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BACKGROUND

- People who injected drugs (PWID) are at higher risk of acquiring various infections through blood such as Human Immunodeficiency Virus (HIV)¹
- PWID (who accounted for nearly 13 million worldwide), continue to impact the epidemic of HIV/AIDS, representing 1.7 million of persons living with HIV²
- In Puerto Rico, injection-related risk behaviors such as: sharing needles³ other drug equipment (such as rinse water, cookers and cotton)⁴ practice back loading injection⁵ and early initiation of this practice have been associated with HIV⁶
- Although new HIV diagnoses among PWID have decreased, disparities has still been reported in the island in which PWIDs continue to represent the group with the highest mortality⁷.

STUDY OBJECTIVE

Explain the differences among results obtained from two different cycles (2012 vs. 2015) regarding:

- Socio-demographic variables
- Drug use
- Sexual behaviors

METHODS

• Data for this cross-sectional study were part of the Puerto Rico National HIV Behavioral Surveillance (NHBS) study (2012 and 2015 PWID cycles)

Sampling method

Participants were recruited using Respondent Driven Sampling (RDS)

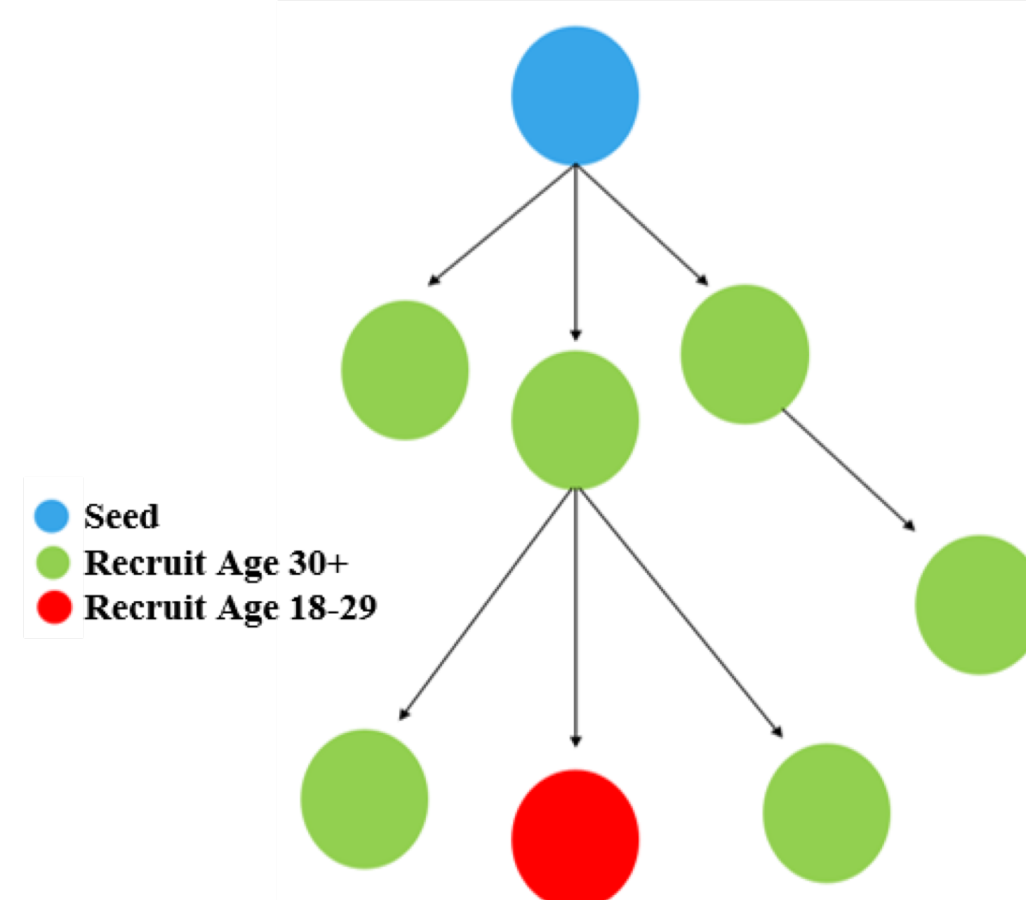


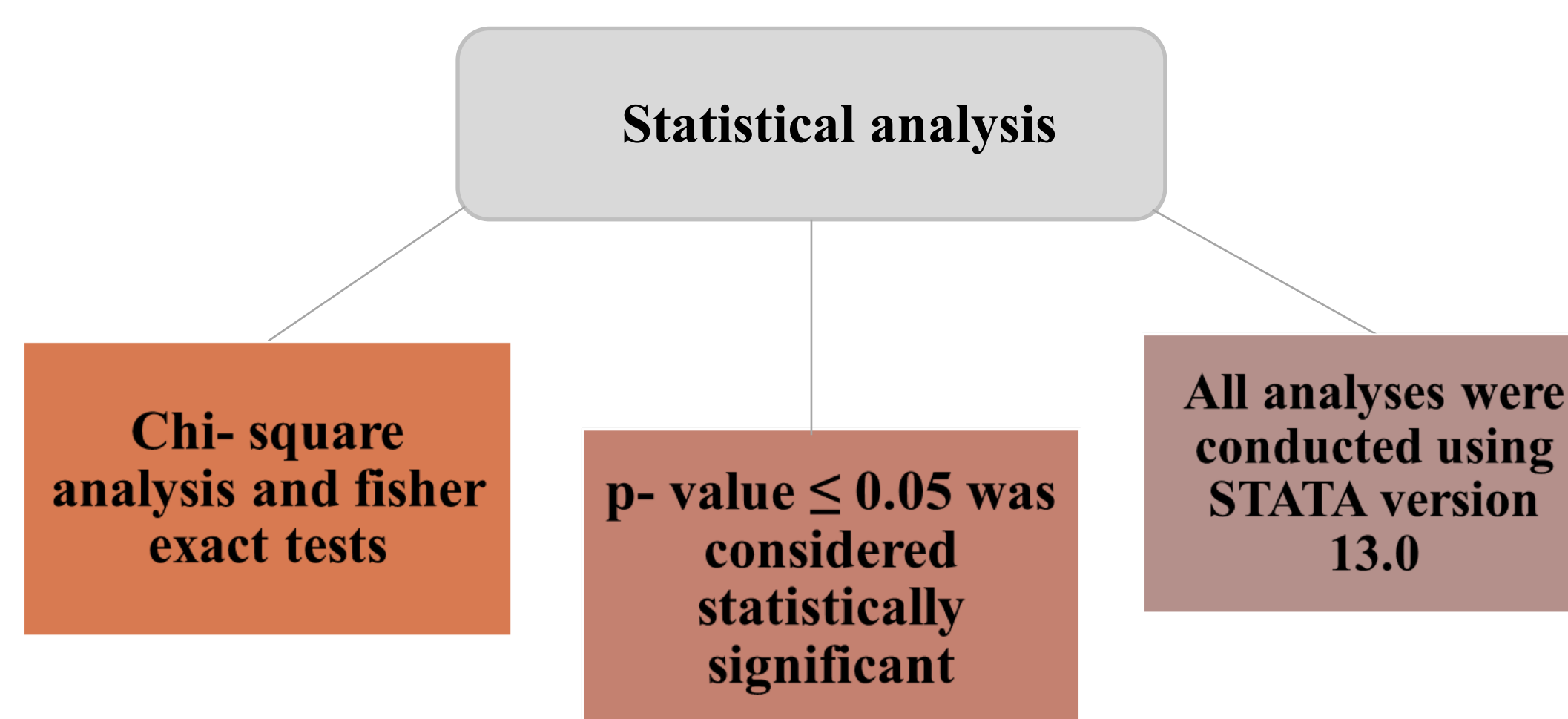
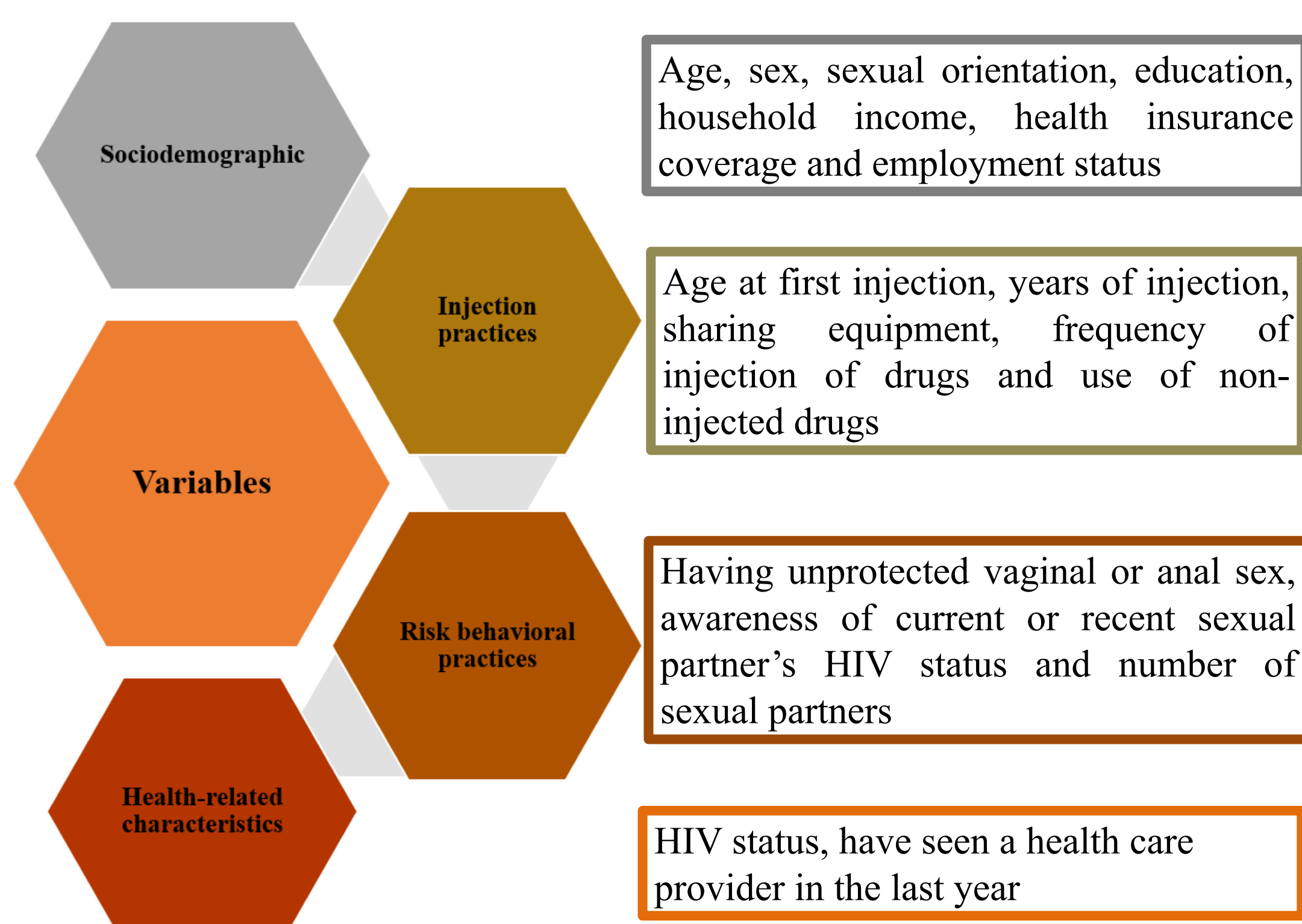
Figure 1. Example RDS recruitment

