

2019-2020 Duke University

Patient Engagement and Emerging Adults Institution Report

Michael Lee¹
Heather Batchelder, MA²

Duke Center for Personalized Health Care
Hock Plaza
2424 Erwin Road
Durham, NC 27705



¹ Michael Lee, Intern, Duke Center for Personalized Health Care

² Heather Batchelder, Research Program Leader, Duke Center for Personalized Health Care

Executive Summary

The *Patient Engagement and Emerging Adults Project* aims to identify and address health and wellness related issues that may occur during the emerging adulthood period of life (18 - 30 years old). This is done through collection of survey data from students at various academic institutions and then analyzed to help assist these institutions find opportunities to positively impact their students' health behaviors and outcomes. The current project is a partnership between the Duke Center for Personalized Health Care and the following academic institutions: Duke University (Duke), North Carolina Central University (NCCU), and Durham Technical Community College (Durham Tech).

In fall 2016, an electronic health survey questionnaire was administered to a sample of 1,943 individuals at all three institutions. The questionnaire assessed for information such as demographics, current health status, health related behaviors, chronic health conditions, BMI, mental health, social support, mindfulness, spirituality, healthcare service use, and discrimination. In fall 2017, the questionnaire was re-administered at all three institutions to students from the 2016 cohort, as well as to a new cohort of students. The re-administration included data from 615 students of the previous cohort and 2,601 new student.

Finally, in 2019, the questionnaire was re-administered again at all three institutions to a sample of 16,117. During this administration the questionnaire assessed for areas such as resiliency and trauma in addition to topics assessed in 2016 and 2017. There is now a large and unique dataset to conduct both cross-sectional and longitudinal analysis to answer a variety of research questions associated with student health behaviors, health care utilization, health outcomes, and institutional capacity for improving prevention efforts. Furthermore, through the use of health data and implementation of evidence-based interventions (EBIs), this project will evaluate and inform pathways in which institutions may more effectively improve the population level health outcomes of their unique student populations.

Out of 3,950 Duke students who received a recruitment email in 2019, 1,060 students completed the survey (a response rate of 26.8%). The following document was created from self-report data from a sample of Duke students who identified as emerging adults (ages 18-30 years old; $n=859$). It highlights key health-related behaviors, as well as means of communication, that could further inform potential opportunities to positively impact the health and wellness of Duke students.

Highlights from Duke University Students Include:

- ◆ The majority of Duke students (67%) reported having *very good or excellent* overall health
- ◆ 90% of Duke students reported that they do not currently use tobacco products, and 73% reported that they have never used tobacco
- ◆ 64% of students reported engaging in moderate physical activity at least a few times a week
- ◆ Over 90% of Duke students received at least 6 or 7 hours of sleep daily
- ◆ The majority of Duke students did not consume at least 2 cups of fruits and vegetables a day
- ◆ 41% of Duke students reported not using protection during the majority of sexual experiences
- ◆ Depression/anxiety and asthma were the most frequently reported chronic conditions by Duke students
- ◆ The average BMI for Duke students are 24.1, which falls into the healthy weight BMI category
- ◆ Discrimination based on biological sex was the most commonly reported form of discrimination
- ◆ The majority of students felt that college leadership prioritized student health and wellbeing
- ◆ *Email* was the most effective way to communicate with students regarding health resources

Institution Student Population

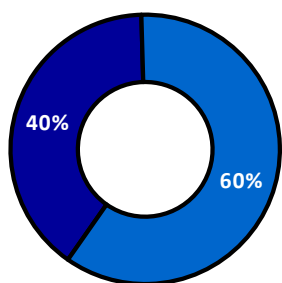
Duke University (Duke) had a total enrollment of 16,766 students, according to the most recent available data (2019-2020) from the National Center for Education Statistics.

Approximately 60% of the general Duke population is comprised of graduate students and is evenly divided between males (51%) and females (49%). In terms of race, the general Duke student population is 40% White, 21% Asian, 9% Black, 7% multi-racial, and 14% Other.

The survey population had a much larger graduate student population (98%) compared to the general Duke population. It also was more heavily represented by female students (64%) compared to the general Duke population (51%). The survey population had a larger representation of white students compared to the Duke population (41% to 55% respectively), and a smaller representation of Black students (9% to 5%).

