# Context

- In South Florida rates of new HIV infections are particularly high

- PrEP use has not scaled proportionately to need

- Many potential PrEP candidates may not be aware of how to access PrEP or have barriers to obtaining PrEP

- University of Miami PrEP program conceived and implemented a mobile prevention clinic providing HIV and sexually transmitted infection (STI) testing and treatment as well as PrEP care

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# LCA Research Aims

- AIM 1: Characterize distinct patterns of HIV risk using latent class analysis

- AIM 2: Examine correlates of latent class membership

# Sample

- We applied Latent Class Analysis (LCA) to a sample of 2036 individuals who sought sexual health services through the University of Miami PrEP programs between September 2018 and March 2023

- Mean participant age was 37.2 years (SD = 12.5)

- Participants were
  - Predominantly male sex assigned at birth (70.4%)
  - White (56%)
  - Hispanic (62.7%)
  - Foreign born (54.7%)

# Methods/Analysis

- Latent Class Analysis
  - Used to identify underlying patterns of covariance in the data structure to identify classes or sub-groups

- Correlates
  - Descriptive mean and standard deviations of theoretical and empirical correlates of HIV risk behaviors
  - ANOVA and Chi Square analysis to determine significant associations and differences

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# LCA Model

- HIV Risk Classes were identified using:
  - history of bacterial sexually transmitted infection (STI) (yes/no)
  - history of transactional sex (yes/no)
  - history of anonymous sex (yes/no)
  - history of sex with an HIV positive sexual partner (yes/no)
  - history of sex with a person who injects drugs (yes/no)
  - history of use of injection drugs (yes/no)
  - history of condomless sex (yes/no)
- The timeframe for all measures was past 12 months

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# Correlates

- Age

- Gender (Male vs. Female vs. Transgender/Gender non-conforming)

- Race (White vs. Black/African American vs. Other vs. Asian)

- Ethnicity (Hispanic/Latino vs. Non-Hispanic/Non-Latino)

- Country of birth (Born in U.S vs. Not born in U.S)

- Type of service sought (PrEP services vs. Other services)