Eligibility criteria

- Present a valid NHBS- PWID coupons
- Have not previously participated in the current cycle of NHBS
- Live in the participating MSA or Divisions
- 18 years of age or older
- Has injected drugs in the past 12 months
- Able to complete the interview in English or Spanish
- Male or female (not transgender)

Data Collection

Eligible individuals completed anonymous standardized face-to-face interviews using a handheld computer device with the Questionnaire Development System software (QDS™)



RESULTS

Table 1. Socio-demographic characteristics among PWID (n = 1,001)

Characteristics	NHBS-PWID 3		NHBS-PWID 4		p-value
	No.	%	No.	%	
Sociodemographic characteristics					
Sex					
Male	378	83.73	471	85.79	0.34
Female	74	16.37	78	14.21	
Sexual orientation					
Heterosexual	371	82.08	456	83.21	0.64
Homosexual or Bisexual	81	17.92	92	16.79	
Age					
18-29 years	39	8.63	35	6.38	0.10
30-39 years	177	39.16	193	35.15	
40 years or more	236	52.21	321	58.47	
Education					
High school or less	365	80.75	437	79.60	0.65
Some college or more	87	19.25	112	20.40	
Employment status					
Employed full time/part time	26	5.82	41	7.52	0.29
Unemployed	421	94.18	504	92.48	
Health Insurance					
Yes	235	52.11	327	59.56	0.018*
No	216	47.89	222	40.44	
Household income					
\$0-\$4,999	436	96.67	509	92.71	0.007*
\$5,000-\$14,999	7	1.55	28	5.10	
\$15,000 or more	8	1.77	12	2.19	

