

**An Examination of Sedentary Behavior
and Stress Levels in Undergraduate
Students at Western Michigan University**

Student

Samantha Putman

Faculty Advisor

Dr. Michele L. McGrady

WHY FOCUS ON SEDENTARY BEHAVIOR AND STRESS?

Personal interest in combining health and communications.

Coming from a **communications lens**.

A passion for **helping** others.

DID YOU KNOW?

“Around **75%–90%** of doctor visits in the United States are in some way related to stress” (American Institute of Stress, 2017).

“Sedentary jobs have increased **83%** since 1950; furthermore, highly sedentary service jobs now account for **43%** of all US jobs” (Gremaud et al., 2018).

ABSTRACT

This thesis provides a snapshot of **two variables** affecting undergraduate students.

- Sedentary Behavior
- Stress

The intent of this study is to build a **foundation**.

Answering **Three** Key Questions...

- How much sedentary behavior are Undergraduate students engaging in?
- How much perceived stress are undergraduate students experiencing?
- How do undergraduate students like to receive health-related information?

Research Questions
How much sedentary behavior are undergraduate students engaging in?
How much perceived stress are undergraduate students experiencing?
How do undergraduate students like to receive health-related information?

Literature Review
Correlations between sedentary behavior and health risks
and World Health Organization (WHO) Guidelines

Methodology & Subject Recruitment
Data collection tools and participant incentives

Data Analysis

**Key
Findings**

LITERATURE REVIEW: SEDENTARY BEHAVIOR

- **World Health Organization (WHO)** defines sedentary behavior for adults as, *“time spent sitting or lying with low energy expenditure, while awake, in the context of occupational, educational, home and community settings, and transportation”* (2020, p. 38).
- **Park et al** found the permeation of technology has increased sedentary behavior and health risks (2020).

LITERATURE REVIEW: STRESS

- Sedentary behavior poses mental health risks that can affect an individual's self-efficacy. Zieff et al (2020) discuss in their research that physical inactivity and sedentary behavior are correlated to increased stress, anxiety, and depression.
- In this context, stress is defined as “A...feeling experienced when a person perceives the demands exceed (their)...resources” (American Institute of Stress).

LITERATURE REVIEW: WHY UNDERGRADUATES

- Still more research needs to be done to understand the how sedentary behavior and stress affect undergraduate students.**
- Covid-19 pandemic has compounded the poor diets and sedentary behavior of college students (Bertrand et al, 2020).**
- Undergraduates are a vulnerable population due to the permeation of technology in leisure activities (Rouvinen et al, 2020).**

METHODOLOGY: INSTRUMENTATION

Sedentary Behavior

→ International Physical Activity Questionnaire (IPAQ)

Stress

→ Perceived Stress Scale (PSS)

Demographics

→ Qualtrics Recommendations

METHODOLOGY: SUBJECT RECRUITMENT

March

Flyers at Sangren
Reaching out to Office of Research



May

Contacting Gift Card Recipients



February

Email Recruitment Professors
Reaching out to Students via Email



April

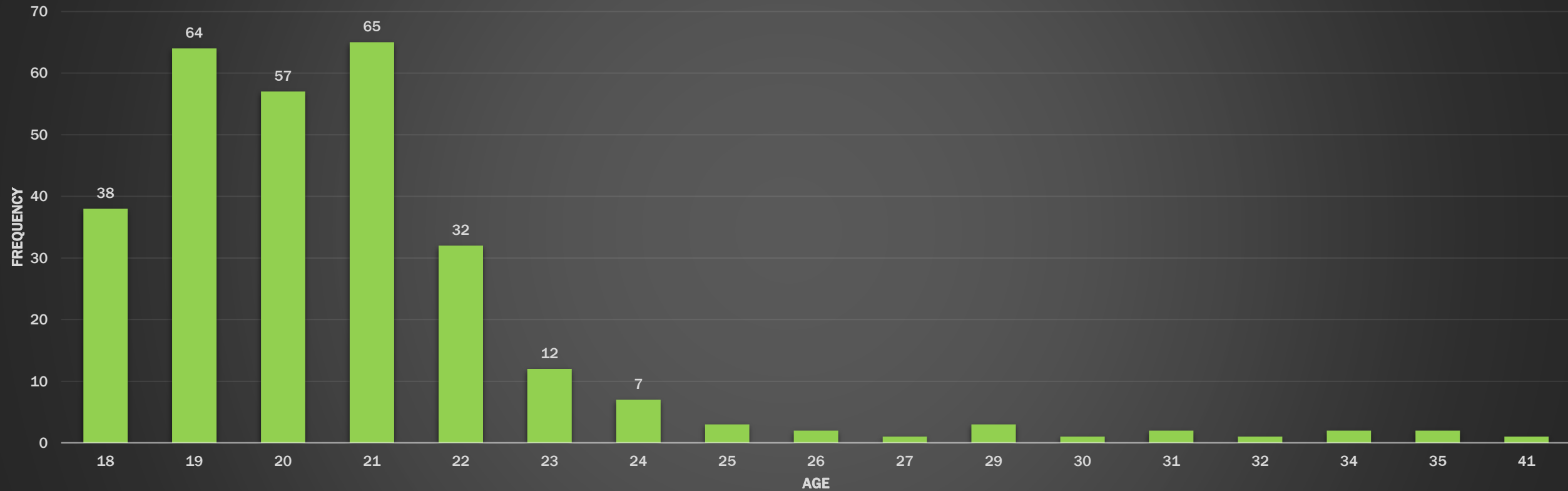
Class Visits
Email list from Office of Research