- Self-reported chances of getting HIV (None vs. Low vs. Moderate vs. High)
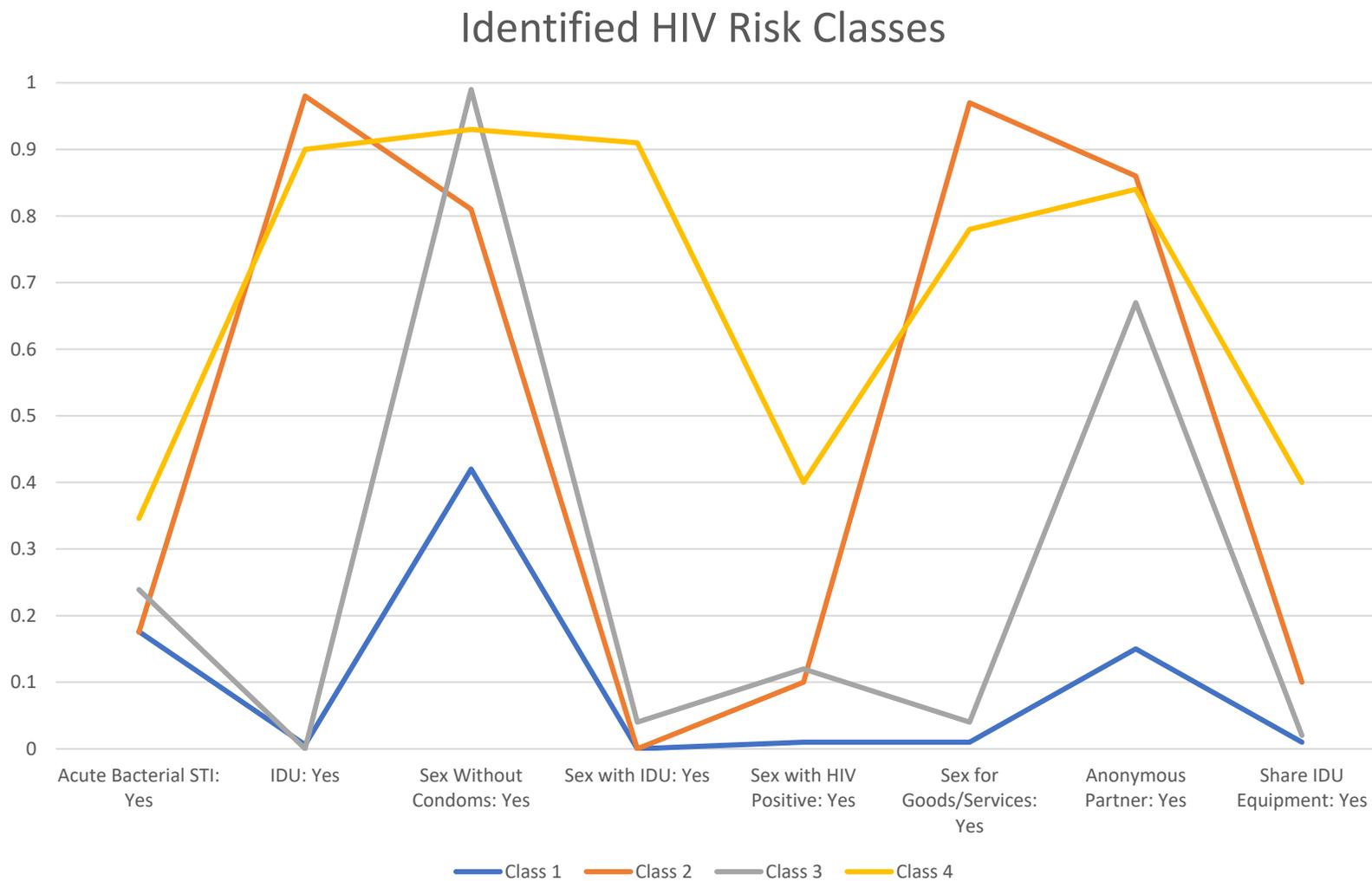
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# Results- Model Fit

| Model Fit | 2 Classes | 3 Classes | 4 Classes |
|---|---|---|---|
| AIC | 8102.898 | 8042.515 | 8032.194 |
| BIC | 8174.048 | 8179.967 | 8151.977 |
| ABIC | 8132.748 | 8094.19 | 8088.438 |
| X^2 | < 0.001 | 0.01 | 0.49 |
| Entropy | 0.969 | 0.81 | 0.85 |