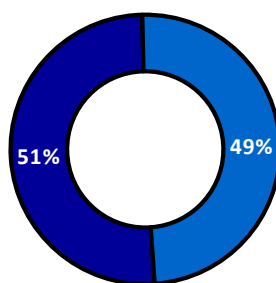
Duke Population

Student Type



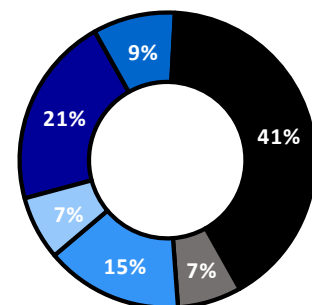
■ Undergraduate ■ Graduate

Sex



■ Female ■ Male

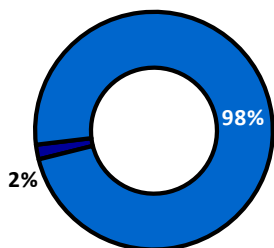
Race



■ Asian ■ Black
■ White ■ Multi-Racial
■ Other Race ■ Hispanic/Latino

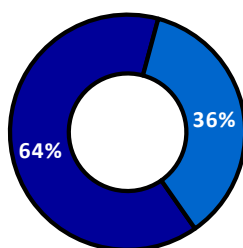
Survey Population

Student Type



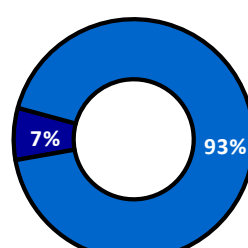
■ Undergraduate
■ Graduate

Sex



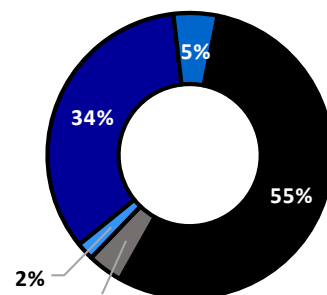
■ Female ■ Male

Hispanic/Latino



■ Yes ■ No

Race



■ Asian ■ Black
■ White ■ Multi-Racial
■ Other

Self-Rated Health

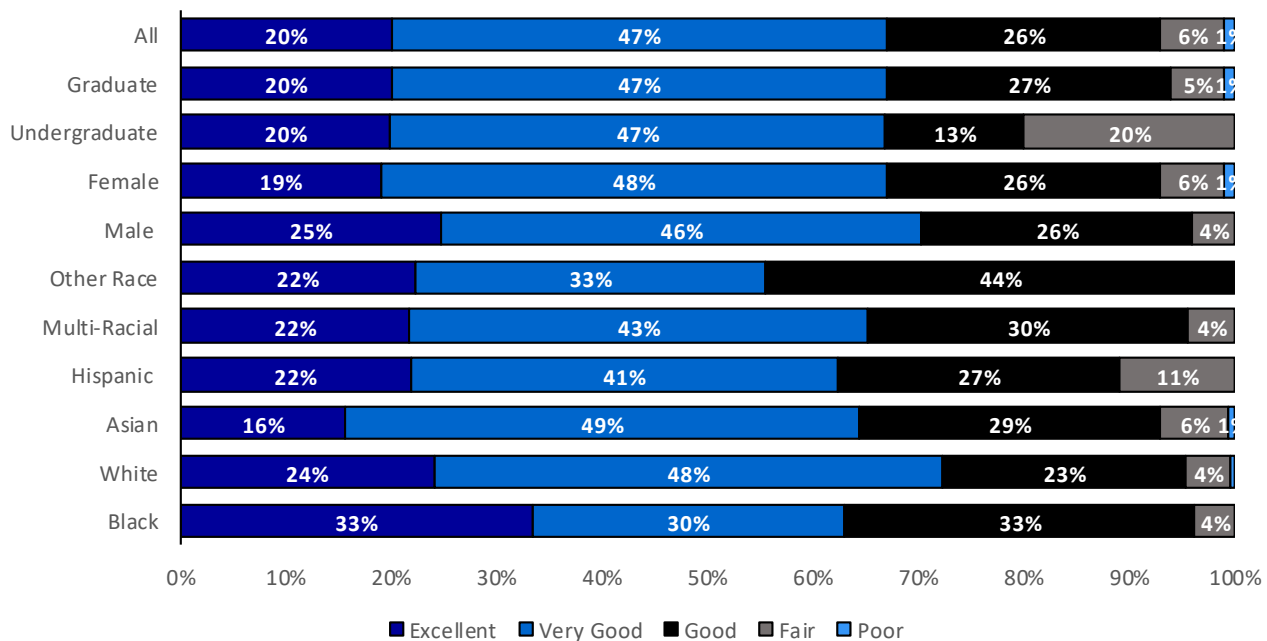
Students answered questions regarding their perception of their health. Their responses were used to determine their relative self-reported health status.

Approximately 67% of Duke students reported having either excellent or *very good* overall health, **while only 7% rated their general health as fair or poor.**

Undergraduate students and graduate students had equivalent proportions of individuals reporting excellent or very good health, 67%.

More male students compared to female students described themselves as having excellent or very good health, 71% and 67% respectively.

The majority of White (72%), Asian (65%), Multi-racial students (65%), Hispanic/Latino (63%), Black (63%), and students identifying as other races (“Other”; 55%) described their health as excellent or very good.



Health Behaviors

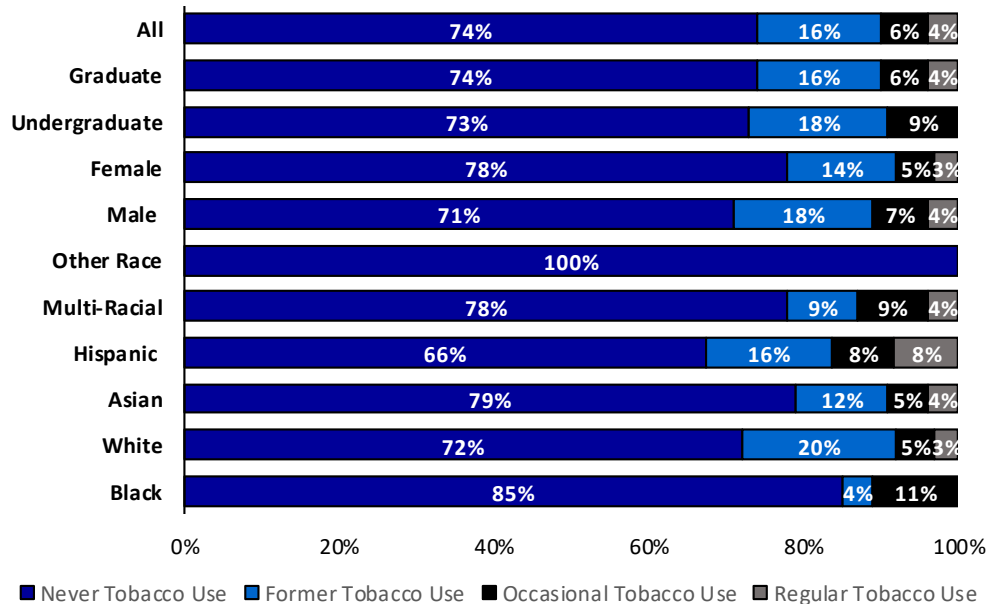
Students were asked to report on behaviors related to tobacco use, moderate physical activity, sleep duration, fruit and vegetable consumption, and sexual health. The majority of Duke students engaged in healthy behaviors related to tobacco use, physical activity, sleep duration, and fruit and vegetable consumption. However, the majority of Duke students did not utilize protection during the majority of sexual experiences.

Tobacco Use

The majority of Duke students have never used a tobacco product (74%). Only 4% of students are regular users and only 6% occasionally, or socially, use.

More male students tend to use tobacco either regularly or socially, with a combined 11% reporting at least occasional use, compared to females, with only a combined 8% reporting at least occasional use.