PARTICIPANTS' DEMOGRAPHICS



Age of Participants

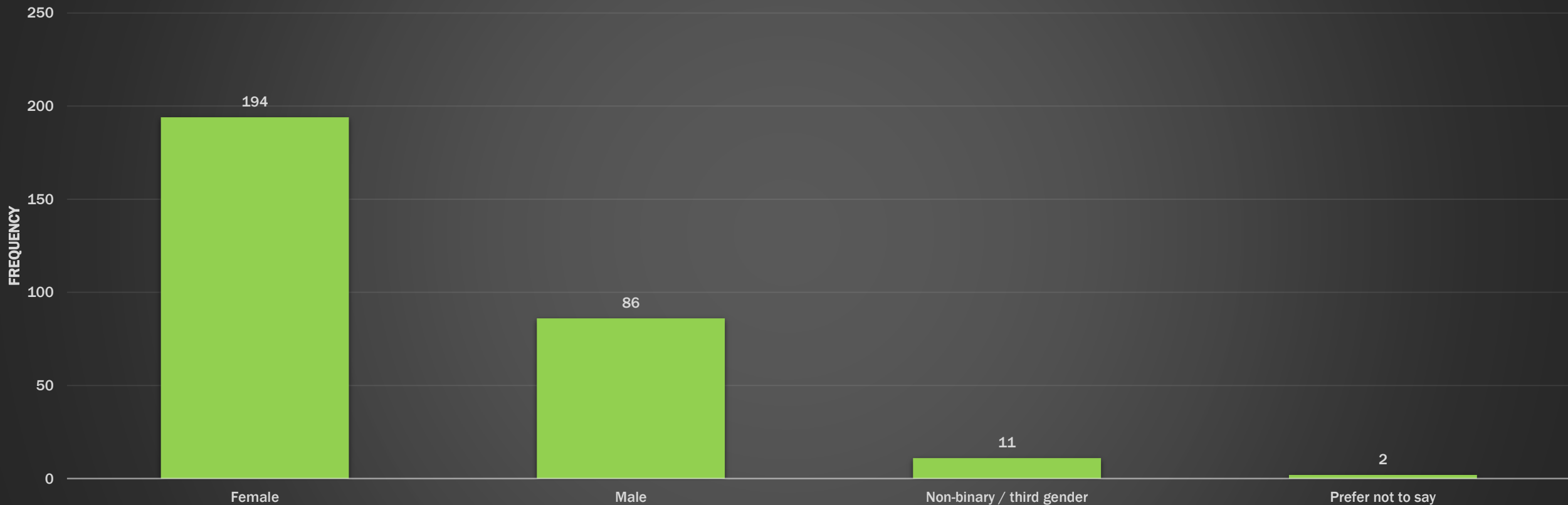


20.8 Years is the Average Age of Participants.

18 Years Minimum, **41** Years Maximum.

Data is skewed toward **younger undergraduates**.

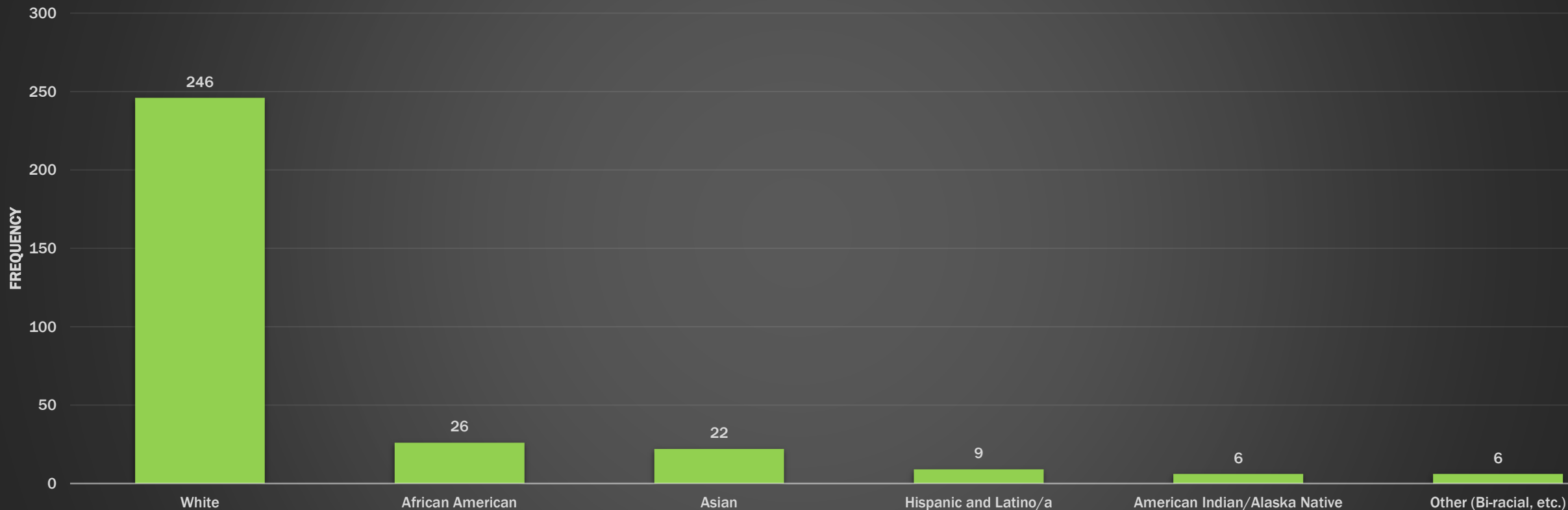
What is Your Gender Identity?



194 Females, **86** Males, **11** Non-binary, **2** Prefer Not to Say.

Data is skewed toward **Females**.

Ethnicity

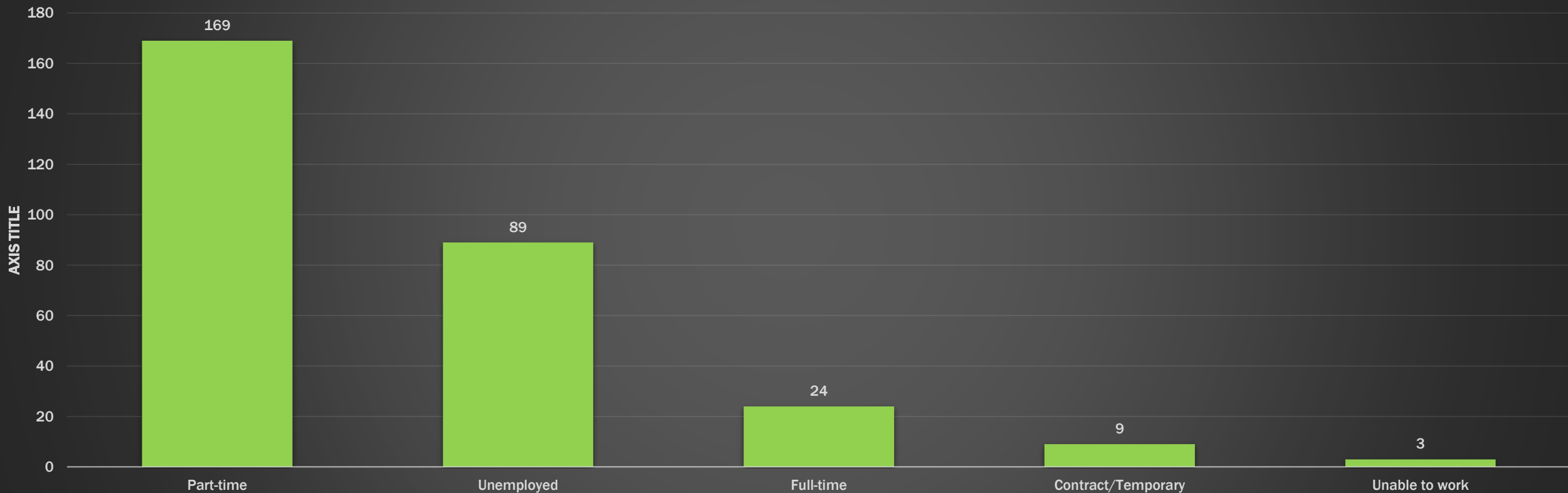


315 Students Answered this Question.

Students Could Select **More than One** Ethnicity.

Data is Skewed Toward WMU's **White** Undergraduates.

