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## Sexual Harassment of Biology and Biomedical Sciences Undergraduates: A Study on the effects of Larry Nassar and William Strampel

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**Sexual Harassment of Biology and Biomedical Sciences Undergraduates: A  
Study on the Effects of Larry Nassar and William Strampel**

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### Abstract

Sexual harassment amongst undergraduate women of science is a prominent issue, gaining much media attention. The goal of this study is to determine if, and how, major sexual harassment cases impact women pursuing science-related careers, and what the sexual harassment climate is like for these individuals. The study will examine prevalence of harassment, common types of sexual misconduct, perpetrators, and severity through an anonymous survey. Additionally, this study will look into the effects of the Nassar and Strampel cases regarding desire to report harassment, and students' fear of experiencing harassment in their future educations and careers. It is hypothesized that women with a higher prevalence and severity of sexual harassment will have a greater desire to report harassment, and be more fearful of experiencing sexual misconduct. The results concluded that out of 175 women who were surveyed, 71 had experienced some form of sexual harassment. Of the women who were sexually harassed, most had experienced verbal harassment. The most common perpetrator was a stranger, with harassment occurring between two and six times. The only statistically relevant difference within the Nassar and Strampel questions was that women who experienced sexual harassment were less likely to report harassment after learning about these cases. This data provides information that sexual harassment is a major issue amongst undergraduate women of science, and that major sexual harassment cases may cause women to be less-likely to report. Going forward, the question of how to prevent sexual harassment, and how to encourage women to report harassment, arises.

### **Introduction**

In January 2018, Larry Nassar, former physician for Michigan State University and USA gymnastics was convicted of sexually abusing 265 women and girls over the course of two decades (Levenson, 2018). Shortly after, dean of Michigan State University's College of Osteopathic Medicine, William Strampel, was charged with fourth-degree criminal sexual conduct for inappropriately touching a female student and keeping nude photos of female students on his work computer (Mencarini & Haxel, 2018). These cases, along with the #metoo movement have increased sexual misconduct awareness, especially amongst women pursuing degrees in science-related fields.

With major sexual misconduct scandals, question has arisen regarding the effects these high-profile individuals may have on women viewing the cases. Does media awareness encourage women to report, and make them more fearful of experiencing sexual harassment in their lives, as hypothesized? Or, perhaps these cases cause the exact opposite to occur. At this point, this is unknown. However, there is evidence that sexual harassment is a major issue amongst female professionals in the sciences, and amongst undergraduate students, as well.

### Sexual Harassment in Medicine

In 2016, Jagsi, Griffith, Jones, Perualswami, Ubel, & Stewart conducted a postal survey that was sent to recipients of the prestigious KO8 and K23 Career Development Awards in academic medicine. The survey was sent to a group of faculty who received the award between 2006 and 2009. The survey asked these physicians about their experiences with gender bias, gender advantage, and sexual harassment in a large questionnaire. Additionally, those who reported sexual harassment were prompted to answer another series of questions. These included

reporting their feelings of confidence, perspectives on career advancement, and severity of harassment. The severity levels were divided up into five categories: general sexist remarks or sexist behavior, unwarranted sexual advances, bribery to participate in sexual activities, threats to engage in sexual activities, and coercive sexual advancements. These levels were organized from one (least severe) to five (most severe) in the order previously described.

Of the physicians surveyed, 30% of women experienced sexual harassment during their careers, whereas four-percent of men reported. Of the women who reported harassment, 92% claimed that they experienced sexist remarks, 41% reported nonconsensual sexual advances, nine-percent reported coercive advances, and six-percent reported being subtly bribed for sexual favors. In other words, the surveyed women experienced many different kinds of sexual harassment; however, the most common form were the level-one sexist remarks.

In addition, of the women who reported harassment, 59% admitted to having poor confidence levels in their professional careers. Additionally, 47% of these women felt as if their experiences negatively impacted their career advancement. To describe this further, the study highlighted a drop in confidence and feelings of negativity for women who were sexually harassed in their careers, regardless of visible success and the prestigious KO8 and K23 awards they were given.