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# Results



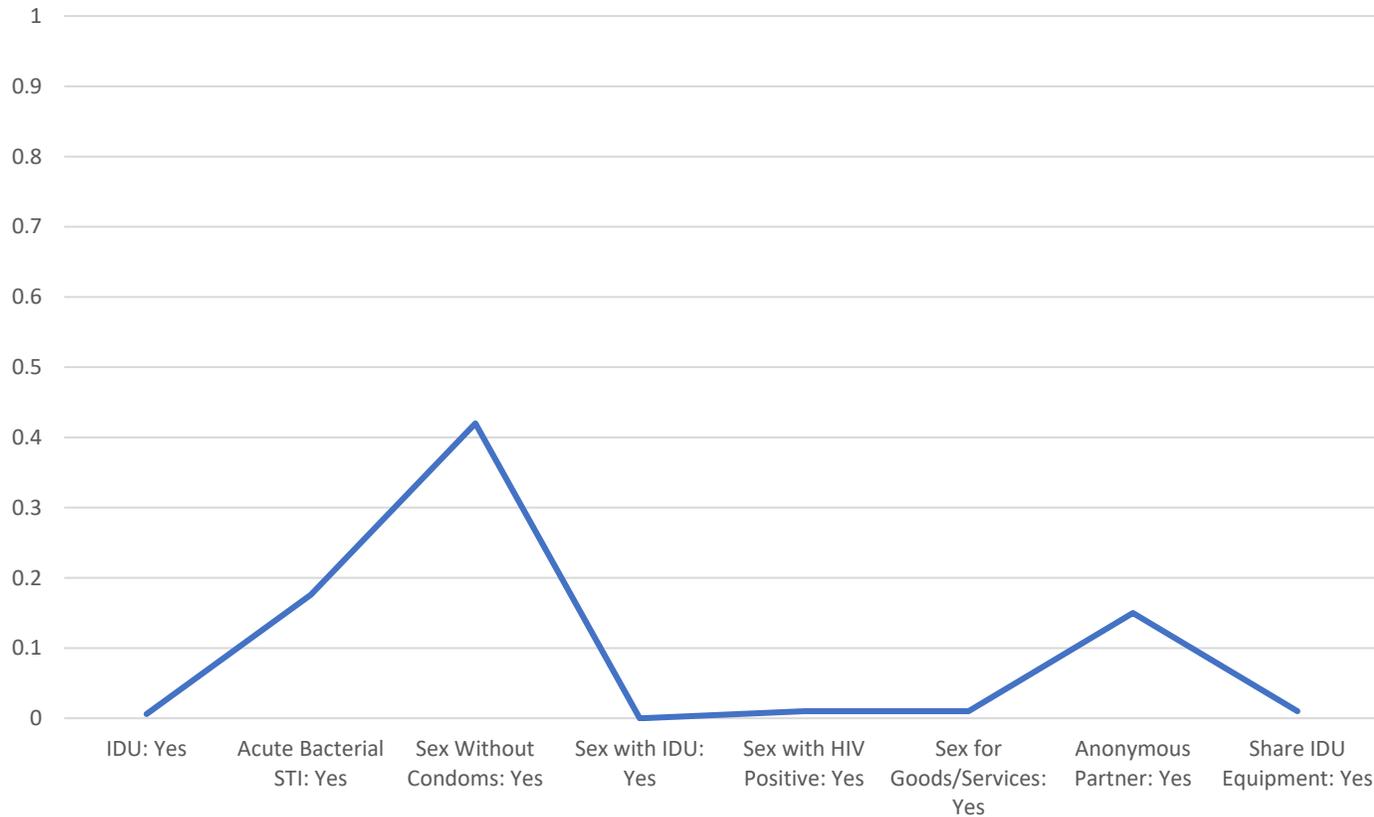