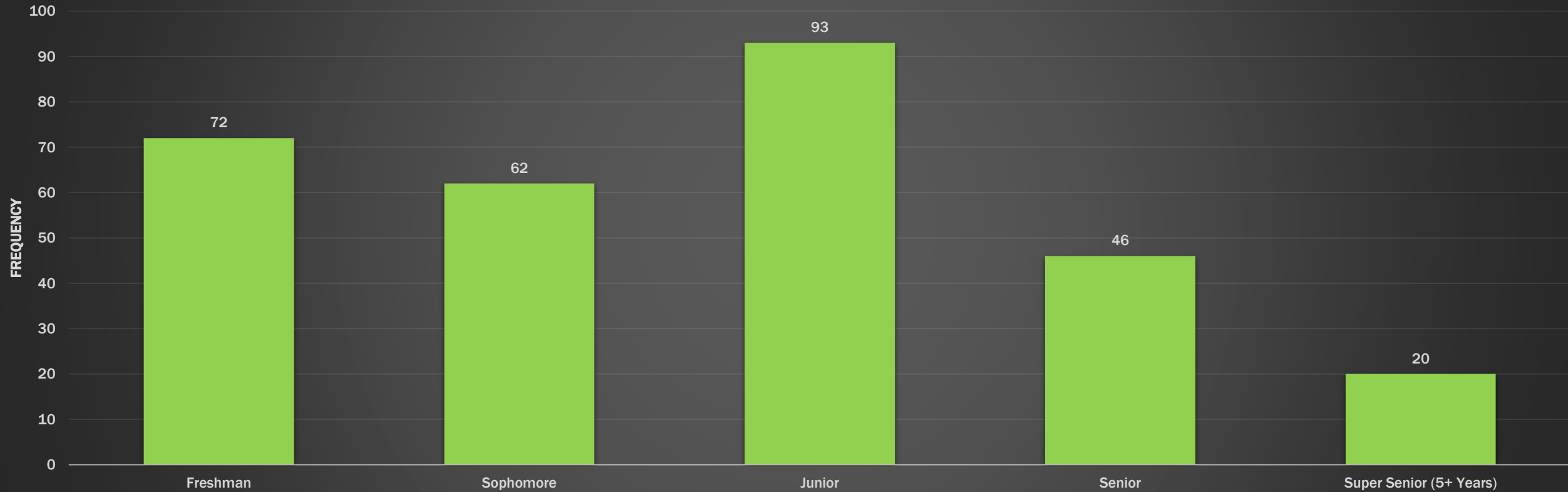
What is Your Employment Status?



Part-time Employment was highest among participants.

Understand **types of occupations** in the future.

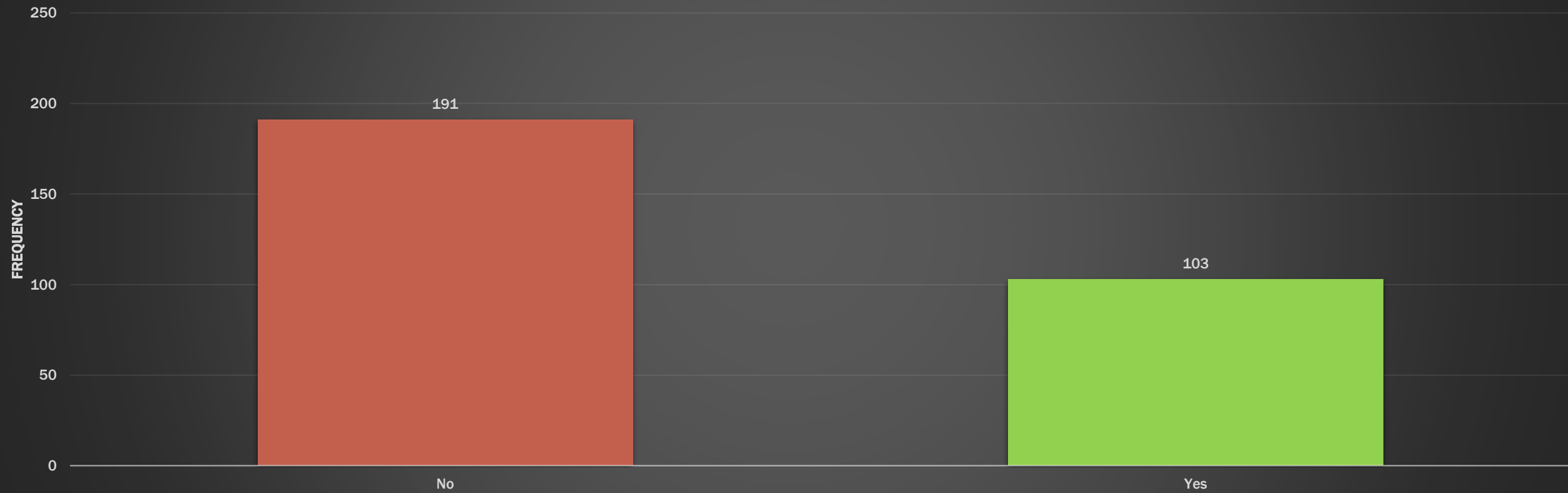
Student Year



Juniors are the largest group in our sample.

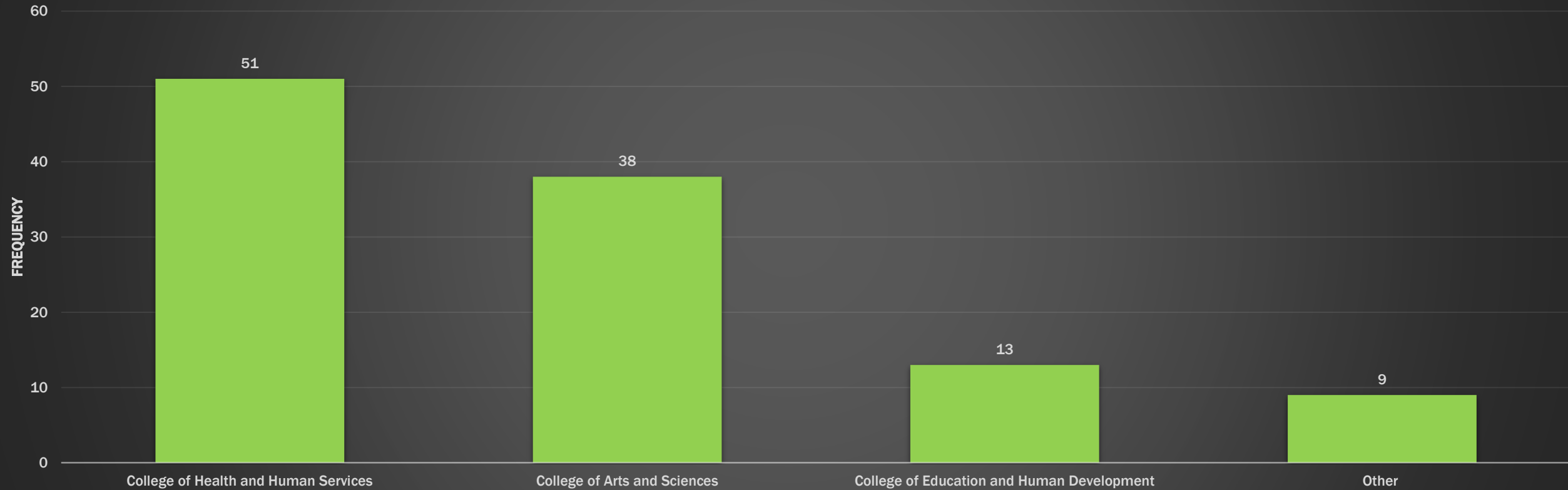
Least skewed statistic among **demographics**.