Hispanic (16%) and Multi-Racial students (13%) tend to use tobacco products more regularly or occasionally compared to other racial groups.



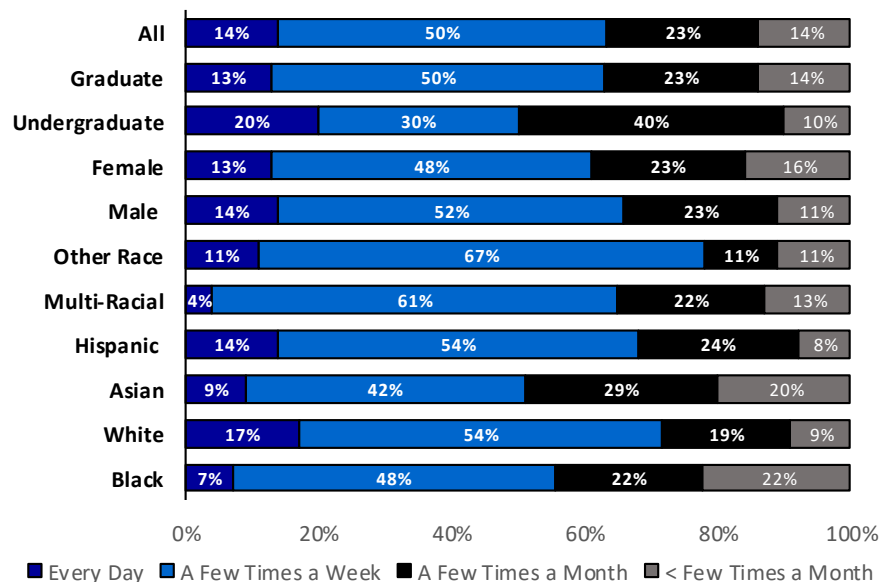
Physical Activity

Sixty-four percent of Duke students engaged in moderate physical activity at least a few times per week.

A greater proportion of male students (66%) compared to female students (51%) engaged in moderate physical activity at least a few times per week.

Approximately 63% of graduate students engaged in moderate physical activity at least a few times per week, while only 50% of undergraduates did.

Black (55%) and Asian students (49%) appeared to engage in physical activity the least of the surveyed races.

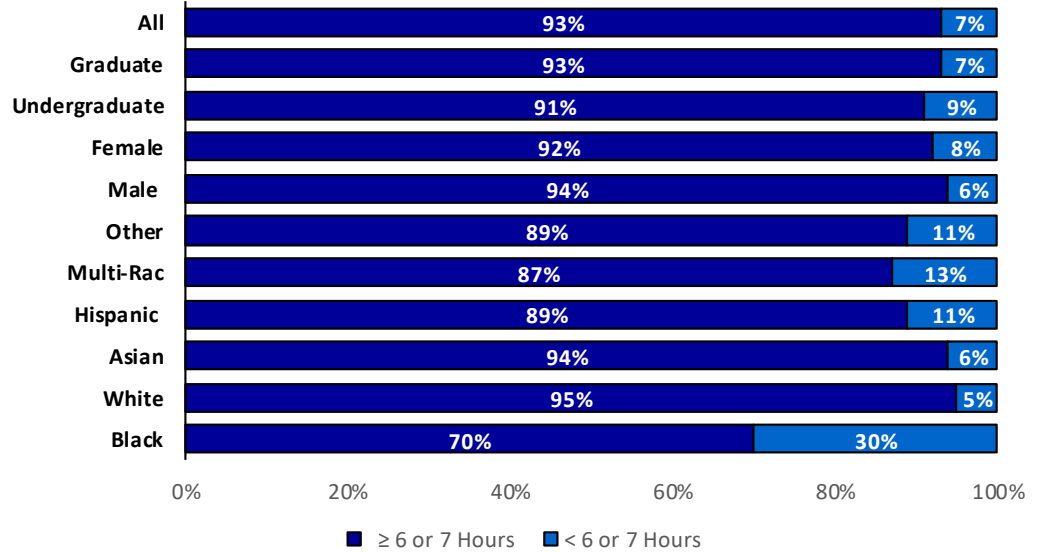


Average Hours of Sleep

The National Sleep Foundation recommends that adults receive *at least* 6 hours of sleep per night. **Over 90% of Duke students** received at least 6 hours of sleep per night.

Slightly more graduate students (93%) compared to undergraduate students (91%) received at least 6 hours of sleep daily.

Slightly more male students (94%) compared to female students (92%) received at least 6 hours of sleep per day.



Thirty percent of Black students slept less than 6 or 7 hours daily, indicating that Black students have the largest proportion of individuals reporting limited sleep duration.

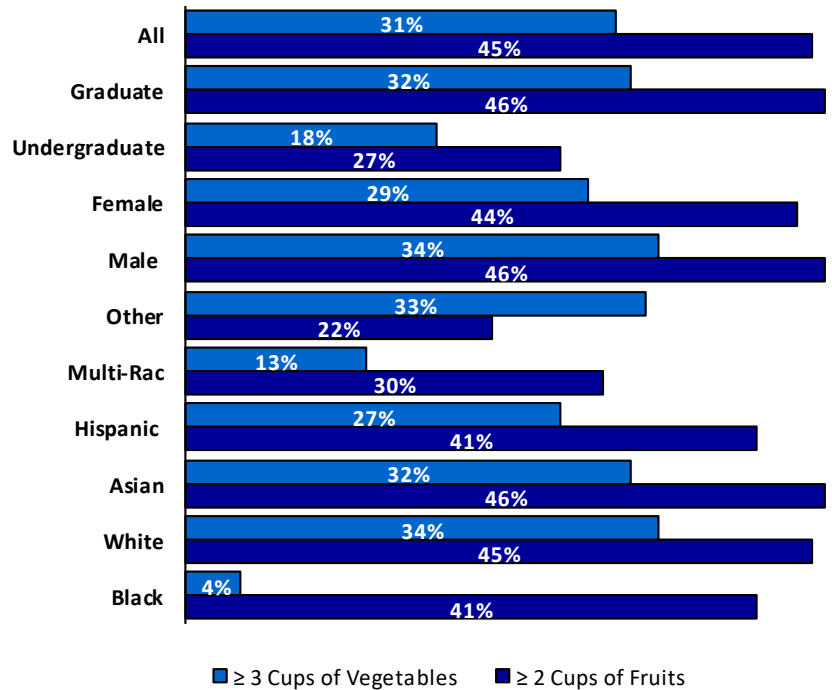
Fruits and Vegetable Consumption

The USDA recommends that adults consume 3 or more cups of vegetables and 2 or more cups of fruit per day. In the survey, students were given examples of what 1 cup of vegetables or fruits looked like and then asked to report on the number of cups of vegetables and fruits they consumed daily.

