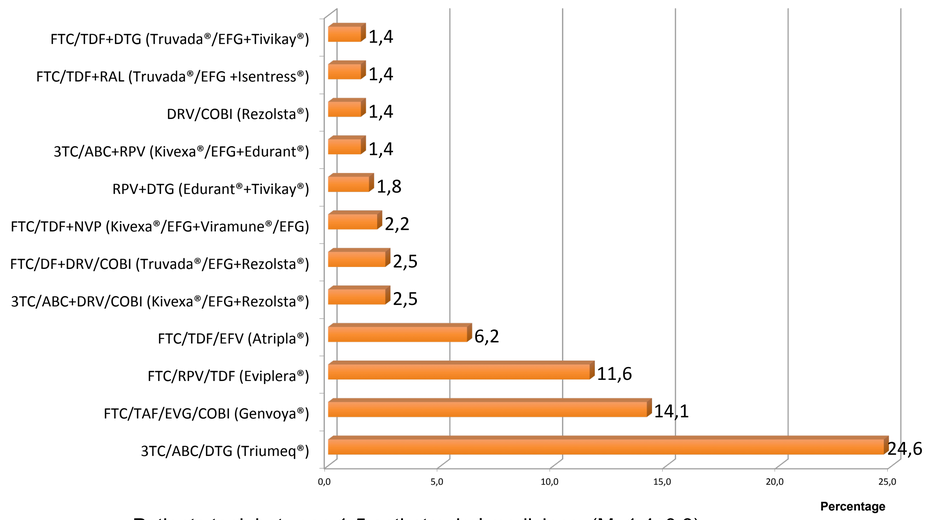
A total of 276 participants were included in the study; 146 (52.9%) consumed RD and 130 (47.1%) did not consume them. Differences in the characteristics of both groups are displayed in Table 1.

Figure 2. Prevalence comsumption of drugs in the last year (n=146)




Participants consumed between 1-14 drugs (M=5.3±3.2). Additionally, 25.4 % of the total sample also used erection enhancers without prescription (data not shown in the figure).

Figure 3. Current treatment ART in the most sample (n=197)




Patients took between 1-5 antiretroviral medicines (M=1.4±0.8).

Table 2. Type of drug-drug interactions (DDI) identified on treatment ART during the last year

DDIs were identified in 53.2% of the patients.

| | Patients (N) | Patients (%) | Interactions (N) |
|---|---|---|---|
| **Potential weak interaction** | 51 | 33.1 | 61 |
| **Potential interaction** | 62 | 40.3 | 240 |
| **Do not coadminister** | 0 | 0.0 | 0 |
| **No clear data** | 12 | 7,8 | 25 |
| **TOTAL** | **82** | **53.2** | **301** |

Notes. A total of 576 theoretical DDIs was coded to analyze data. DDIs were coded according to daily-practice interaction databases: www.hiv druginteractions.org by the Universitiy of Liverpool

Figure 4. Percentage of DDI by drug/patient

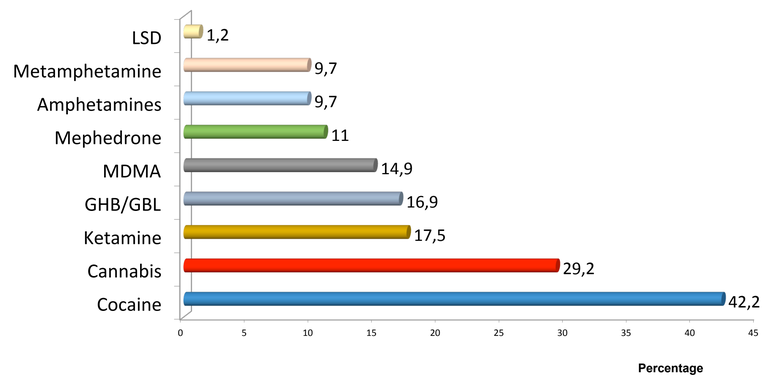
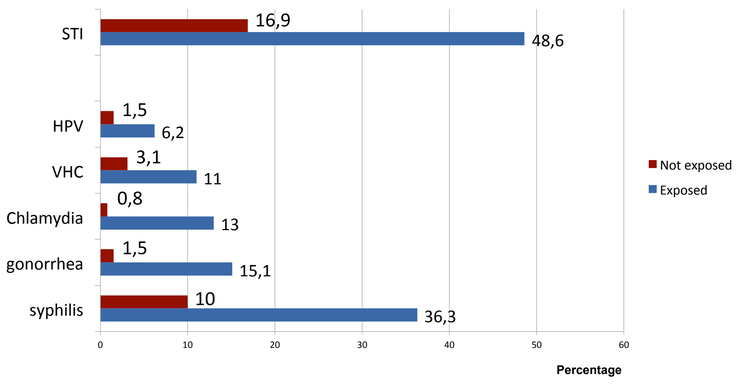