Are You Interested and/or Seeking a Health Related Major and/or Minor?



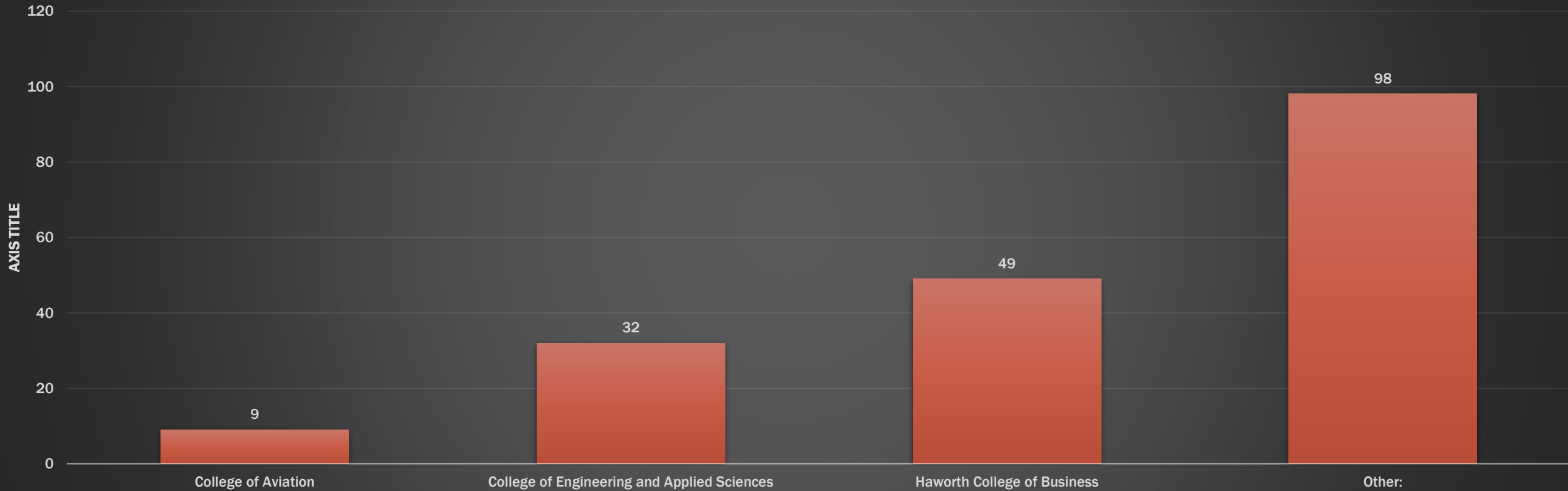
Participants' degrees **varied greatly.**

Which College Does Your Health-Related Degree Fall Under?



**Participants' degrees were mainly located in the
College of Health and Human Services.**

Which College Does Your Non Health-Related Degree Fall Under?



The College of Arts and Sciences was the largest group represented (n=92).