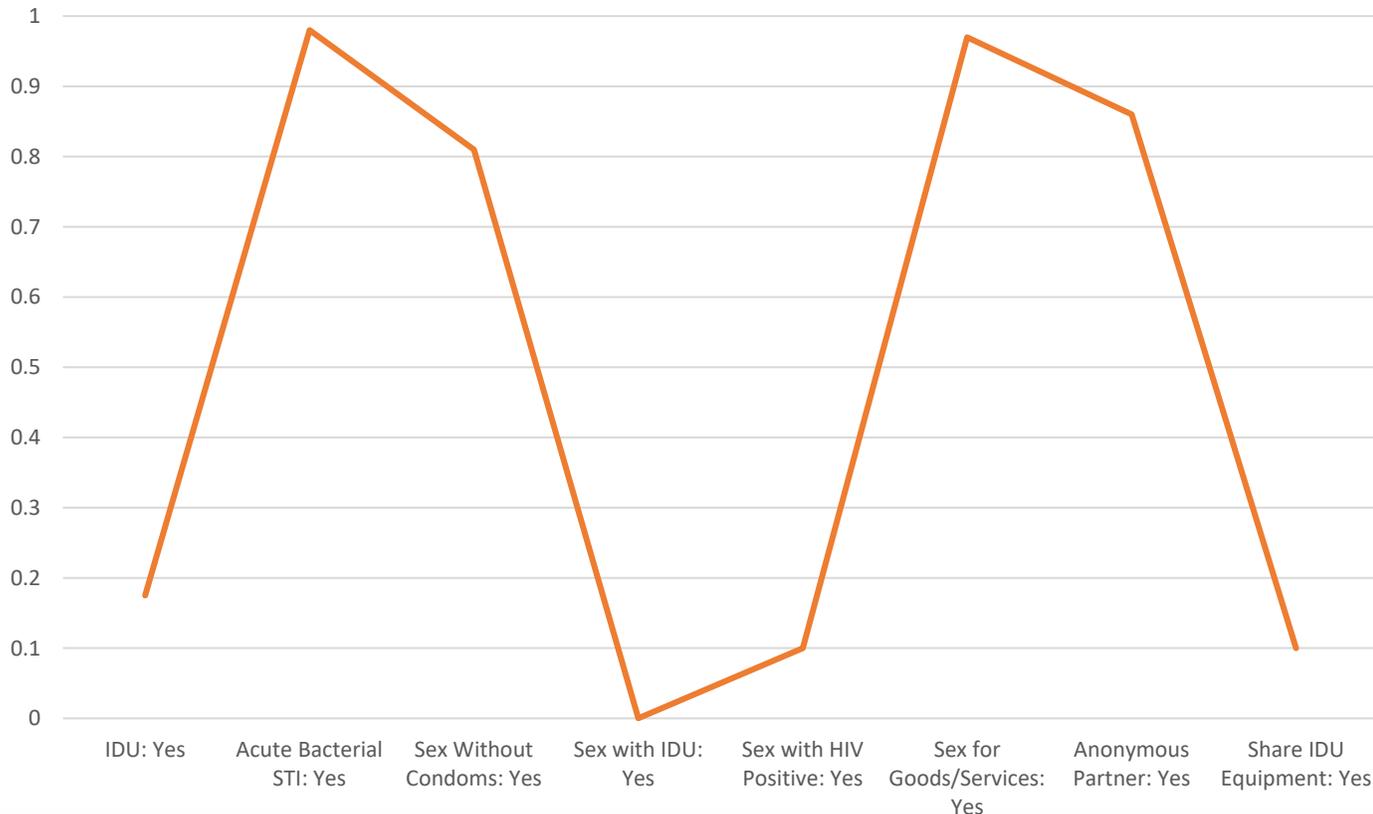Identified HIV Risk Classes

