VALIDITY OF A-CASI SELF-REPORTS OF DRUG USE WITH ON-SITE URINE TESTING IN THE GENERAL POPULATION OF PUERTO RICO

Cynthia M. Pérez, PhD; Héctor M. Colón, PhD; Marytere Meléndez, MPH; Edmir Marrero, MPH; Sandra Adrovet, MPH; Ana P. Ortiz, PhD; Carmen Albizu, MD; Samuel R. Friedman, PhD; Vivian Colón, PhD; Erick Suárez, PhD

BACKGROUND

- Community surveys are increasingly being used to monitor substance use and substance use disorders in the general population.

- Yet there is little information about the validity of drug use self-reports in community surveys.

- Interview mode has been shown to be an important source of influence on drug use self-reports with those modes which increase confidentiality and privacy generally showing increased levels of reporting.
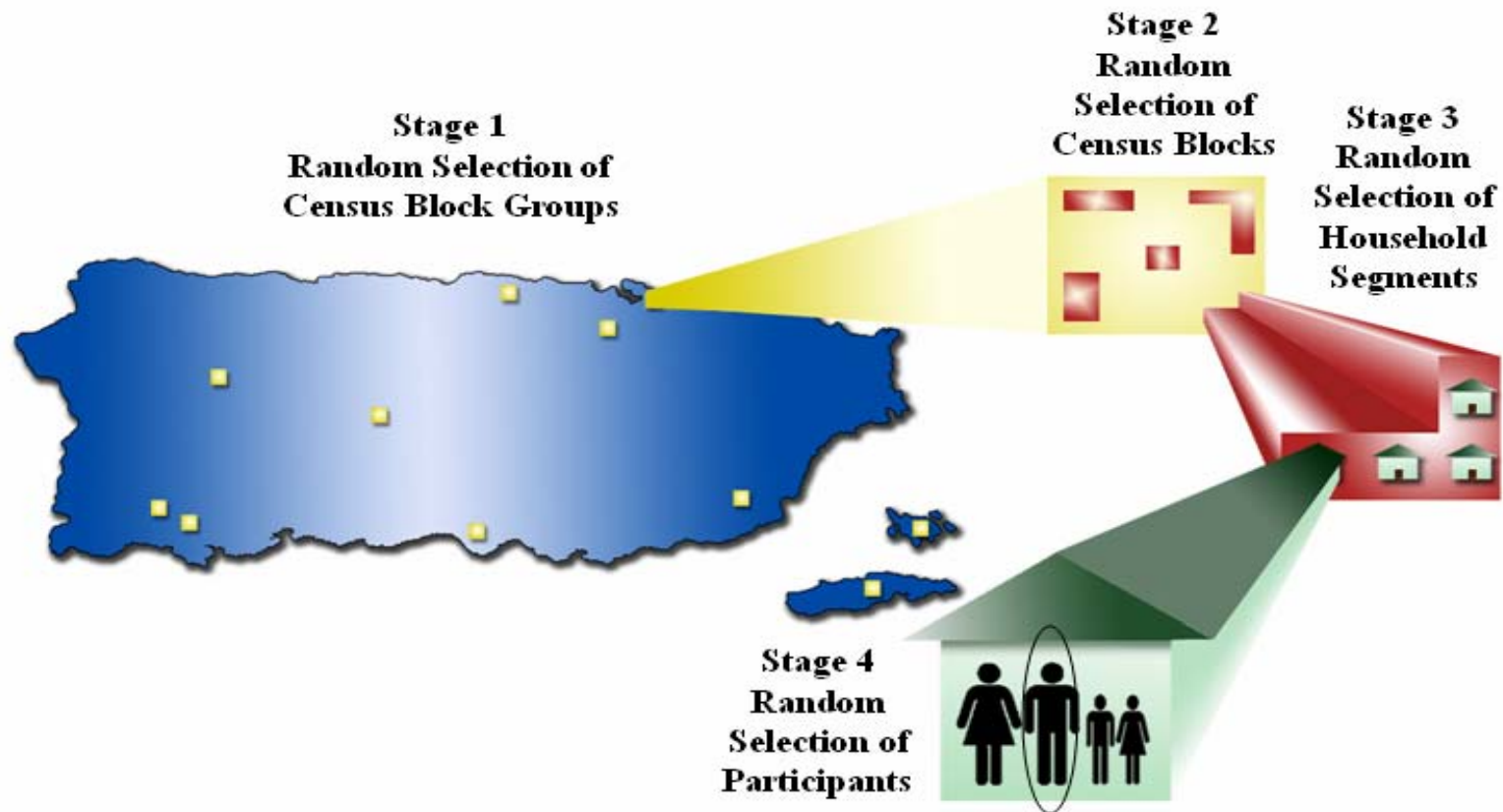
BACKGROUND

- **Growing literature on the use of A-CASI systems in clinical as well as community studies.**
  - However, there is a scarcity of data with which to gauge the effects of A-CASI systems on the validity of drug use self-reports.