Only 31% of Duke students consumed at least 3 cups of vegetables and only 45% consumed at least 2 cups of fruit daily.

More graduate students consumed recommended amounts of vegetables (32%) and fruits (46%), compared to undergraduate students (18% and 27%).

More male students consumed recommended amount of vegetables (34%) and fruits (46%) daily, compared to female students (29%; 44%).



Black students (4%) had the smallest proportion of students consuming recommended amounts of vegetables.

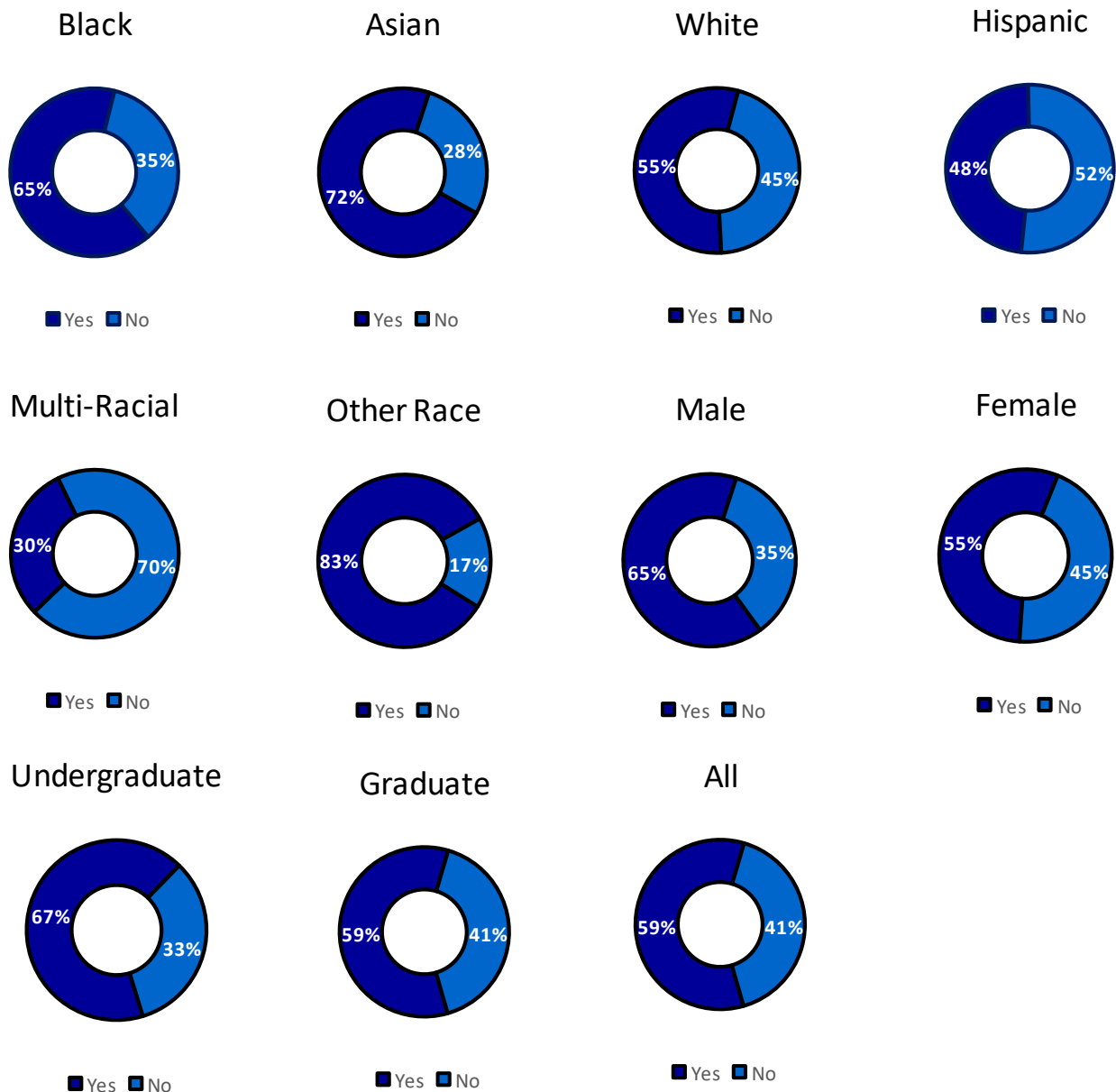
Sexual Health Behaviors

Students were asked to report on whether they were currently sexually active and any sexual health behaviors. Of sexually active students at Duke, **59% of students reported that they did use a condom or dental dam during the majority of intercourse or oral sex experiences.**

More Asian students (72%) and students of “Other” races (83%) used condoms or dental dams during the majority of intercourse or oral sex experiences, as compared to other racial groups. Multi-Racial students (30%) had the lowest proportion of students who used a condom or dental dam during the majority of intercourse or oral sex experiences.

More male students (65%) compared to female students (55%) reported using condom or dental dams during the majority intercourse or oral sex experiences.

More undergraduate students (67%) compared to graduate students (59%) used condoms or dental dams during the majority of intercourse or oral sex experience.



Health Outcomes

Two major health outcomes were evaluated—chronic illness and body mass index (kg/m²). These two measures were chosen because they are each a clinically important health outcome.