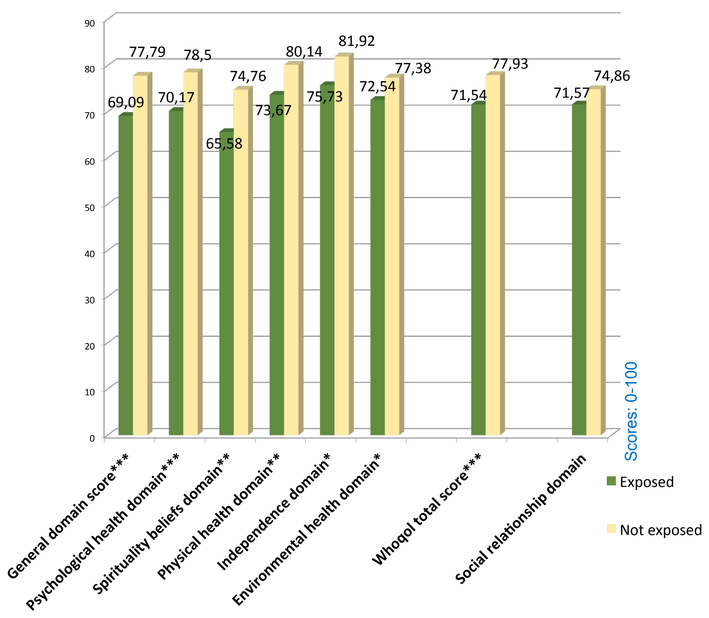

Table 1. Patients who consumed drugs were mostly men who have sex with men (MSM). They were younger, not being in a current relationship, more recently HIV diagnosed and taking ART treatment than those who did not used drugs. They were mostly employed.

Figure 6. Sexually transmitted infections (STIs)



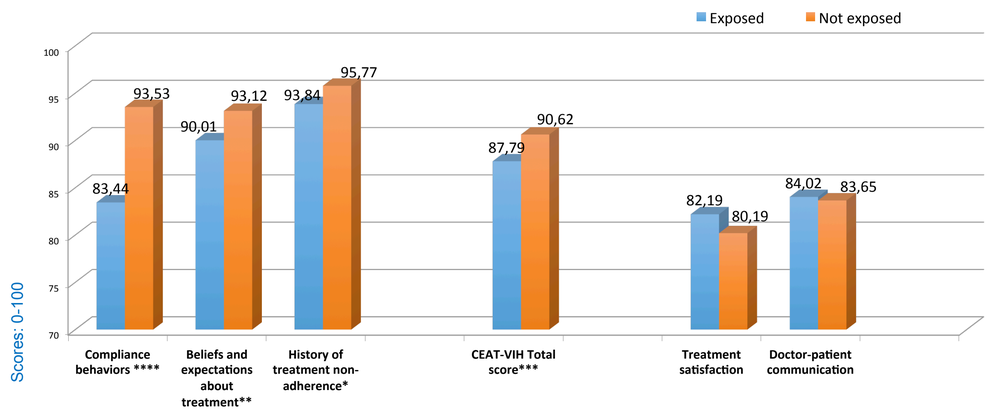

48.6% of drug users had some STDs during last year versus to 16.9% in the group not exposed. The most frecuent STDs were syphilis, gonorrhea, chlamydia and HPV

Figure 7. Differences in HRQoL




Drug users (patients exposed) obtained lower scores in most domains of HRQoL (p=.005) except in the social relationships domain. The highest difference was found in the psychological health domain (70.2±17.3 vs 78.5±14.5; p =.000).

Figure 5. Differences in ART adherence dimensions




****p<.0001. ***p<.001. **p =.01. *p=.05.

Compared to non-drug users, drug users obtained lower scores in ART adherence (p =.004), with significant differences in all domains except in treatment satisfaction and communication with their doctor.

Figure 9. Health resources

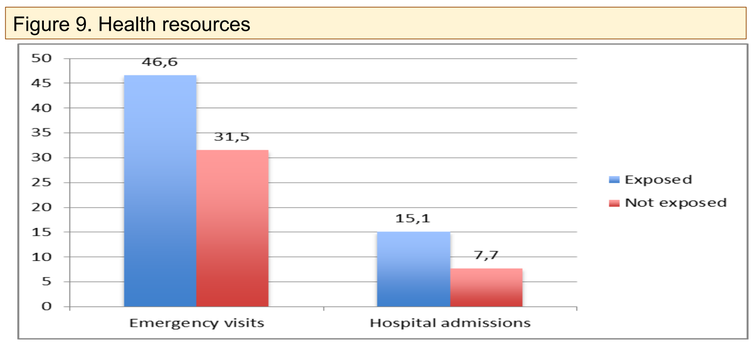



Figure 8. Differences in psychological well-being

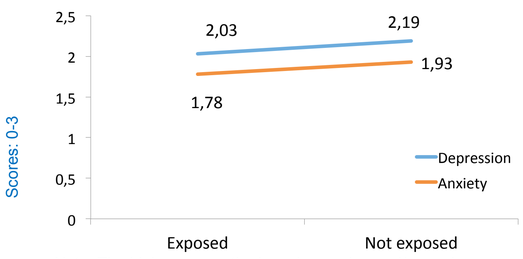



Fig. 8. Drug users also presented worse scores in depression (p=.006) and anxiety (p=.008)

Note. The higher scores the less depression and/or anxiety.

## CONCLUSIONS

RD use in PLHIV has a negative impact on health-related variables at various levels, including clinical results, HRQoL and the use of health services. Interventions to address problematic drug use and to improve health outcomes of PLHIV who use drugs should be conducted.

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