This study also noted the difference between sexual harassment rates of women and men for successful medical professionals. When comparing the four-percent of men to the 30% of women, it's evident that, according to the data obtained, women face sexual harassment far more frequently than their male counterparts. However, it is noteworthy that these successful male physicians also reported harassment in their medical careers (Jagsi et al., 2016).

A different study conducted by Fnais, Soobiah, Chen, Lillie, Perrier, Tashkhandi, & Tricco, in 2014 focused on medical trainees and their experiences with sexual harassment. This research conducted a meta-analysis of 51 different studies done on female medical trainees. To conduct this study, researchers searched the databases MEDLINE and EMBASE for the prevalence, visible risk factors, and common sources of sexual harassment and gender-based discrimination in various studies. Additionally, researchers contacted experts involved in the studies to gain more information before compiling information from the studies.

The analysis found that 59% of respondents claimed to have been sexually harassed, and the most common form of harassment was of the verbal nature. 63% of reports were linked to a form of verbal harassment (Fnais et al., 2014).

A study conducted by Broad, Matheson, Verrall, Taylor, Zahra, Alldridge, and Feder in 2018 specifically surveyed medical students in the United Kingdom about their experiences with discriminatory practices and harassment. 63% of respondents claimed to have witnessed or experienced a form of discrimination or harassment during their time at medical school. Stereotyping was the most common form, with 43% claiming to have experienced or witnessed this.

In regards to harassment, there were quite a few reports of inappropriate joking or invasion of space by other individuals. Something that this study highlighted though, was the greater reports by minority individuals, which included anyone who was not a fully-abled, straight, white male. Ethnic and religious students experienced less provisions, whereas students who identified as lesbian, bisexual, gay, transgender, or queer experienced greater joking, and disabled students experienced larger amounts of stereotyping. This data is important because it

shows the effect that discrimination and harassment have on minority individuals during medical school, which is shown to be much higher than for fully-abled, straight, white males.

This study also looked into the effect of harassment on female students going through clinical rotations. These students were found to have three-percent higher chances of experiencing or witnessing an event of discriminatory significance or harassment (including sexual harassment).

Another study conducted by Spector, Zhou, and Che, in 2014 involved a meta-analysis of studies regarding sexual harassment and abuse of practicing nurses. Since nurses are an integral part of the medical faculty, their experiences and stories play a huge role in medical workplace harassment. The study conducted a review of the databases CINAHL, Medline, and PsycInfo, and organized the data regarding sexual and physical misconduct into an organized review. This data included 316 articles, and data from over 150,000 practicing nurses.

The researchers found that 36% of nurses experienced some form of physical violence, and 67% experienced non-physical violence. Thirty-nine percent were bullied, and 25% were sexually harassed. This data was obtained from regions around the world, and found that the Anglo region, primarily the United States, experienced the worst percentage of sexual harassment and violence.

This data is significant because the research opens up new questions regarding the reason for the United States' higher percentages of sexual harassment and violence of nurses compared to other places in the world. This yields discussion regarding race, cultural influences, societal influences, and technological influences from the United States that may be a causing factor of this large jump (Spector, Zhou, & Zhe, 2014).

Sexual Harassment in Medicine: Studies from Before 2010

A study worth noting is one that occurred in 1993 in the United States. Although this study was conducted over twenty years ago, it provided a successful base for many current studies of sexual harassment in medicine, and studies published during the twenty-first century.

This research project surveyed men and women in their medical residencies, and asked if they had had experienced sexual harassment during medical school or their medical residencies. The survey also asked for the frequency and type of harassment, its effect on them, and if they chose to report the incident. For those that experienced harassment, the survey also asked for the reasoning why they chose to report the incident or not.