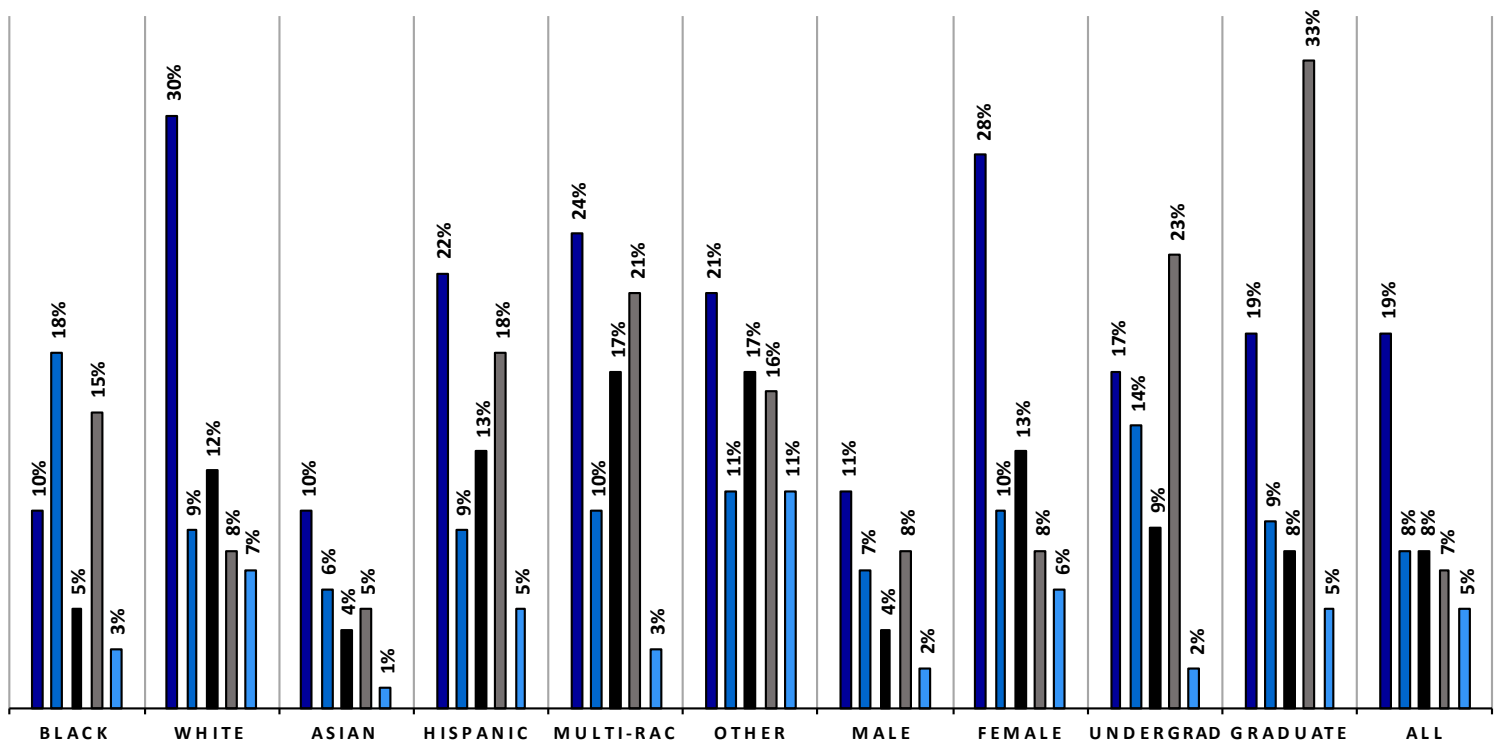
Chronic Illness

Duke students reported on chronic conditions they have been diagnosed with. **Out of 18 different conditions, depression/anxiety and asthma were the most frequently reported conditions.** Twenty-seven percent of all Duke students reported they previously or currently struggle with depression/anxiety or asthma. Including these two, the top five most frequently experienced chronic conditions by Duke students were migraines (8%), overweight/obese BMI (7%), and gastrointestinal disease (5%).

The top 5 most identified chronic illnesses among students are:

1. Depression/Anxiety
2. Asthma
3. Migraines
4. Overweight/Obese
5. Gastrointestinal Disease

■ Depression/Anxiety ■ Asthma ■ Migraines ■ Overweight/obesity ■ Gastrointestinal Diseases



Body Mass Index (kg/m²)

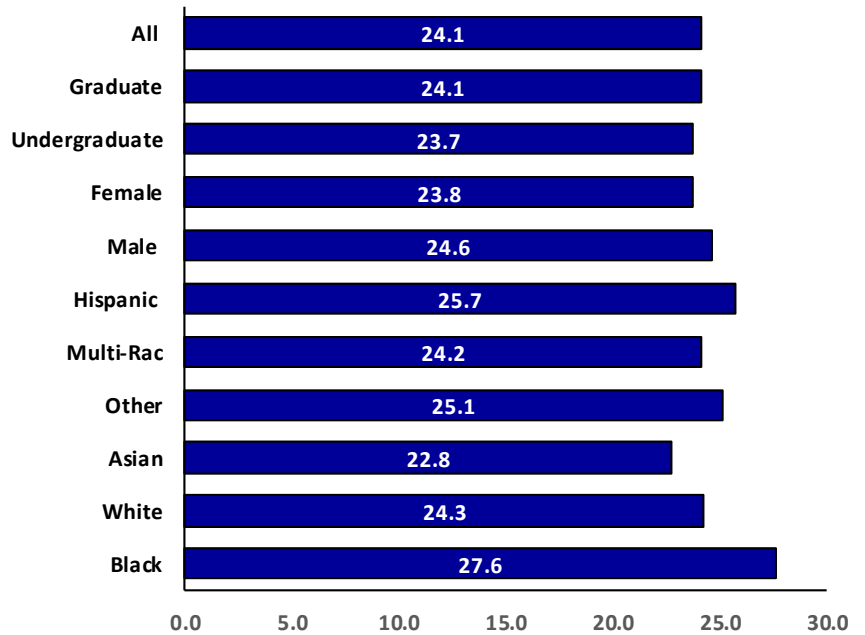
Students were asked to report their height and weight so that BMIs could be calculated for each student. An average BMI was then created for each student group.