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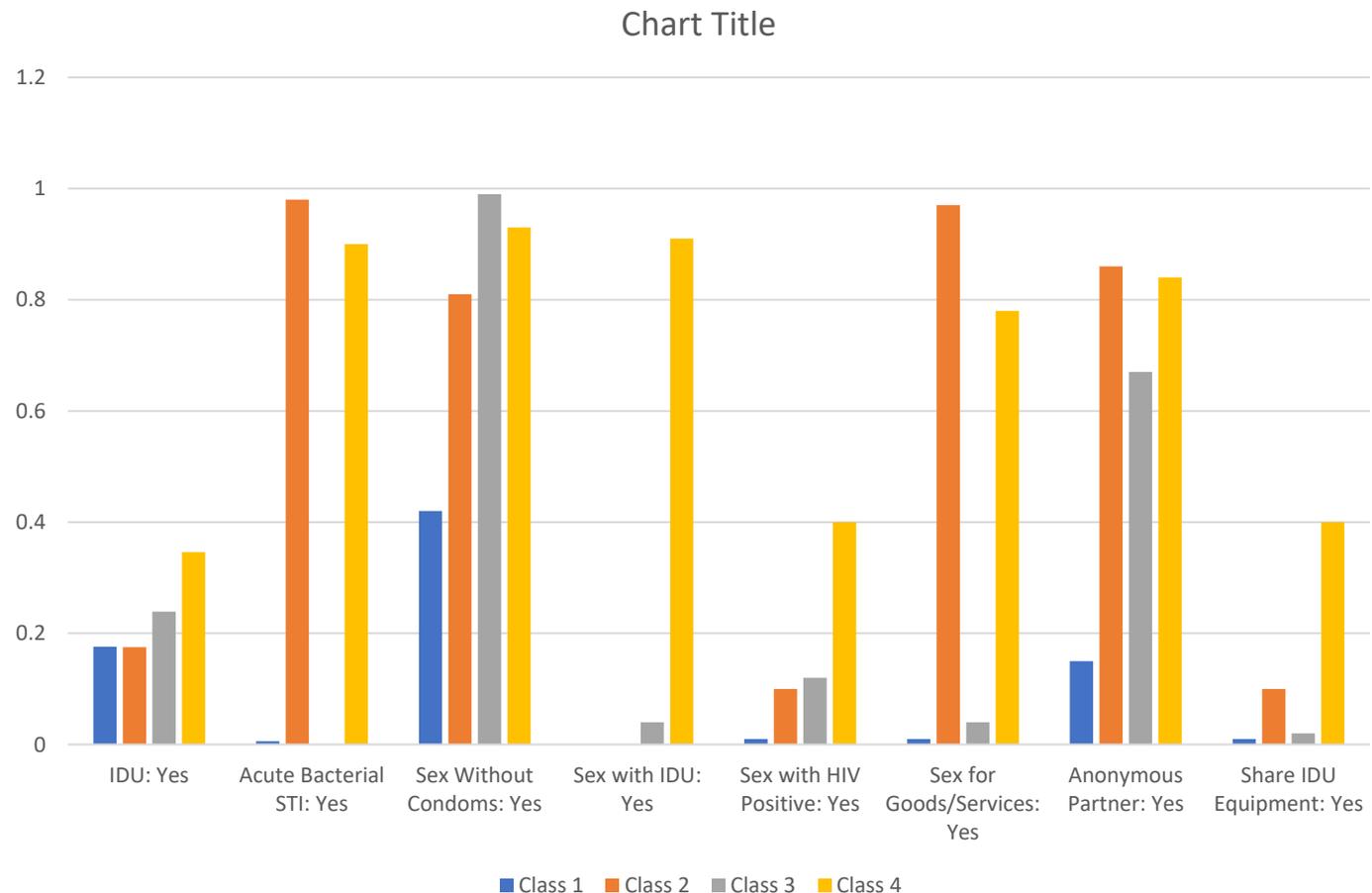
# Class 1:

