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

**Target journal:** Sexuality Research and Social Policy or Contraception?

**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

**Methods**

Data

We used data from the 2013-2014 NYC Health and Nutrition Examination Survey (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 a population-based, cross-sectional surveys, and NYC HANES it is modeled after NHANES (2, 3). NYC HANES used a three-stage cluster sampling design of the urban population of residents ages 20 or older in NYC. The NYC Hanes survey sample was of 1,524 participants, 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. . NHANES targeted questions on number of sex partners in the past year to the population under 59 (6). Thus, we restricted our sample to participants aged 20 to 59, and included participants up to 69 in NYC for the age stratified questions. The final analytic sample of NYC Hanes was of 1,393 participants and NHANES of 7,697 participants.

*Measures*

The surveys included questions on lifetime prevalence of sex by sexual behavior: vaginal, oral (performing onto the opposite sex) and/or same-sex sex. Those who reported having any sexual behavior of sex, were asked the number of sexual partners in the past 12 months. We categorized number of partners as 0, 1 or 2 or more past-year partners. We stratified lifetime prevalence and sex partners by sexual behavior by sex, age, race/ethnicity and Body Mass Index (BMI).

*Statistical Analysis*

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 (7).

**Results**

Table 1 shows the unweighted 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. Around 14% of the participants in both samples were Asian, 23% Black, 25.4% Hispanic in NYC and 21.9% in NHANES, 32.7% were White in NYC and 37.2% in NHANES. Lastly, in NYC and NHANES 5.5% and 3.5% of the participants, respectively, were classified as other.

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 and 8% at the National level reported ever having same-sex sex. 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. Across all three sexual behaviors included in the study, participants in NYC report higher number of past-year partners than at the national level.

Figure 1 shows the distribution of lifetime prevalence of vaginal, oral and/or same-sex sex in NYC and at the national level by sex. Lifetime prevalence of vaginal, oral and same-sex sex was similar between NYC and national and between females and males. At the national level, a higher proportion of people who reported ever having vaginal sex reported zero partners in the past year compared to NYC. While a larger proportion of females than males in NYC reported one partner in the past year, a larger proportion of males reported two or more past-year vaginal sex partners than male’s national average and their female counterparts. 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 partners was 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 the national average.

Figure 2 shows the distribution of lifetime prevalence of vaginal, oral and/or same-sex sex in NYC and National 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. Main difference was among ages 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 distribution of lifetime prevalence of vaginal, oral and/or same-sex sex in NYC and National 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 distribution of lifetime prevalence of vaginal, oral and/or same-sex sex in NYC and National 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.
* 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 |  |  |
| 0 | 1.6% | 14.3% |
| 1 | 73.9% | 67.1% |
| ≥2 | 24.5% | 18.6% |
| Oral sex partners |  |  |
| 0 | 13.2% | 24.8% |
| 1 | 70.5% | 61.8% |
| ≥2 | 16.3% | 13.5% |
| Same-sex sex partners |  |  |
| 0 | 49.0% | 63.1% |
| 1 | 28.7% | 21.5% |
| ≥2 | 22.3% | 15.4% |

\*unweighted characteristics

**Figure 1: Lifetime 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 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 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. NHCS. 2013-2014 Data Documentation, Codebook, and Frequencies. National Health and Nutrition Examination Survey Data file: SXQ\_Hxpt 2015.

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