- **Various studies show that in-household interviewing is commonly affected by loss of privacy by interruptions from household residents.**
  - Off-household interviewing used in health surveys to collect biological specimens and conduct physical exams could potentially offer an additional layer of privacy to respondents.

STUDY AIM

- As part of an ongoing household survey to estimate the seroprevalence of hepatitis C in the general population of Puerto Rico, we assessed the validity of drug use self-reports when collected through A-CASI systems while respondents are interviewed off-households in a mobile examination unit.

SAMPLING SCHEME

Figure 2: Epidemiology of Hepatitis C infection in the Household, Adult Population of Puerto Rico: Stages of Sampling Procedure

Stage 1
Random Selection of Census Block Groups

Stage 2
Random Selection of Census Blocks

Stage 3
Random Selection of Household Segments

Stage 4
Random Selection of Participants

By: Carlos A. Marrero
March, 2007

STUDY SAMPLE

- **Expected total sample size of parent study**
  - **~1,700 adults aged 21-64 years**

- **Urine testing was conducted on the first 520 participants recruited.**
  - **533 (71.9%) of 741 eligible individuals agreed to be interviewed.**
  - **99.1% consented to provide urine samples.**

TOXICOLOGICAL TESTING

- **Urine samples**
  - **30 ml-60 ml of a first-catch urine specimen was obtained from consenting participants to detect drug metabolites:**
    - **Marihuana in the last 10 days**
    - **Cocaine in the last 2-4 days**
    - **Opiate in the last 2-3 days**

- **Positive tests of initial urinalysis using LZI cannabinoid enzyme immunoassay, LZI cocaine metabolite enzyme immunoassay and LZI opiate enzyme immunoassay were further confirmed by gas chromatography/mass spectrometry (GC/MS).**
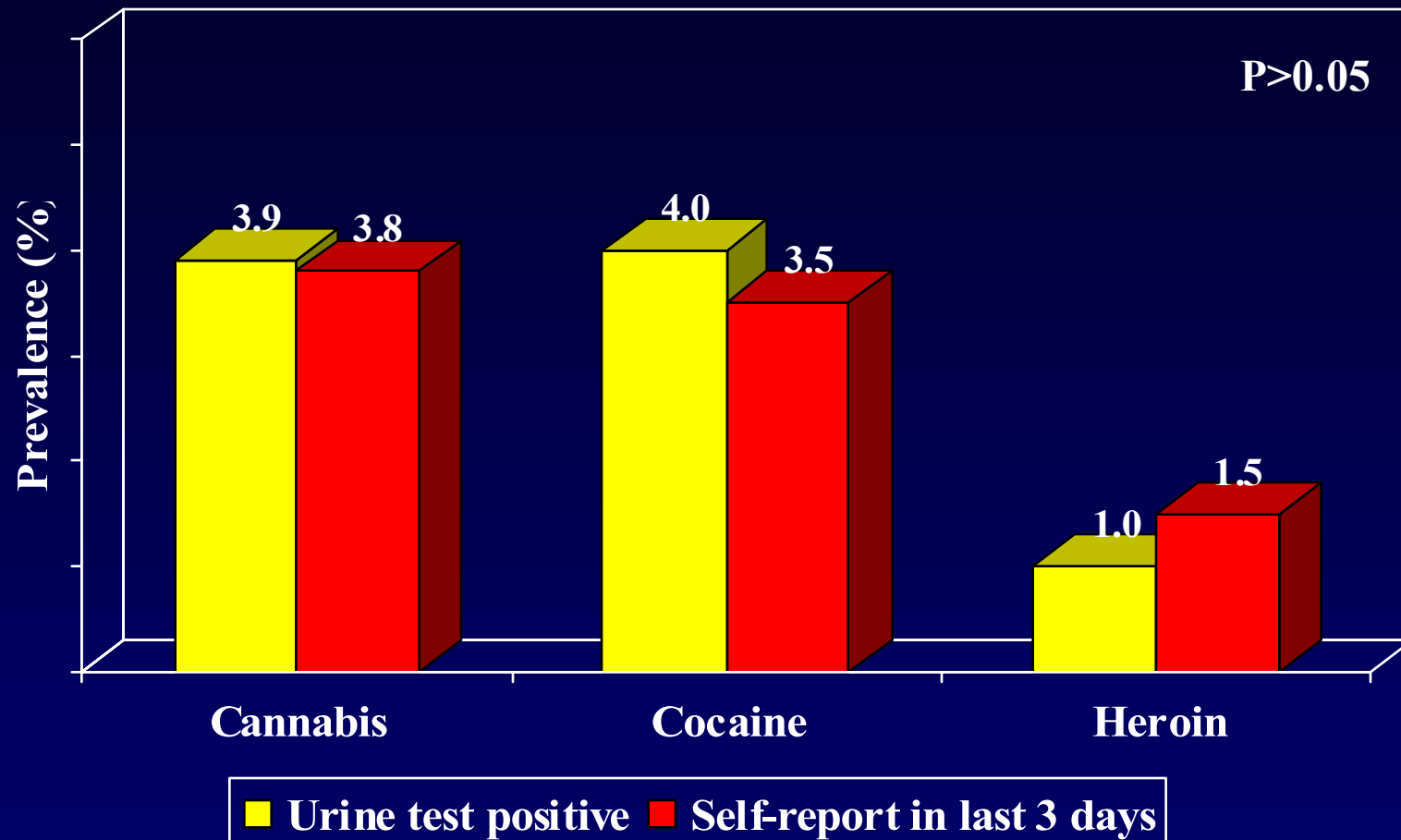
INTERVIEW MEASURES