A SNAPSHOT OF OUR SAMPLE



66.2%

20.8 Years

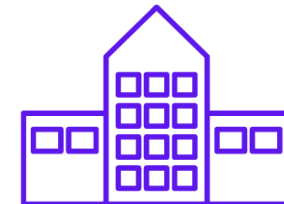


64.7% White

31.7% Juniors



57.5% employed part time

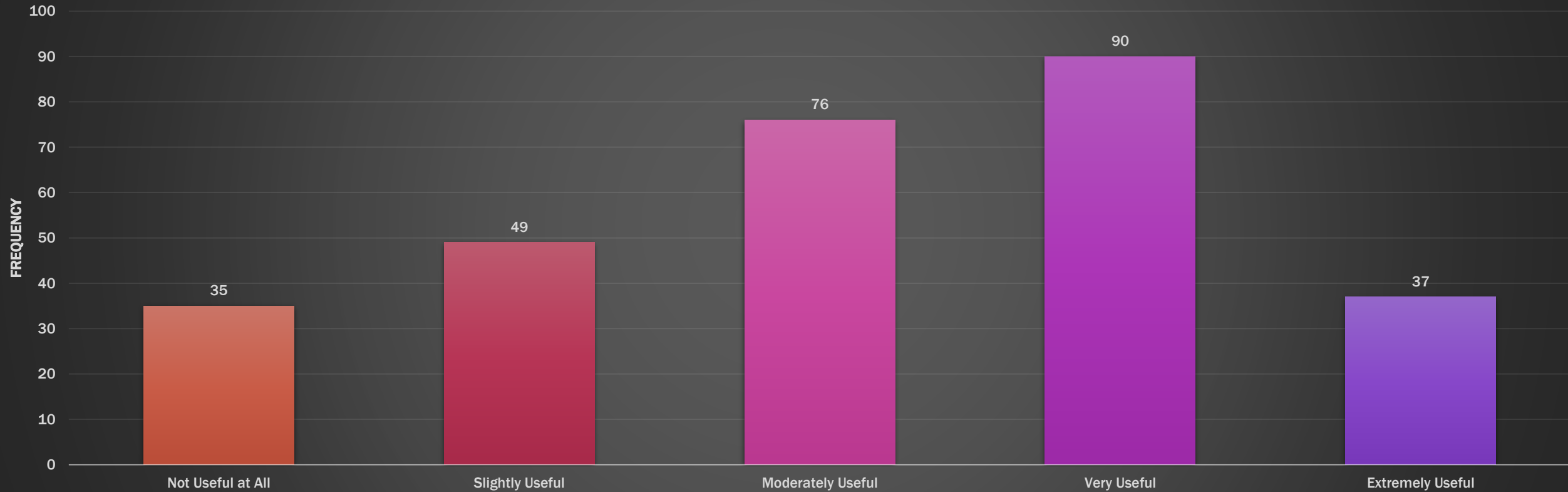


31.2% College Arts & Sciences

HOW STUDENTS WANT INFO



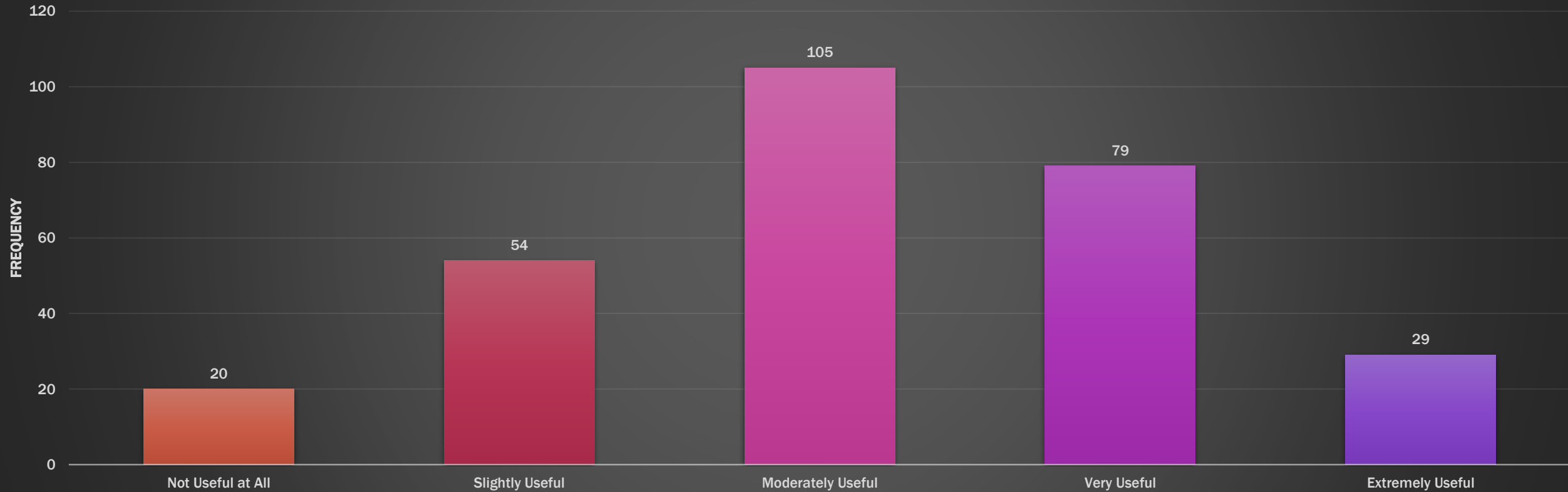
In-Person Events



In-Person Events were viewed as most useful.

Desire to be back in-person **confounding variable**.

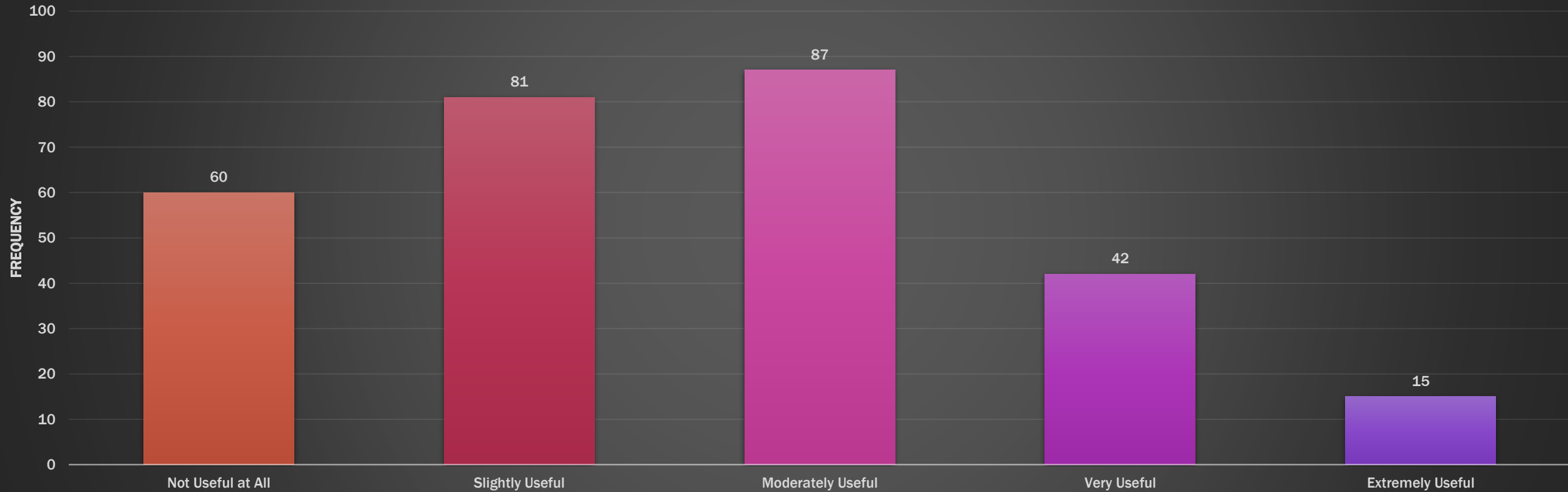
Digital Materials (e.g., e-book, online eLearning Module)



Digital Materials came in second.

Students want **adaptable** learning materials.

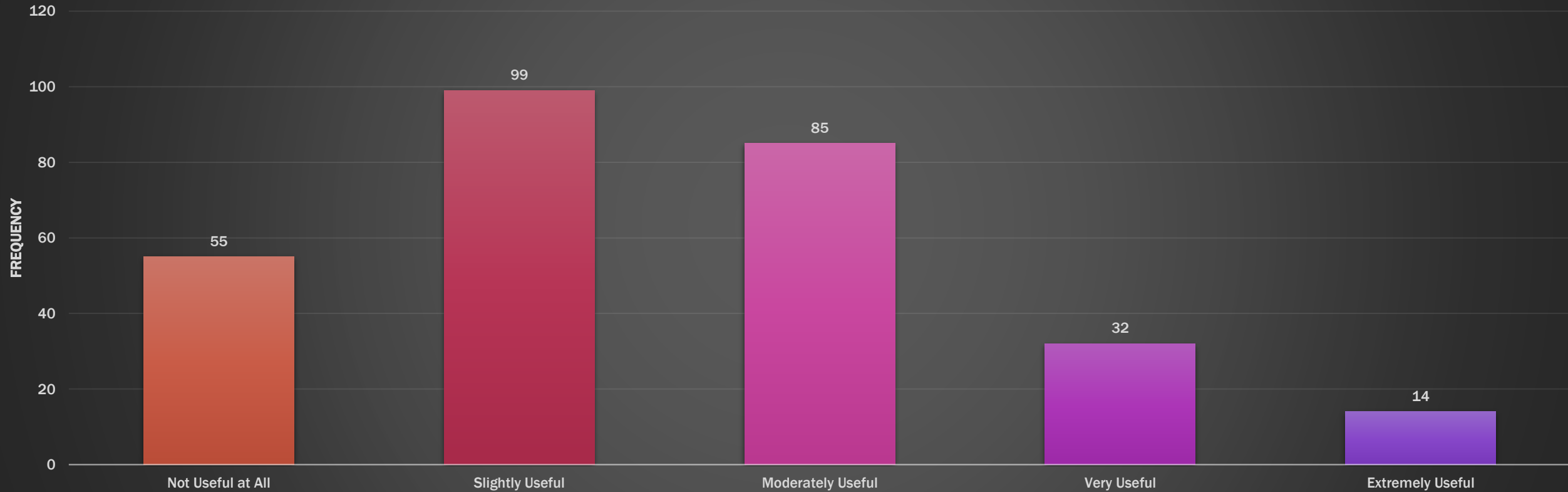
Virtual Events



Virtual Events came in close with Print Materials.