## Class 1- Low Risk



- Characterized by lowest overall reported probability of positively responding to any of the risk variables (0 -0.42)
- Highest percentage of persons who were foreign born (69.5%)
- Highest percentage of those who identify as Male (87.6%)

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# Class 2:

## Class 2- Moderate Risk



- Characterized by:
  - High reported history of STI
  - High reported sex without condoms
  - High reported sex for goods/services (transactional sex)
  - High reported anonymous sex
- Highest percentage of persons who came for PrEP services (85.0%)
- Highest percentage of those who self-reported their HIV risk as high (18.8%)

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# Class 3:

## Class 3- Low/Moderate Risk
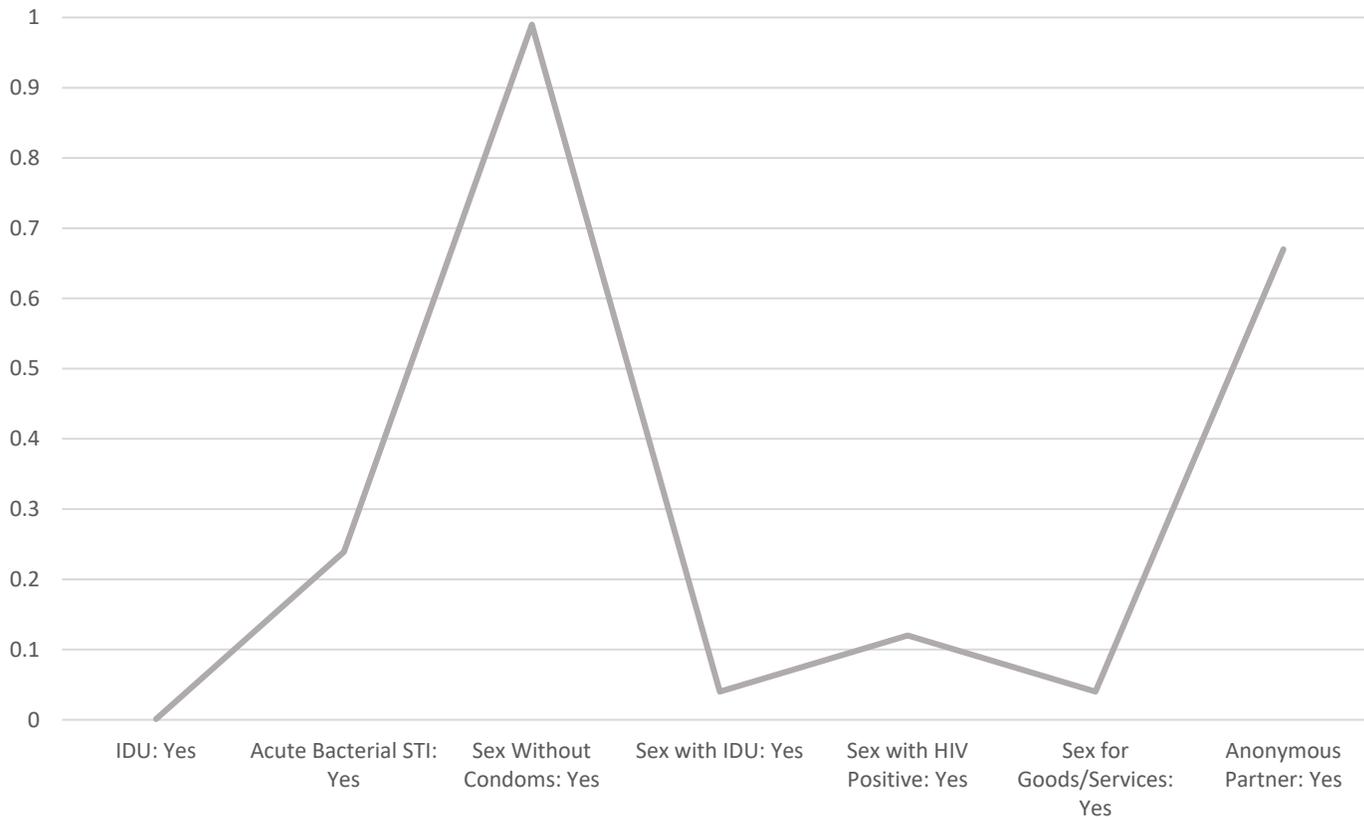


- Characterized by:
  - High reported condomless sex
  - Moderately high reported anonymous sex
- Highest percentage of those who identify as Female (31.4%)
- Highest percentage of those who self-reported race as Black/African American (32.3%)
- Highest percentage of those born in the U.S (48.0%)
- Highest percentage who came for services other than PrEP (59.5%)