- **Personal Interview**
  - **Socio-demographics**
  - **Medical history**

- **A-CASI**
  - **Drug use report of marihuana/hashish, cocaine/crack, and heroin/opiates**
    - **Use in the previous 3 days**
    - **Use in the previous year**
    - **Lifetime use**

DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS (N=520)

Characteristic	Urine tested	Puerto Rico Census 2000
Age in years		
21-29	20.6	24.2
30-39	24.0	25.1
40-49	26.0	23.1
50-64	29.4	27.6
Sex		
Male	42.3	47.3
Female	57.7	52.7
Years of education		
<12	22.7	32.5
≥12	77.3	67.5

PREVALENCE OF DRUG USE BY SELF-REPORT AND URINE TEST (N=520)

P>0.05

Prevalence (%)

3.9   3.8   4.0   3.5   1.0   1.5

Cannabis   Cocaine   Heroin

■ Urine test positive ■ Self-report in last 3 days

VALIDITY STATISTICS FOR CANNABIS SELF-REPORT: A-CASI VERSUS URINE TEST (N=520)

A-CASI	Urine test +	Urine test -	Sensitivity Specificity
Past 3 days			
Report +	16	4	80.0
Report -	4	496	99.2
Past year			
Report +	19	43	95.0
Report -	1	457	-
Lifetime			
Report +	19	136	95.0
Report -	1	364	-

VALIDITY STATISTICS FOR COCAINE SELF-REPORT: A-CASI VERSUS URINE TEST (N=520)

A-CASI	Urine test +	Urine test -	Sensitivity Specificity
Past 3 days			
Report +	16	2	76.2
Report -	5	497	99.6
Past year			
Report +	19	20	90.5
Report -	2	479	-
Lifetime			
Report +	20	57	95.2
Report -	1	442	-

VALIDITY STATISTICS FOR HEROIN SELF-REPORT: A-CASI VERSUS URINE TEST (N=520)

A-CASI	Urine test +	Urine test -	Sensitivity Specificity
Past 3 days			
Report +	2	6	40.0
Report -	3	509	98.8
Past year			
Report +	3	16	60.0
Report -	2	499	-
Lifetime			
Report +	3	27	60.0
Report -	2	488	-

CONCLUSIONS

- **Prevalence of self-reported drug use was similar to prevalence derived from urine testing.**

- **Validity measures were higher than corresponding estimates from previous studies conducted in Puerto Rico and US mainland.**

- **Validity of self-reported heroin use was lower than that for cocaine and marihuana use.**

CONCLUSIONS

- One limitation of this investigation is that the study sample does not constitute the entire random sample of the parent study thus limiting generalizability of research findings.

- Utilization of A-CASI is feasible and acceptable in a homogeneous population of Hispanic origin.
  – All participants agreed to respond to A-CASI.

- A-CASI used in combination with off-household interviewing might improve drug use self-reports and their validity.