The average BMI for Duke students was 24.1, which is considered to be in the healthy weight category of BMI (≥18.5-24.9).

Undergraduate students had a slightly lower average BMI (23.7) compared to graduate students (24.1).

The average male BMI (24.6) was higher than the average female BMI (23.8).

Black students had the highest BMI (27.6) and **Asian students had the lowest BMI (22.8)** of the surveyed groups



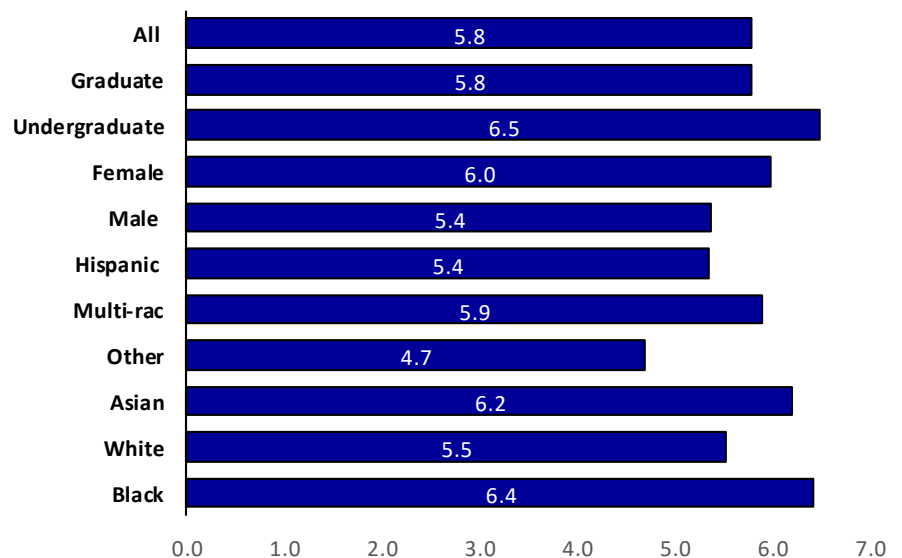
Mental Health

Students reported on several mental health concerns including perceived stress and depression risk. They also reported on their levels of resiliency and whether they had experiences of past trauma.

PSS-4, Perceived Stress

The Perceived Stress Scale-4 (PSS-4) measures an individual's perceived stress and was used to measure the frequency at which students experienced stress in the past month. The lowest possible score is 0 and the highest possible score is 16. Higher PSS-4 scores indicate higher levels of perceived stress in a respondent's life, which can lead to debilitating physical conditions and emotional vulnerabilities.

The average student's score was 5.8, with Undergraduate students having the highest average score of all groups with an average score of 6.5.



Female students had a slightly higher score of 6.0 compared to male students' average score of 5.4.

Black students had the highest average score of 6.4, compared to other races. Students of “Other” races have the lowest average score of all groups with a score of 4.7.

PHQ-2, Depression Screener

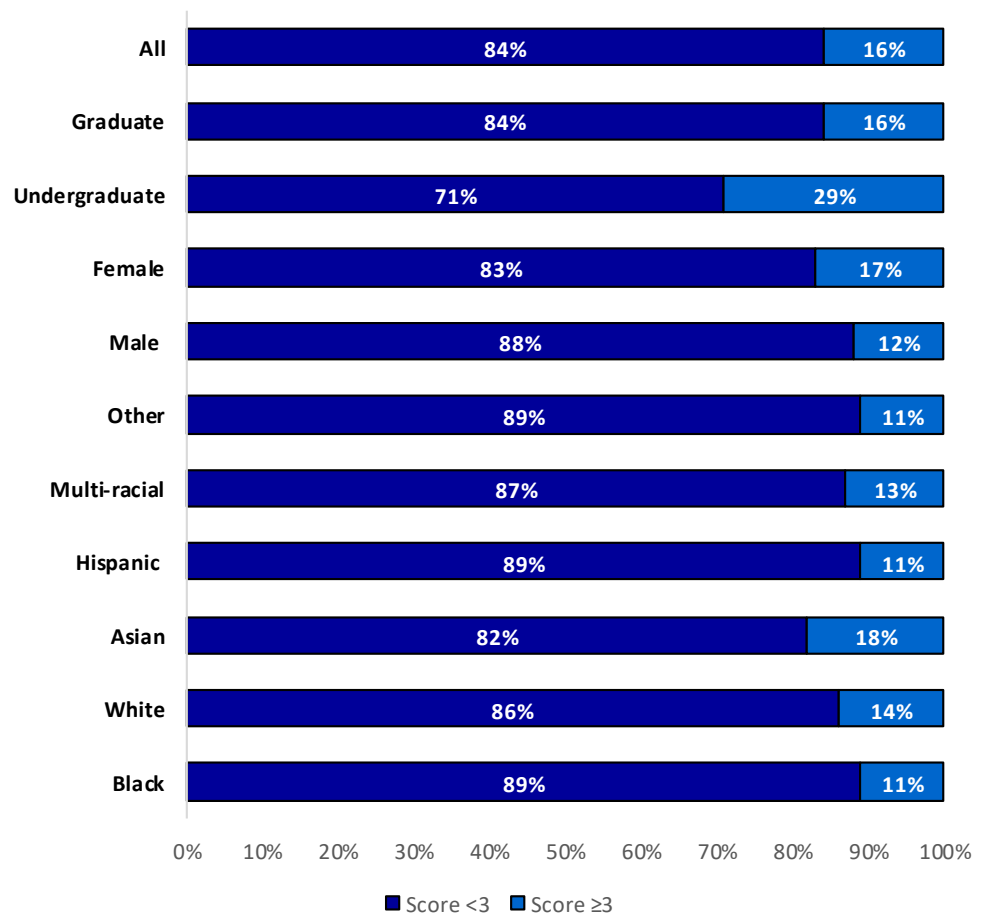
The Patient Health Questionnaire-2 (PHQ-2) is a clinical measure assessing the frequency of depressed mood. Students reported how frequently they experiences symptoms of depression over a two-week period. Individuals can score between a 0 and 6 on the PHQ-2. PHQ scores of 3 or higher indicate a risk for depression and indicate an individual should be further evaluated with other diagnostic tools.