# Class 4:



Class 4- Higher Risk
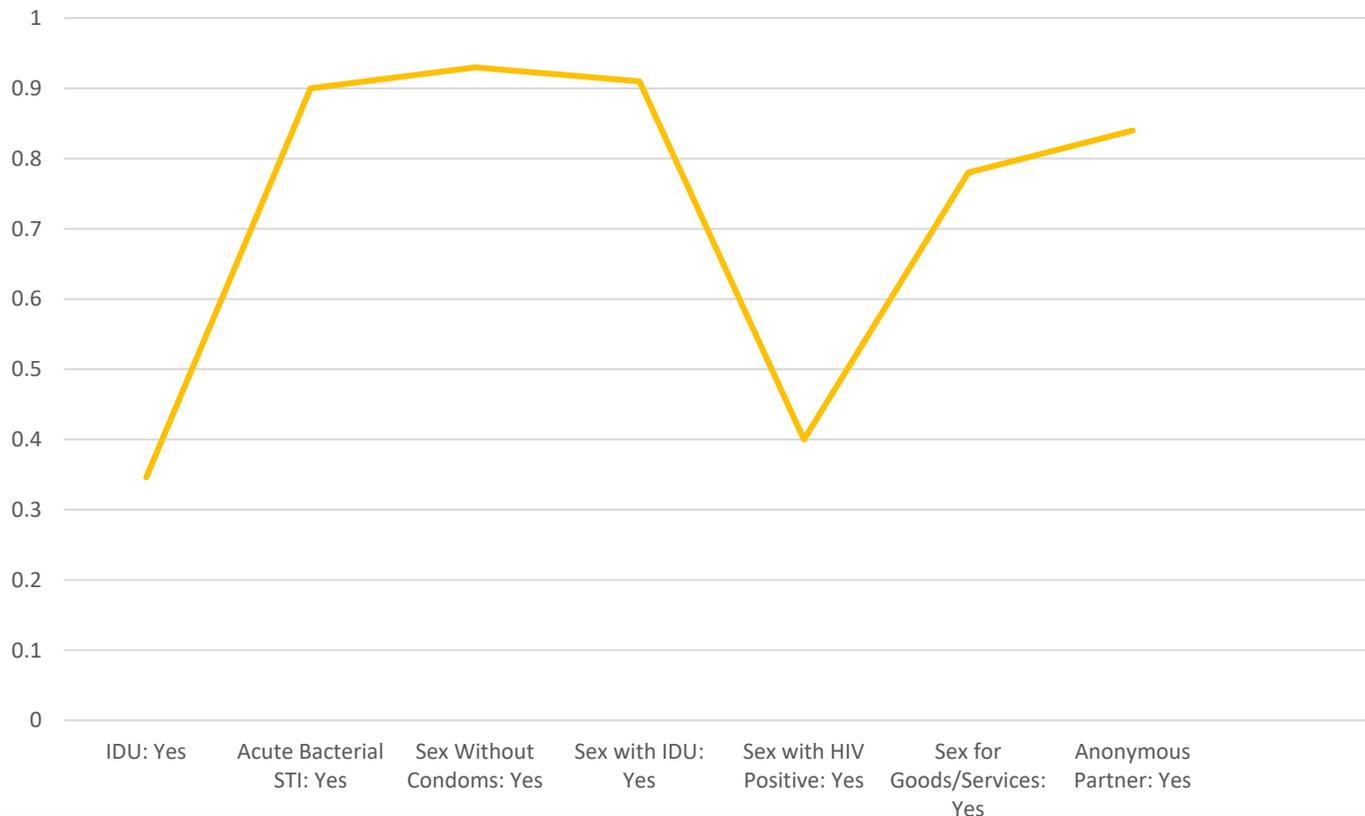
- Characterized by:
  - Higher reported risk among all risk factor questions
- Highest percentage of those born outside of the U.S (69.5%)
- Highest percentage of those who self-reported their HIV risk as low (44.6%)