The survey was returned with 33 responses from women, and 49 responses from men. Of these, a huge 73% of women reported sexual harassment, and 11% of men. This is significant because the data shows the severity of sexual harassment in medicine in the nineties. Comparing these numbers with recent studies, it appears as if sexual harassment rates have gone down exponentially. This may be due to the greater number of women pursuing medical degrees, or an increase in sexual harassment awareness amongst members of society in general. However, in both cases, sexual harassment of women is considerably higher than for men, a noteworthy occurrence.

In addition, the study found that of the women who reported harassment, most claimed that a man in a higher hierarchical position committed the act, such as a doctor, professor, or individual with a higher status. Women were also more likely to report physical harassment, involving touching and groping. Seventy-nine percent of women who were sexually harassed claimed that the experience created a hostile work environment for them, and out of the men who



reported harassment, only a small fraction, five-percent, felt as though the interaction created a hostile environment.

Another conclusion that the study made involved reporting of the event. Only two-percent of women claimed to have reported the event, where no men reported at all. On average, the men said the reason why they didn't report the harassment was because they handled the situation themselves. However, for women, they did not report because they felt as though they wouldn't be helped, or their report would be disregarded by higher-status individuals in the medical community. (Komaromi, Bindman, Haber, & Sande, 1993).

Looking to future studies in this decade, realizing the harsh stratification between men and women in medicine from the 1990s will guide many new ideas regarding sexual harassment and gender. Perhaps the coverage of sexual harassment in the media will encourage young men and women to report the actions, as more recently, perpetrators have received great punishment for their actions, including the harassment and abuse committed by Larry Nassar.

Another study conducted by Stratton, McLaughlin, Witte, Fosson, and Nora in 2005 focused more on sexual harassment and discrimination of individuals in their fourth-year of medical school. This study wanted to see if the measured amount of sexual harassment or discrimination made a difference in the specialty choice of the future-physicians.

The study found that 45% of women reported that sexual harassment or discrimination impacted their choice of specialty, whereas 16% of men reported similarly. Something striking that the study found, though, was that the women who experienced the most traumatic discriminatory experiences were specializing in general surgery. Historically speaking, general surgery is a more male-dominated field; therefore, the desire for these women to pursue a career in surgery with discriminatory experiences is fascinating, yet hopeful.

Another interesting find from the research was that men specializing in obstetrics and gynecology said, more than any other field, that sexual harassment and discrimination experiences helped make their decision. These numbers were even higher for men in this field than women in any other field (Stratton, McLaughlin, Witte, Fosson, & Nora, 2005). Perhaps this choice was made to avoid harassment from males, as the OB/GYN specialty consists mostly of female physicians. According to data from the AAMC in 2015, the American Association of Medical Colleges, 59% of surgeons are men, and 85% of obstetricians and gynecologists are women (Vassar, 2015).

This study is significant because this concept can be applied to many different areas of medicine, not only future physicians. Does the career choice, for example, of physician assistant over physician, have any correlation with sexual harassment and discrimination experiences? Or, perhaps, does pursuing a degree in nursing versus research have a correlation to sexual harassment? These are all questions for future studies regarding women in the demanding field of medicine and Science Technology Engineering and Math (STEM) fields.

### Sexual Harassment in Universities

Looking more into sexual harassment of individuals attending universities, a study done by Campbell et al., looked into the sexual harassment climate at a large public university. For this study, an online survey was conducted and completed by 3,977 full-time undergraduate and graduate students. Of the respondents, one-eighth admitted to experiencing at least one unwanted sexual incident. Additionally, of those who reported an incident, the most common perpetrators were acquaintances, peers, and colleagues (Campbell et al., 2017).

Another study took a generalized look into sexual harassment of undergraduate students. 426 students at a large public university in the Northeastern United States were asked to take a questionnaire. Of this number, 278 were women and 148 were men. Of the participants, the vast majority were heterosexual, Caucasian, and single and young, with the mean age slightly over twenty-years-old. The researchers found that men were two-times as likely to be sexually harassing, and three-times as likely to be sexually coercive as their female counterparts (Menard, Hall, Ghebrial, & Martin, 2003).