Among all students, 16% had scores of three or higher, meaning that more than 10% of the population may meet criteria for a major depressive disorder and should be further evaluated.

More undergraduate students (29%) compared to graduate students (16%) had a score of 3 or more.

Slightly more female students (17%) compared to male students (12%), reported a score of 3 or more.

Asian students had the largest proportion of students (18%) from any racial group reporting a score of 3 or higher. **In comparison to other racial groups, students of “other” races, Hispanic, and black students had the smallest proportion of individuals reporting a score of 3 or higher** with only 11% of each group reporting an elevated score.



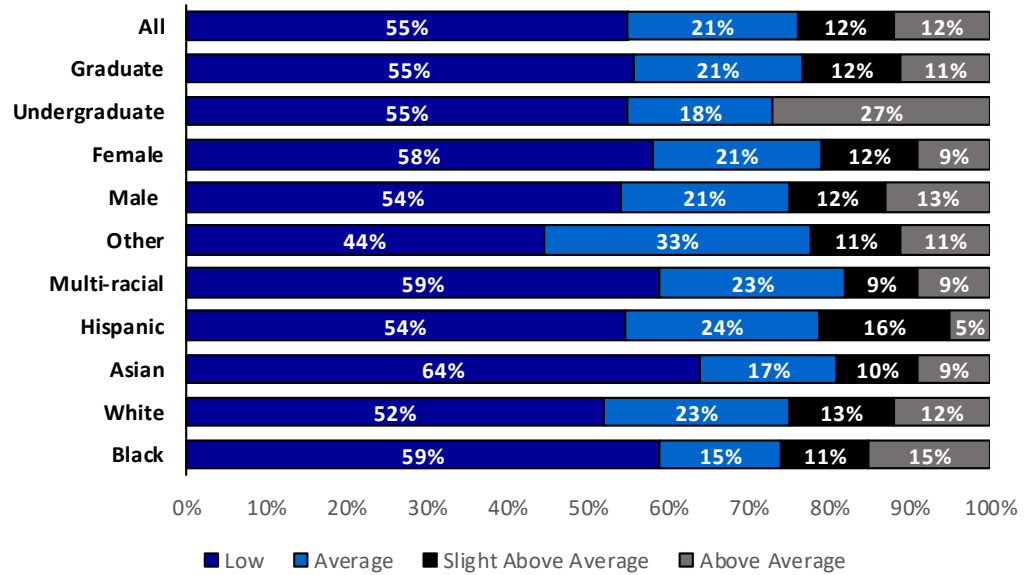
CD-RISC, Resiliency Levels

The Connor Davidson Resiliency Scale (CD-RISC) is a 10-item scale that assesses for levels of resiliency. Higher scores equal higher or above average levels of resiliency. Lower scores equal low or lower than average levels of resiliency. **Overall the majority of Duke students (55%) reported a lower than average resiliency.**

More undergraduate students (27%) had above average levels of resiliency, compared to 11% of graduate students.

More female students (58%) had lower than average levels of resiliency, compared to 54% of male students.

More Asian students (64%) reported lower than average levels of resiliency, compared to any other racial group, or student category.



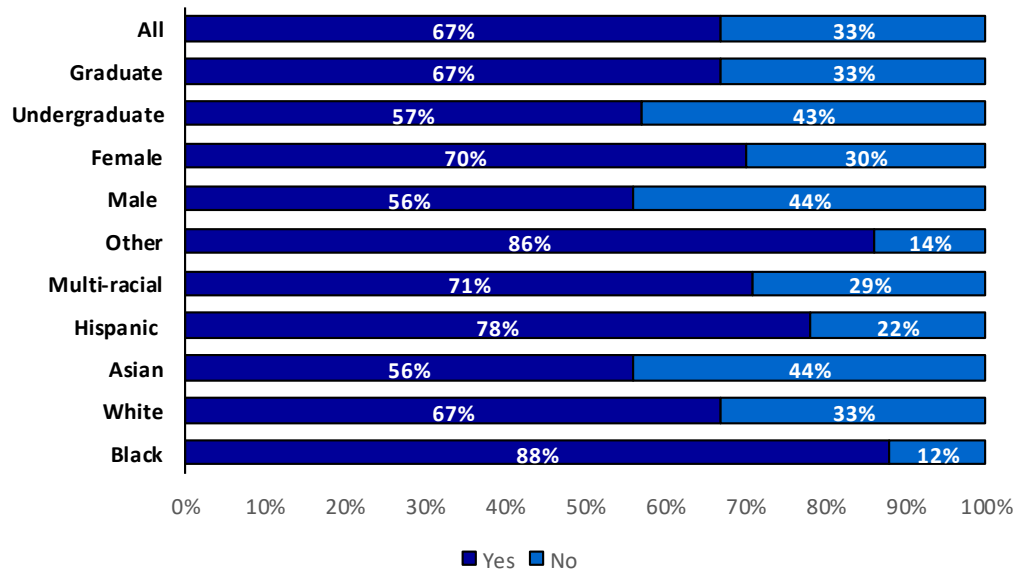
BTQ, Past Trauma

The Brief Trauma Questionnaire (BTQ) is a brief measurement to assess exposure to traumatic experiences and/or events. It is derived from the Brief Trauma Interview. Traumatic experiences can include things such as being in serious car accident, serving in a war zone, being assaulted, having a life threatening illness, or having a loved one die violently (such as in a serious car crash, mugging, or attack). Students were given the option to not answer these questions due to the sensitive nature of the topic. **Overall, 67% of Duke students reported previous exposure to trauma.**

More graduate students (67%) compared to undergraduate students (57%), reported that they have experienced trauma in the past.

More female students (70%) compared to male students (56%) reported they have experienced trauma in the past.

Black students had the largest proportion of individuals reporting past trauma, with 88% reporting a history of traumatic experiences. In comparison, Asian students have the smallest proportion of individuals reporting previous trauma, with 56% reporting that they have experienced trauma in the past.