| | Class 1 (N=420) | Class 2 (N=160) | Class 3 (N=1243) | Class 4 (N=213) | Overall (N=2036) | p-value |
|---|---|---|---|---|---|---|
| **Age** | | | | | | |
| **Mean (SD)** | 37.3 (10.3) | 38.7 (10.7) | 38.1 (13.5) | 31.1 (9.19) | 37.2 (12.5) | |
| **Median [Min, Max]** | 35.0 [2.00, 76.0] | 36.0 [19.0, 81.0] | 35.0 [0, 122] | 30.0 [0, 54.0] | 35.0 [0, 122] | |
| **Baseline Gender** | | | | | | <0.01 |
| **Female or Woman** | 41 (9.8%) | 24 (15.0%) | 390 (31.4%) | 28 (13.1%) | 483 (23.7%) | |
| **Male or Man** | 368 (87.6%) | 129 (80.6%) | 765 (61.5%) | 172 (80.8%) | 1434 (70.4%) | |
| **Transgender, Gender Non-conforming** | 11 (2.6%) | 7 (4.4%) | 88 (7.1%) | 13 (6.1%) | 119 (5.8%) | |
| **Race** | | | | | | <0.01 |
| **White** | 310 (73.8%) | 111 (69.4%) | 597 (48.0%) | 122 (57.3%) | 1140 (56.0%) | |
| **Black/ African American** | 58 (13.8%) | 28 (17.5%) | 402 (32.3%) | 27 (12.7%) | 515 (25.3%) | |
| **More than One Race/ Other** | 44 (10.4%) | 16 (10.0%) | 199 (16.0%) | 57 (20.7%) | 316 (15.5%) | |
| **Asian** | 8 (1.9%) | 5 (3.1%) | 45 (3.6%) | 7 (3.3%) | 65 (3.2%) | |
| **Identifies as Hispanic/Latinx** | | | | | | <0.01 |
| **Yes** | 306 (72.9%) | 104 (65.0%) | 721 (58.0%) | 145 (68.1%) | 1276 (62.7%) | |
| **No** | 111 (26.4%) | 56 (35.0%) | 491 (39.5%) | 62 (29.1%) | 720 (35.4%) | |
| **Prefer Not to Answer** | 3(0.7%) | 0 (0%) | 31 (2.4%) | 6 (2.8%) | 40 (2.0%) | |
| **Born in the U.S** | | | | | | <0.01 |
| **Yes** | 150 (35.7%) | 63 (39.4%) | 597 (48.0%) | 63 (29.6%) | 873 (42.9%) | |
| **No** | 260 (61.9%) | 95 (59.4%) | 611 (49.2%) | 148 (69.5%) | 1114 (54.7%) | |
| **Prefer Not to Answer** | 10 (2.4%) | 2 (1.3%) | 35 (2.8%) | 2 (1.0%) | 49 (2.4%) | |
| **Type of Service** | | | | | | <0.01 |
| **Came for Other Services** | 76 (18.1%) | 24 (15.0%) | 739 (59.5%) | 58 (27.2%) | 897 (44.1%) | |
| **Came for PrEP Services** | 344 (81.9%) | 136 (85.0%) | 504 (40.5%) | 155 (72.8%) | 1139 (55.9%) | |
| **You Think Your Chances of Getting Infected with HIV Are:** | | | | | | <0.01 |
| **None** | 43 (10.2%) | 11 (6.9%) | 247 (19.9%) | 31 (14.6%) | 332 (16.3%) | |
| **Low** | 183 (43.6%) | 53 (33.1%) | 431 (34.7%) | 95 (44.6%) | 762 (37.4%) | |
| **Moderate** | 94 (22.4%) | 50 (31.3%) | 166 (13.4%) | 58 (27.2%) | 368 (18.1%) | |
| **High** | 46 (11.0%) | 30 (18.8%) | 69 (5.6%) | 23 (10.8%) | 168 (8.3%) | |
| **Missing** | 54 (12.9%) | 16 (10.0%) | 330 (26.5%) | 6 (2.8%) | 406 (19.9%) | |

# Discussion:

- Our analysis found low risk perception among those in the highest HIV risk class

- History of an STI was important to risk stratification between class 1 and 3 (low risk and low/moderate risk)
  - These groups differed by gender and type of services sought

- Interventions are needed to focus on addressing HIV risk perception

- Identifying those with a recent STI may help to focus prevention efforts.

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