### Sexual Harassment in America

Currently, much is changing in the world of sexual harassment awareness. With large, public trials, and the recently famous #metoo movement, sexual harassment is becoming more visible in the public eye. After information regarding Harvey Weinstein's sexual allegations emerged from the media in 2015, ABC News and the Washington Post teamed up to learn more about the sexual harassment climate in the workplace (Langer, 2017). The greatest limitation to this study was that it polled women electronically through the Washington Post and ABC News webpages, and therefore was not randomized; however, the data is still relevant to the current sexual harassment climate.

Of the women who responded to the poll, 54% of women admitted to being sexually harassed at least one time at their workplace. Of these women, 23% claimed that the perpetrator had influence over their work environment, as a boss or supervisor.

For the women who reported unwanted workplace sexual advances, they were prompted to answer a question regarding the emotions they felt after the abuse. The greatest response rate

was angry (83%) followed by ashamed (69%) then intimidated (64%) and ending with humiliated (52%). These answers were self-reported.

Additionally, another question asked by the poll included perpetrator punishment. Of the women who personally experienced workplace harassment, a massive 95% believed that male harassers go unpunished. This is an alarming number, as many women claim that perpetrators are not reprimanded for their actions (Langer, 2017).

Throughout these studies, it becomes clear that sexual misconduct is a huge problem, especially for women. Women are frequently victims of sexual harassment as both undergraduates and science professionals. However, there is a gap in knowledge regarding how major sexual harassment cases in the sciences may impact students pursuing careers in these fields. Additionally, it is unknown what the sexual harassment climate is like for this demographic of undergraduate women.

## **Methods**

### Data Collection Methods

An anonymous survey was generated using Survey Monkey, an online survey generator, and questions contained multiple-choice, multiple-selection, scaled, and free response (Appendix A). The survey was sent by email to a convenience sample of all undergraduate Biology, Biomedical Sciences, and Biology: Secondary Education majors at Western Michigan University, consisting of a greeting message and a survey link (Appendix B). Only women were eligible to take the survey. After each respondent completed the survey, they were eligible to enter a drawing, completely separate from their survey answers, to win a \$25 Visa gift card.

An informed consent document appeared at the beginning of the survey, after the students entered the link to begin the questionnaire. Students had to give consent before continuing with

the survey by clicking on a box that says “I agree to participate.” This informed consent document can be found at the beginning of Appendix A, and is modeled after the “Sample anonymous online survey,” found on Western Michigan University’s IRB website.

The survey consisted of demographic questions, and questions regarding each respondent’s experience with sexual harassment during college. These included type of harassment, perpetrators, and frequency. After this section of the survey, a paragraph describing the actions of Larry Nassar and William Strampel was written for the participants to read. After the paragraph, each respondent’s feelings towards reporting harassment, and fear of pursuing further education and careers in the sciences due to the Larry Nassar and William Strampel cases was asked on a one-to-five scale, with one being “Not at all,” and five being “Very much so.”

After two weeks of data collection, the survey was closed and data was analyzed. For this process, all invalid surveys were discarded from the data pool. These invalid surveys included incomplete surveys, ones in which the participant said they were not a female undergraduate, and ones where the participant marked “No,” when asked if they were willing to participate. The valid, complete surveys, were then taken for analysis.

#### Data Analysis Methods

Data was divided into five separate groups: all respondents, respondents who had not experienced sexual harassment, respondents who had experienced sexual harassment, and respondents who had been physically harassed more than once. Severity of sexual harassment was determined by presence of physical misconduct occurring two to over-six times. This included any kind of inappropriate poking, touching, grabbing or non-consensual sexual attempts or actions.

