**A comparative study between New York City and National adults’ sexual behaviors**

**Next steps**

* **Add unweighted sample size for Table 1 and weighted characteristics**
* **Add tables with the actual values from the graph**
* **Add anal sex graphs/figures**

**Target journal:** Sexuality Research and Social Policy

**Research question**

Are there differences between NYC and National sexual behaviors and across demographic characteristics?

**Study aims**

* Descriptive comparisons between NYC and NHANES
* Identify differences across several demographic characteristics

**Framing**

Unconscious biases in risk characterization based on demographic and physical characteristics, like race/ethnicity, gender, age, and body mass index (BMI) may influence the practices of obstetric and gynecological and primary care providers in the US. Higher rates of STIs/HIV in urban settings such as NYC – helpful to compare sexual behaviors in NYC to US as a whole.

**Methods**

Data

We used data from the 2013-2014 New York City Health and Nutrition Examination Survey (NYC HANES) and 2011-2014 National Health and Nutrition Survey (NHANES) data, combining 2011-2012 and 2013-2014 to improve precision among smaller demographic categories (1). NYC HANES and NHANES are population-based, cross-sectional surveys, and NYC HANES was modeled after NHANES (2, 3). NYC HANES used a three-stage cluster sampling design of the population of civilian, non-institutionalized NYC residents ages 20 or, with a survey sample of 1,524 participants, for an overall response rate of 36% (2). NHANES used a four-stage cluster sampling design of the civilian, non-institutionalized resident population of the United States (4). The response rate for NHANES 2011-2012 survey was 72.6% and 71.0% for the 2013–2014 survey (5). In both NYC HANES and NHANES, interviews were face-to-face and included an audio computer-assisted self-interview (ACASI) portion on sensitive topics, which included sexual behaviors. .

*Measures and Analysis*

The surveys included questions on lifetime prevalence of sex by sexual behavior: vaginal, oral (performing or receiving), and anal, and by sexual partner same-sex and/or opposite sex. For each behavior, those who reported having ever having engaged in the behavior, were asked the number of sexual partners in the past 12 months. We categorized number of partners in past year as 0, 1 or 2 or more. We stratified lifetime prevalence and past year sex partners for each sexual behavior by sex (male/female), age, race/ethnicity and Body Mass Index (BMI). We accounted for complex survey design and nonresponse in the NYC HANES dataset including the ACASI weight. All measures were age standardized to the 2010 US Census population. All analysis was conducted using Stata version 15 (6).

NHANES only asked questions on number of sex partners in the past year to the population under age 59 (7). Thus, we restricted the NYC HANES sample to participants aged 20 to 59, for most analyses, but included participants up to 69 in NYC for the age stratified measures. The final analytic sample of NYC HANES was 1,393 and for NHANES 7,697 participants.

**Results**

Table 1 shows the characteristics of the participants of NYC HANES and NHANES. In NYC 58.1% of the respondents were female, and in NHANES 51.4% were female. In both surveys, approximately 25% of the sample was in the 20-29 age group. Both surveys had a similar distribution of participants by race/ethnicity. Regarding BMI, while the largest proportion (38.5%) in NYC had a BMI below 25, at the national level, the largest proportion (36.8%) had a BMI of 30 or higher. In both surveys, more than 90% of the participants reported ever having vaginal sex, more than 80% reported ever having oral sex, and approximately 14% of the participants in NYC reported ever having same-sex sex compared with 8% at the national level. Across all three sexual behaviors, participants in NYC report higher number of past-year partners than at the national level.

Figure 1 shows the age-standardized distribution of lifetime prevalences of vaginal, oral and/or same-sex sex in NYC and at the national level by sex. Lifetime prevalences of vaginal, oral and same-sex sex were similar between NYC and nationally and between females and males. At the national level, a higher proportion of both males and females who reported ever having vaginal sex reported zero partners in the past year compared to NYC. In NYC, the distribution of number of vaginal sex partners were different between males and females; more females reported one partner than males, while more males reported 2 or more partners than females. At the national level, the proportion of zero past-year oral sex partners was lower than in NYC for both females and males. On average, reports of one, two, or more oral sex partners were similar in NYC and at the national level for females and males. Among participants who reported ever having same-sex sex, higher proportion of NYC males reported one or more partners than nationally.

Figure 2 shows the age-standardized distribution of lifetime prevalence of vaginal, oral and/or same-sex sex in NYC and nationally by age group. Overall, the distribution of sexual behaviors and reported number of partners follows a similar distribution by age in NYC and at the national level. The main difference was among those aged 50-59. A higher proportion of participants in this age group in NYC reported one vaginal sex partner and/or one oral sex partner than at the national level. In the case of NYC, where it was possible to observe reported number of past-year partners for participants ages 60-69, the proportion of participants who report at least one partner is similar to those ages 50-59.