The pandemic and **attitudes toward online learning**.

Print Materials (e.g., flyers, brochures, booklets)



Print Materials came in last.

Most students are fine without **tangible resources**.

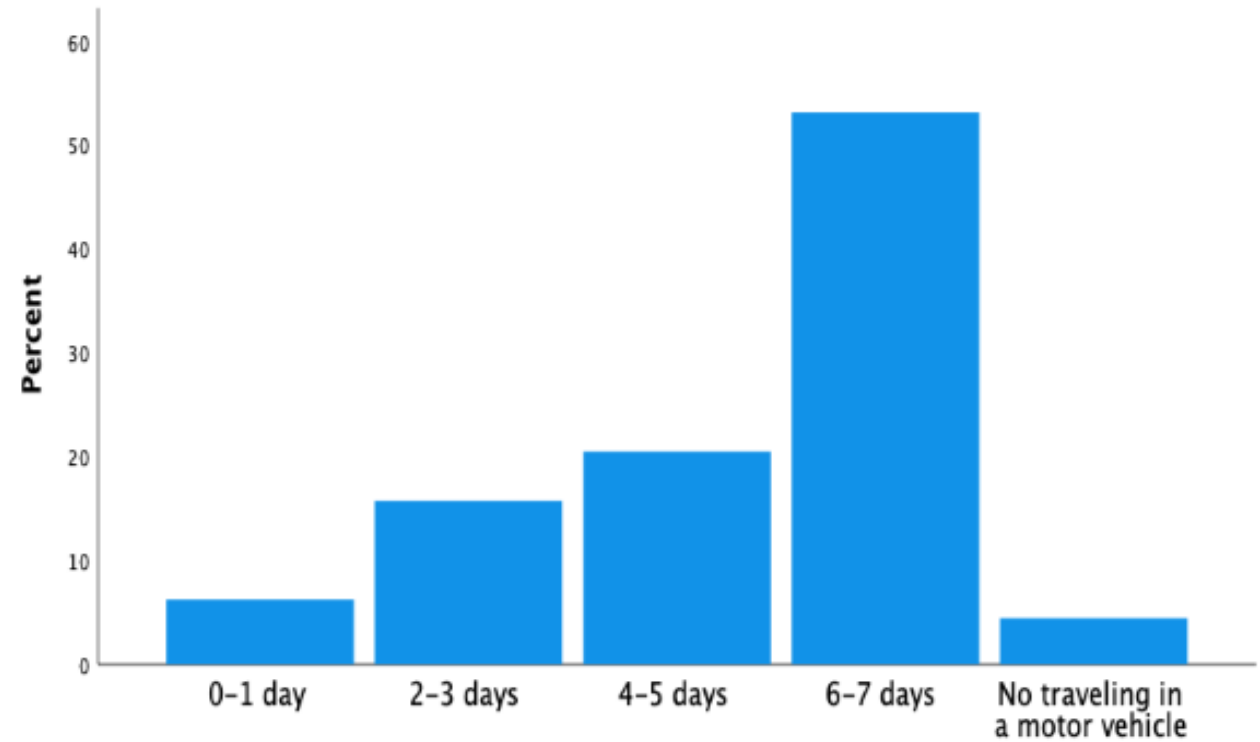
A pair of orange and blue athletic shoes is centered in the lower half of the image. The shoes have a mesh-like texture and blue laces. The background is a solid blue color with a subtle gradient.

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE RESULTS

During the last 7 days, on how many days did you travel in a motor vehicle like a train, bus, car, or tram?

	N	%
0-1 day	21	5.5%
2-3 days	53	13.9%
4-5 days	69	18.2%
6-7 days	179	47.1%
No traveling in a motor vehicle	15	3.9%
Missing System	43	11.3%

During the last 7 days, on how many days did you travel in a motor vehicle like a train, bus, car, or tram?



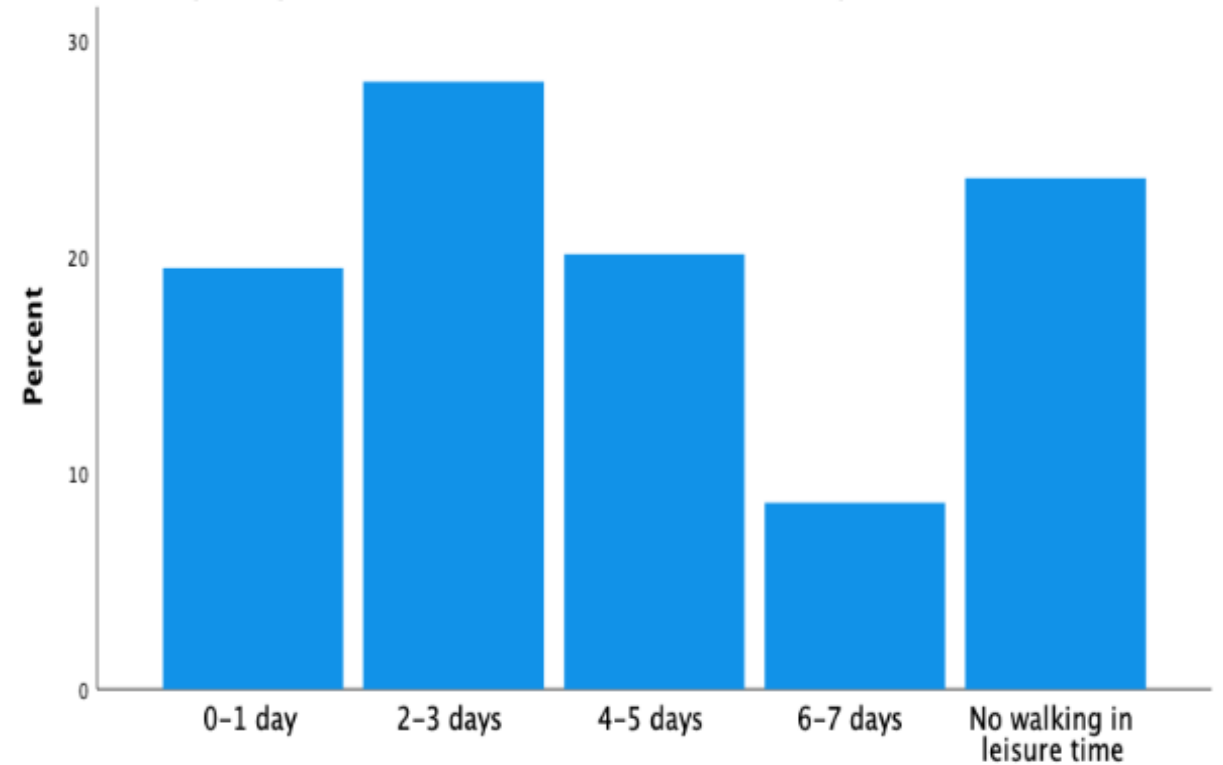
47.1% of participants use a motor vehicle for transportation 6-7 days in a week (**N=179**).