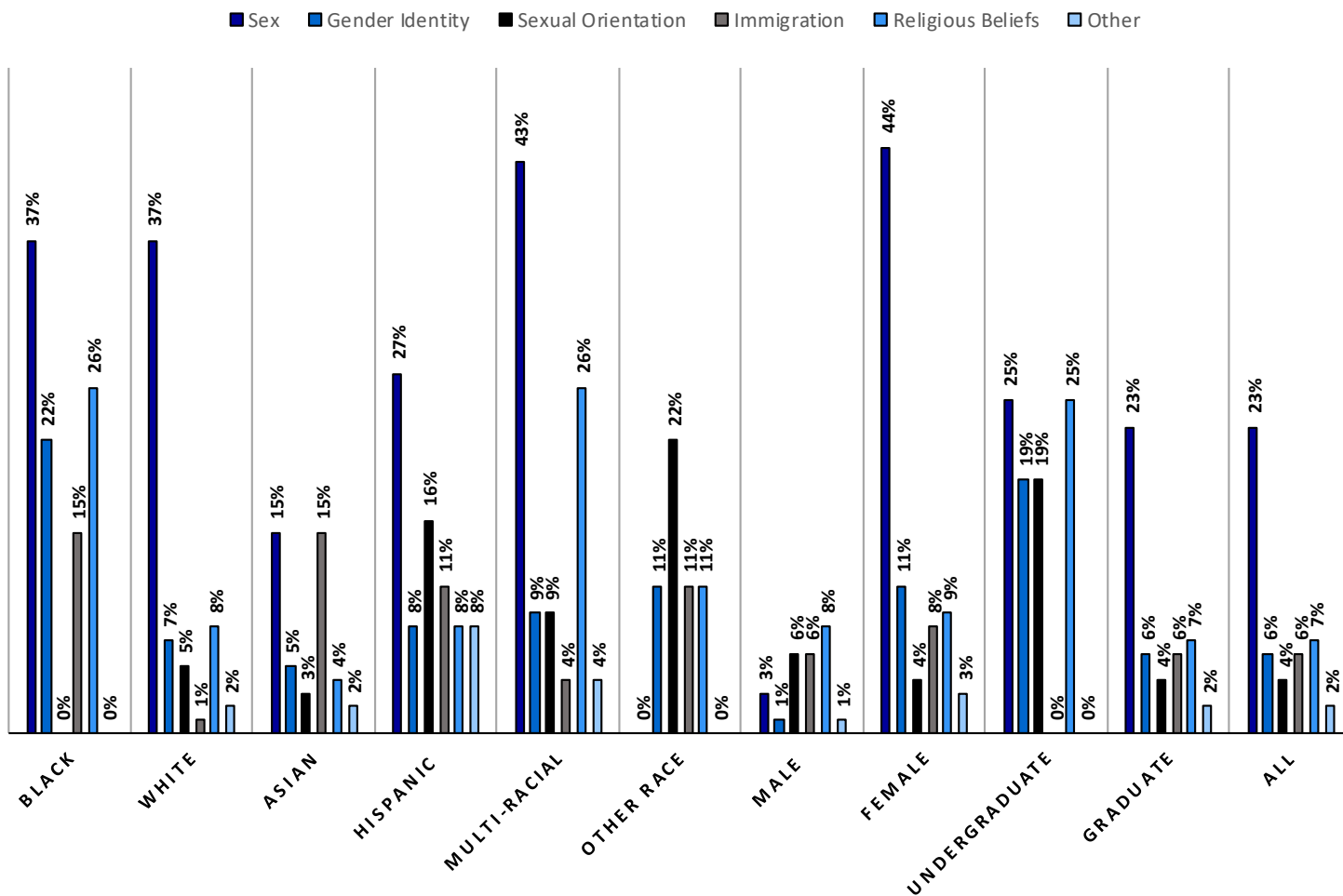


Perceived Discrimination

Duke students reported on chronic conditions they experienced. **Out of 6 different categories for types of discrimination, discrimination based on biological sex was the most frequently reported category.**

Twenty-three percent of all Duke students reported that they have experienced discrimination based on their biological sex. A much higher proportion of females (44%) than males (3%) reported having experienced this type of discrimination.

The second most frequently reported discrimination was discrimination for an individual’s religious beliefs, **with 7% of the students reporting this type of discrimination.**

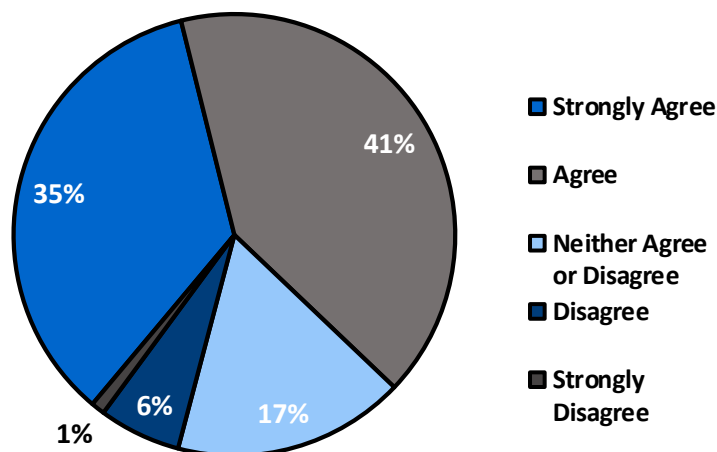


Leadership Engagement

Duke students were asked to report on their perception of the college leadership’s prioritization of student health and wellness.

The majority of students (76%) agreed (either strongly agree or agree) that student health and wellbeing are priorities for college leadership.

Only 7% of students disagreed (strongly disagree or disagree) that college leadership prioritized student health and wellness, with the remaining 17% of students reporting they neither agreed nor disagreed with this statement.



Communication Preferences

Students were asked to report on their preferred modes of communication regarding how they received information on health and wellness related campus resources.

Students reported that email was the best communication method for communication of health resources. Visiting the university website, and social media were also preferred methods of communication. Flyers were the least effective communication method.