Figure 3 shows the age-standardized distribution of lifetime prevalence of vaginal, oral and/or same-sex sex in NYC and nationally by race/ethnicity. Overall, there was a similar distribution in NYC and at the national level, and across race/ethnicity. Similarly, reported past-year vaginal and oral sex partners were similar across race/ethnicity, and between NYC and the national average. Lastly, Figure 4 shows the age-standardized distribution of lifetime prevalence of vaginal, oral and/or same-sex sex in NYC and nationally by BMI. There were no differences between reported lifetime prevalence of vaginal, oral, and/or same-sex sex in NYC and at the national level, and across BMI levels. The number of reported past-year sex partners by sexual behavior was also similar across geographies and BMI levels.

**Discussion/Conclusion**

* Slight differences by gender and age. Older people still active. More reported same sex in NYC.
* Small differences between NYC and National by age and gender
* No discernible differences across race/ethnicity or BMI / National/NYC

**Table 1: Characteristics of participants in NYC (2013-2014) and National (2011-2014)**

|  |  |  |
| --- | --- | --- |
|  | NYC  n=1,393 | National  n=7,697 |
| Female | 58.1% | 51.4% |
| Age group |  |  |
| 20-29 | 25.8% | 25.3% |
| 30-39 | 24.2% | 25.5% |
| 40-49 | 18.1% | 25.1% |
| 50-59 | 19.0% | 24.1% |
| 60-69 | 12.9% | - |
| Race/ethnicity |  |  |
| Asian | 14.0% | 14.4% |
| Black | 22.5% | 22.9% |
| Hispanic | 25.4% | 21.9% |
| White | 32.7% | 37.2% |
| Other | 5.5% | 3.5% |
| BMI |  |  |
| <25 | 38.5% | 32.5% |
| 25-29 | 32.9% | 30.7% |
| >30 | 28.6% | 36.8% |
| Lifetime prevalence |  |  |
| Vaginal sex | 92.6% | 94.0% |
| Oral sex | 80.2% | 80.9% |
| Same-sex sex | 13.9% | 7.9% |
| Vaginal sex partners in past year (among those reporting ever vaginal sex) |  |  |
| 0 | 1.6% | 14.3% |
| 1 | 73.9% | 67.1% |
| ≥2 | 24.5% | 18.6% |
| Oral sex partners in past year among those reporting ever oral sex |  |  |
| 0 | 13.2% | 24.8% |
| 1 | 70.5% | 61.8% |
| ≥2 | 16.3% | 13.5% |
| Same-sex sex partners in past year among those reporting ever same-sex sex |  |  |
| 0 | 49.0% | 63.1% |
| 1 | 28.7% | 21.5% |
| ≥2 | 22.3% | 15.4% |

\*unweighted characteristics

**Figure 1: Lifetime age-standardized prevalence and past-year number of sex partners by type of sexual behavior in NYC (2013-2014) and National (2011-2014) by sex.**

**Figure 2: Lifetime prevalence and past-year number of sex partners by type of sexual behavior in NYC (2013-2014) and National (2011-2014) by age group.**

**Figure 3: Lifetime age-standardized prevalence and past-year number of sex partners by type of sexual behavior in NYC (2013-2014) and National (2011-2014) by race/ethnicity.**

**Figure 4: Lifetime age-standardized prevalence and past-year number of sex partners by type of sexual behavior in NYC (2013-2014) and National (2011-2014) by BMI.**

**References**

1. National Health and Nutrition Examination Survey: Analytic Guidelines, 2011-2014 and 2015-2016.

2. Thorpe L. E., Greene C., Freeman A., Snell E., Rodriguez-Lopez J. S., Frankel M. et al. Rationale, design and respondent characteristics of the 2013-2014 New York City Health and Nutrition Examination Survey (NYC HANES 2013-2014), Preventive medicine reports 2015: 2: 580-585.

3. National Health and Nutrition Examination Survey (NHANES) Data. In: (NCHS) N. C. f. H. S., editor: Centers for Disease Control and Prevention (CDC).

4. Johnson C., Dohrmann S., Burt V., Mohadjer L. National Health and Nutrition Examination Survey: Sample design, 2011–2014. In: Statistics N. C. f. H., editor. Vital Health Stat; 2014.

5. National Center for Health Statistics. National Health and Nutrition Examination Survey: Analytic Guidelines, 2011-2014 and 2015-2016: CDC; 2018.

6. StataCorp. Stata Statistical Software: Release 15, College Station, TX: StataCorp LLC; 2017.

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