A potential variable in **increased** sedentary behavior.

Not counting any walking you have already mentioned, during the last 7 days, on how many days did you walk for at least 10 minutes at a time in your leisure time?

	N	%
0-1 day	61	16.1%
2-3 days	88	23.2%
4-5 days	63	16.6%
6-7 days	27	7.1%
No walking in leisure time	74	19.5%
Missing System	67	17.6%

Not counting any walking you have already mentioned, during the last 7 days, on how many days did you walk for at least 10 minutes at a time in your leisure time?



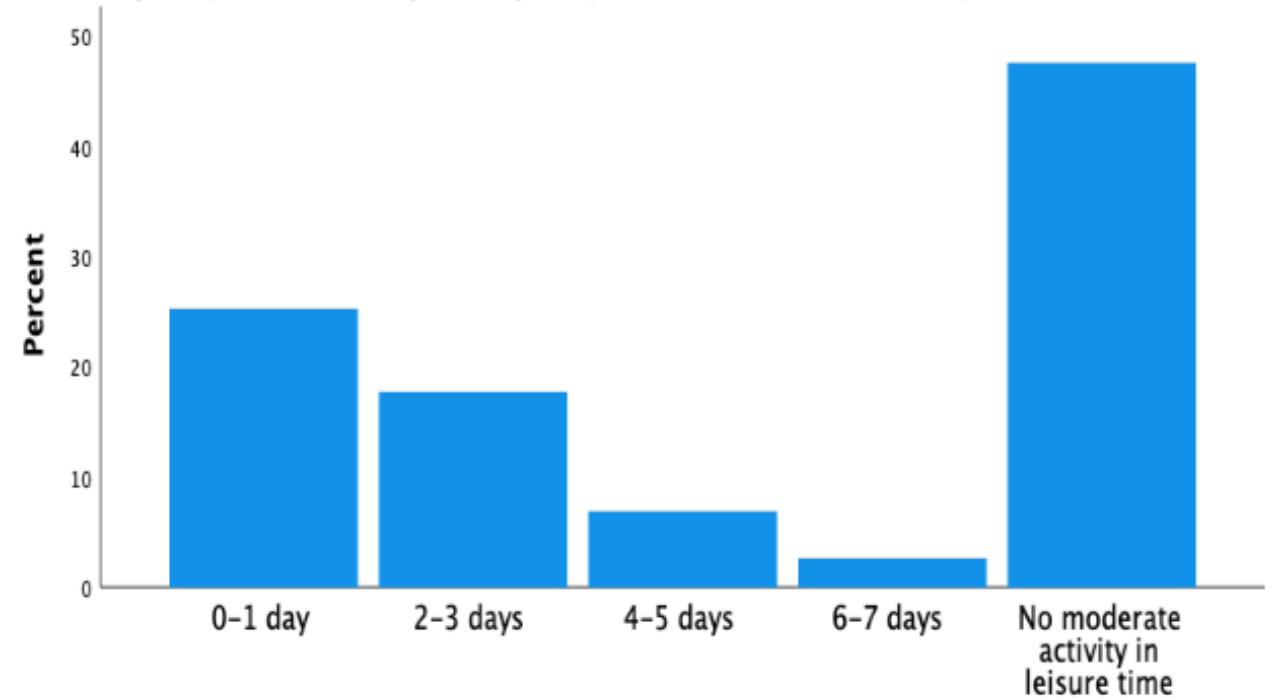
58.8% of participants shared they spend no time up to 3 days per week engaging in leisure time walking (**N=223**).

Over **half of our sample** does not engage in walking during their leisure time.

Again, think about only those physical activities that you did for at least 10 minutes at a time. During the last 7 days, how many days did you do moderate physical activities like bicycling at a regular pace, swimming at a regular pace, and doubles tennis in your leisure time?

Again, think about only those physical activities that you did for at least 10 minutes at a time. During the last 7 days, how many days did you do moderate physical activities like bicycling at a regular pace, swimming at a regular pace, and doubles tennis in your leisure time?

	N	%
0-1 day	77	20.3%
2-3 days	54	14.2%
4-5 days	21	5.5%
6-7 days	8	2.1%
No moderate activity in leisure time	145	38.2%
Missing System	75	19.7%



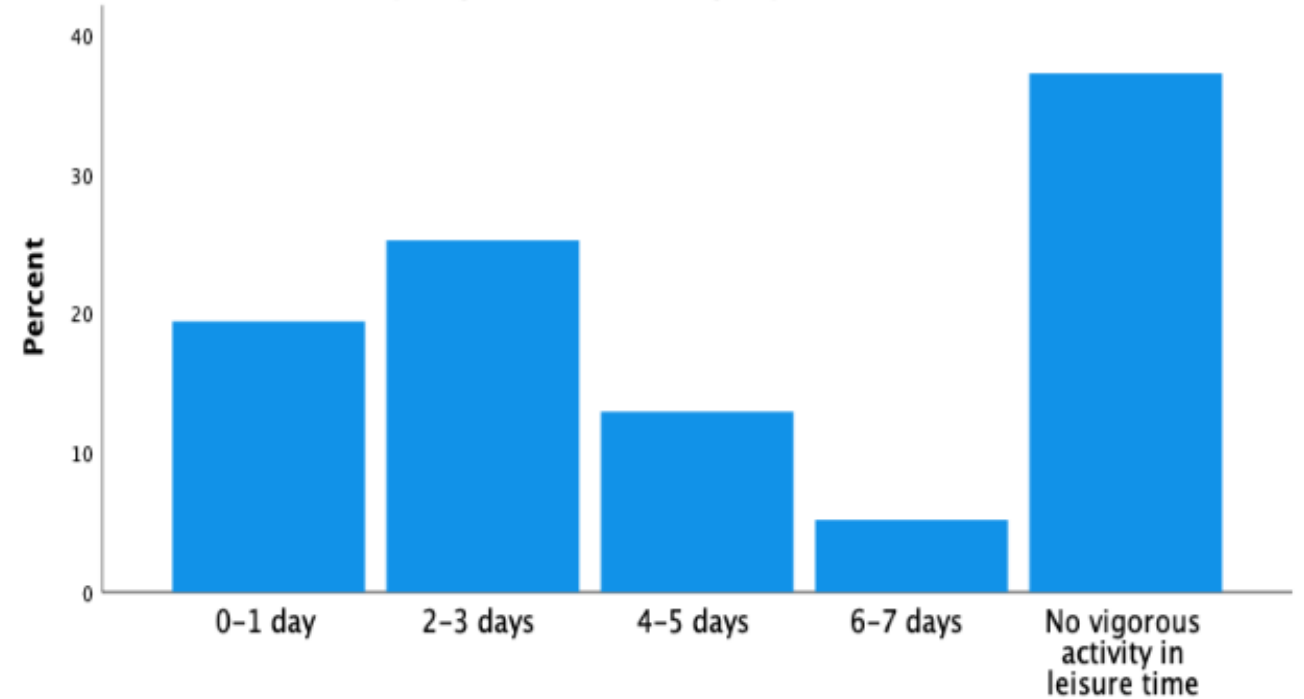
38.2% of participants answered that they engage in no moderate physical activity during a week span (**N=145**).