*p<0.05 statistically significant

Table 2. Changes in injection practices among PWID 3- 2012 vs PWID 4-2015

Characteristics	NHBS-PWID 3		NHBS-PWID 4		p-value
	Mean	Std. Dev.	Mean	Std. Dev.	
Injection practices					
Age at first injection	20.6	6.7	21.4	7.3	0.08
Years of injection	20.1	10.3	21.1	10.6	0.11
Number of people who the participant shared any injection equipment	7.7	24.9	8.9	23.0	0.40

NHBS-PWID 3

90.4%

Injection frequency (More than once day)

NHBS-PWID 4

93.6%

p= 0.008

80.4%

Share injection Equipment

96.2%

p< 0.001*

85.9%

Speedball Use

79.3%

p< 0.001*

57.5%

Heroin Use

87.4%

p< 0.001*

*p<0.05 statistically significant

Figure 2. Changes in injection practices among PWID 3- 2012 vs PWID 4-2015

Table 3. Risk Behavioral practices among PWID

Characteristics	NHBS-PWID 3		NHBS-PWID 4		p-value
	No.	%	No.	%	
Male^a					
No	166	58.25	90	32.03	<0.001*
Yes	119	41.75	191	67.97	
Female^a					
No	35	58.33	15	24.59	<0.001*
Yes	25	41.67	46	75.41	

*p<0.05 statistically significant

^a Had vaginal or anal sex without a condom with an opposite sex partner whose HIV status is unknown.

Table 4. Health-related characteristics among PWID

Characteristics	NHBS-PWID 3		NHBS-PWID 4		p-value
	No.	%	No.	%	
Health-related					
HIV status**					
Negative	380	85.01	485	88.34	0.12
Positive	67	14.99	64	11.66	
Have seen a health care provider in the last year					
No	205	45.86	235	42.81	0.334
Yes	242	54.14	314	57.19	
When last visited a health care provider					
Within the past 5 years	150	73.17	190	81.20	0.045*
More than 5 years ago	55	26.83	44	18.80	

*p<0.05 statistically significant

**Based on rapid test: Clearview COMPLETE HIV 1/2 and confirmatory test: Dried Blood Spot

CONCLUSIONS

- Our study found that injectors had a median of 20 years since the onset of this behavior, and it was observed the aging of the PWID population in the most recent cycle, as PWID are significant older.
- During 2012-2015, HIV diagnoses among PWID declined.
- In relation to the frequency of sharing needles, a decrease in this behavior was recently observed, but a significant higher proportion of participants reported sharing a reused cooker, cotton or water.
- Regarding sexual practices among male PWID, it was observed an increase vaginal or anal sex without a condom with a woman with unknown HIV status, similar to women PWID
- These findings supports prior reports which indicates that the substantial progress in reducing HIV infections among PWID, could be challenged due to recent changes in drug use and sexual practices
- The strategies that continue reducing HIV, HCV and HBV infections and paraphernalia sharing among Puerto Rican PWID should be used to meet emerging challenges in changing PWID populations.

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REFERENCES

1. Folch, C., Casabona, J., Espelt, A., Majó, X., Meroño, M., Gonzalez, V., ... Group, R. S. (2016). High Prevalence and Incidence of HIV and HCV Among New Injecting Drug Users With a Large Proportion of Migrants? *Substance Use & Misuse*, 51(2), 250-260.
2. WHO | People who inject drugs. (2016). *WHO*. Retrieved from <http://www.who.int/hiv/topics/idu/about/en/>
3. Zerden, L. D. S., Marilis López, L., & Lundgren, L. M. (2010). Needle sharing among Puerto Rican injection drug users in Puerto Rico
4. Abadie, R., Welch-Lazowitz, M., Gelpi-Acosta, C., Reyes, J. C., & Dombrowski, K. (2016). Understanding differences in HIV/HCV prevalence according to differentiated risk behaviors in a sample of PWID in rural Puerto Rico. *Harm Reduction Journal*, 13(1), 10.
5. Reyes, J. C., Robles, R. R., Colón, H. M., Matos, T. D., Finlison, H. A., Marrero, C. A., & Shepard, E. W. (2005). Homelessness and HIV risk behaviors among drug injectors in Puerto Rico. *Journal of Urban Health : Bulletin of the New York Academy of Medicine*, 82(3), 446-455
6. Colón-López, V., Miranda-De León, S., Machin-Rivera, M., Marrero, E., Rolón-Colón, Y., Valencia-Torres, I. M., & Suárez, E. (2017). Mortality Disparities among HIV+ Men and Women in Puerto Rico: Data from the HIV/AIDS Surveillance System 2003-2014. *Puerto Rico Health Sciences Journal*, 36(1), 24-28