Undergraduates that engage **in little to no moderate activity** during leisure time could be at risk of not meeting general physical activity guidelines for moderate activity on a weekly basis (WHO, 2020, p. 32).

Think about only those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you do vigorous physical activities like aerobics, running, fast bicycling, or fast swimming in your leisure time?

	N	%
0-1 day	60	15.8%
2-3 days	78	20.5%
4-5 days	40	10.5%
6-7 days	16	4.2%
No vigorous activity in leisure time	115	30.3%
Missing System	71	18.7%

Think about only those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you do vigorous physical activities like aerobics, running, fast bicycling, or fast swimming in your leisure time?



30.3% of participants answered that they engage in no vigorous physical activity during a week span (**N=115**).

Undergraduates that engage **in little to no vigorous activity** during leisure time could be at risk of not meeting general physical activity guidelines for vigorous activity on a weekly basis (WHO, 2020, p. 32).

Time Spent Sitting in the Last 7 Days

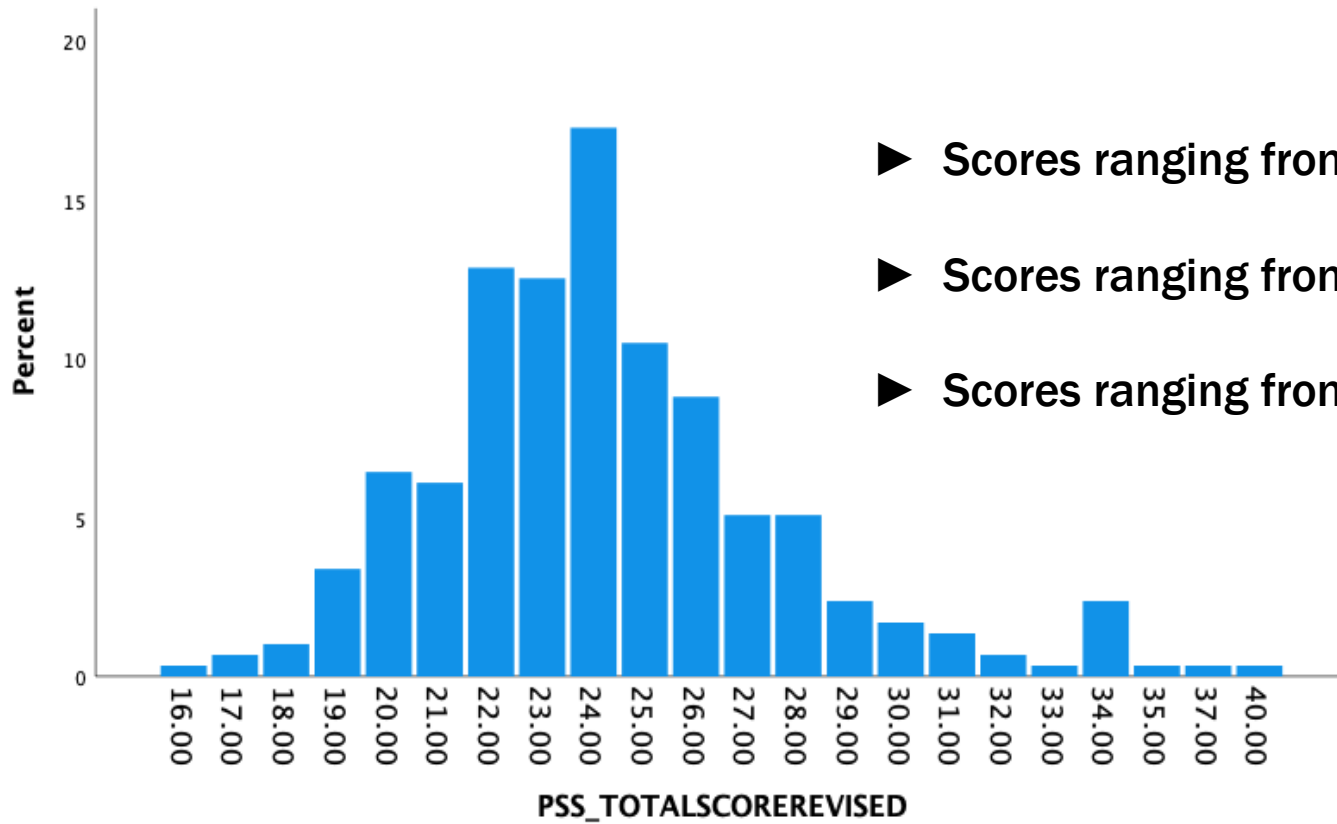
		Sitting on a Weekday – Hours	Sitting on a Weekend Day – Hours
N	Valid	283	271
	Missing	97	109
Mean		11.0707	9.5609
Std. Deviation		9.97987	7.99878

During a weekday, average leisure spent sitting was **11.07 hours** and **9.5 hours** on a weekend day.

One in four American adults spend more than eight hours a day sitting (Ussery et al., 2018).



PERCEIVED STRESS SCALE RESULTS



- ▶ Scores ranging from 0-13 would be considered low stress.
- ▶ Scores ranging from 14-26 would be considered moderate stress.
- ▶ Scores ranging from 27-40 would be considered high perceived stress.

The Perceived Stress Scale in our study indicates undergraduate students are **moderately stressed** (Mean=24.3, SD=3.53, N=295).

ACCORDING TO THE AMERICAN COLLEGE HEALTH ASSOCIATION ANNUAL SURVEY...

PSS Results Echo NCHA Fall 2021 Study

→ According to ACHA, **38.5%** of 33,2204 students surveyed across 41 institutions felt that **stress negatively impacted their academic performance** (American College Health Association, p. 6, 2022).

**INFOGRAPHIC
FOR
DISTRIBUTION**

LIMITATIONS OF STUDY

- Time limitations.
- Lack of diversity in sample gender & ethnicity.
- Self-reported data & challenging questionnaire.

FUTURE IMPLICATIONS

- Examine relationship between sedentary behavior and stress.**
- Using IPAQ to make tailored content that aligns with health-related information preferences (Repetition).**
- Using content to create training modules (Integration).**

CONCLUSIONS

- Learning five key insights from the IPAQ indicating the undergraduate sample is at increased risk of elevated sedentary behavior.
- Using PSS, we learned our sample is moderately stressed, echoing NCHA-ACHA Fall 2021 study.
- Undergraduates prefer receiving health-related information in this order: in-person events, digital materials, virtual events, print materials.

THANK YOU...

Lee Honors College

→ Research & Creative Scholarship

Lee Honors College Staff

→ Professor Harvey, Anthony Helms, Jennifer Townsend, Jennifer Clements, Dean Lopez.

Committee Members

→ Dr. Robert Bensley & Dr. Horneffer-Ginter

Faculty Advisor

Dr. Michele L. McGrady

QUESTIONS?

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