The data regarding the Larry Nassar and William Strampel questions was put through statistical analysis relevant to each group, consisting of calculating z-statistics to determine p-values. The percentages used to calculate the z-statistic were determined by how many women checked a number 3 to 5. If the p-value was underneath 0.05, the difference between percentages was considered significant. Women who had experienced sexual harassment were compared with women who had not for all three questions (desire to report, fear of experiencing sexual harassment in future education, and fear of experiencing sexual harassment in future career). Then, women who had experienced sexual harassment were compared with those who had experienced sexual harassment severely. For the purpose of calculating this statistic, only participants who chose an answer were statistically analyzed. Those who chose “unsure” were not included within the total number of participants for each group.

## **Results**

### All Respondents

There were 175 valid survey responses obtained. This was a 30% response rate out of 585 prospective participants. In regards to demographics, the largest subgroup of responses came from senior undergraduates studying Biomedical Sciences. Most participants were white, and most common degree plan was to attend medical school.

Of all participants, 41% had experienced some form of sexual misconduct.

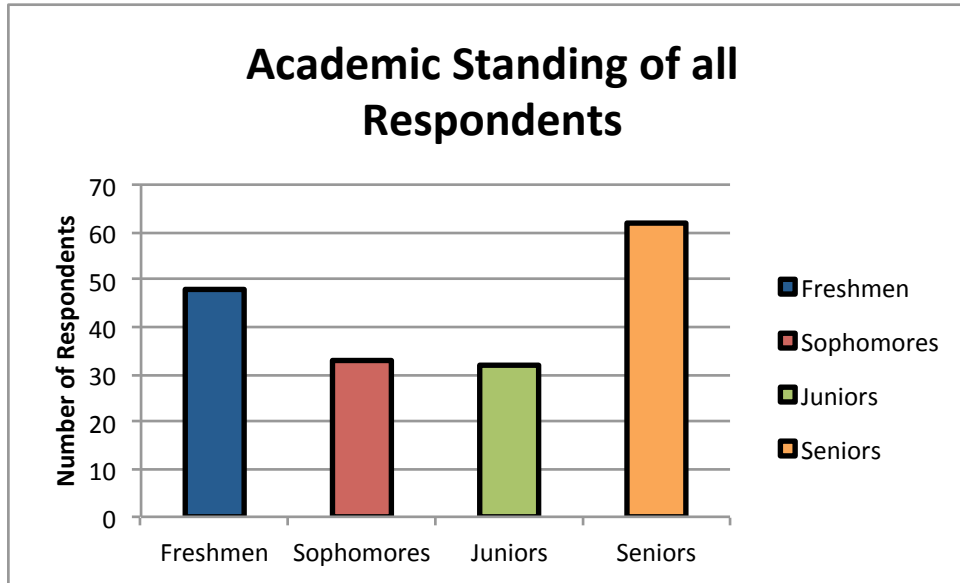


Figure 1. Academic Standing of all Respondents

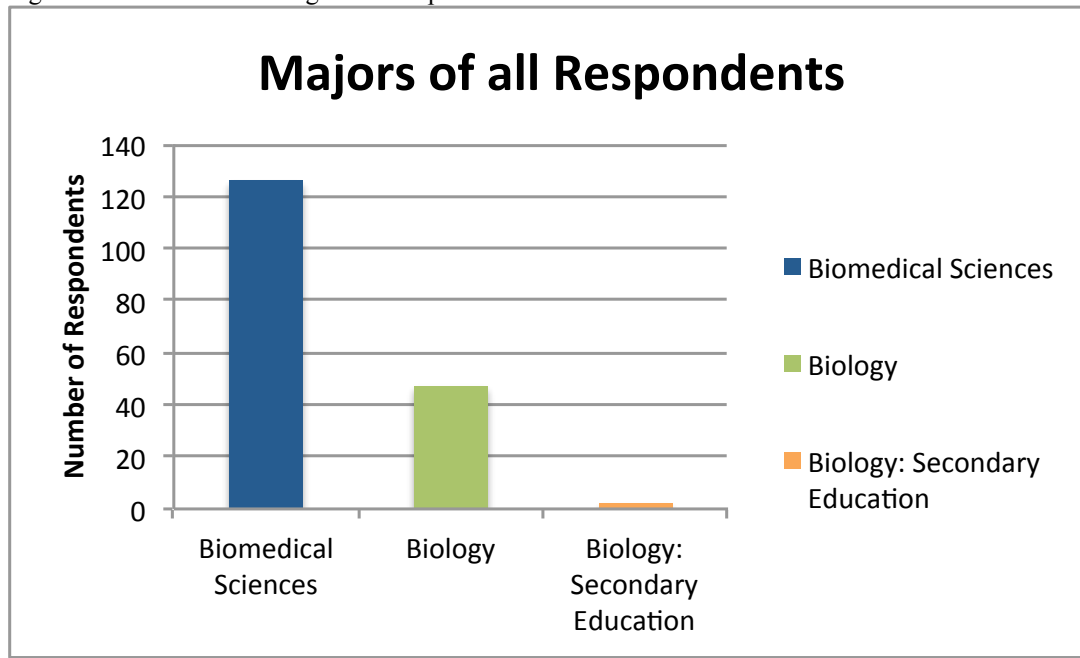


Figure 2. Major Distribution amongst all Respondents

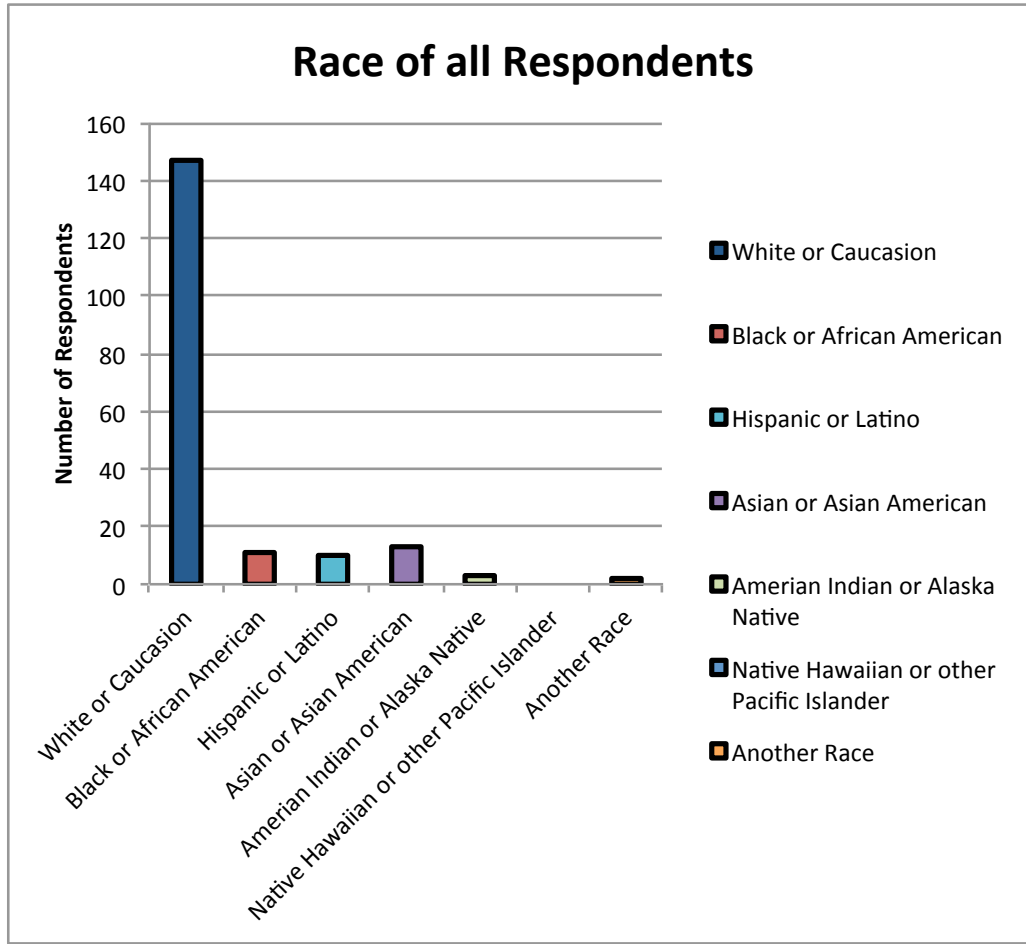


Figure 3. Race Distribution amongst all Respondents



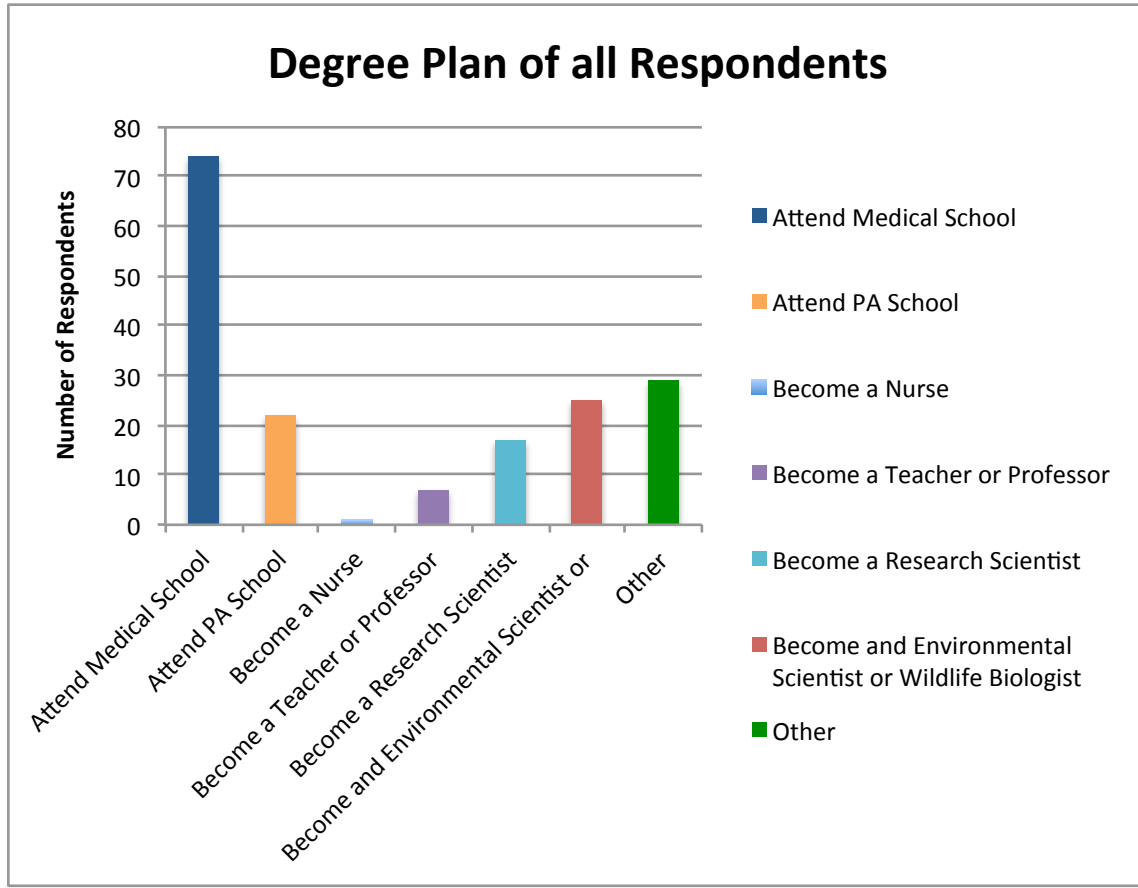


Figure 4. Degree Plan of all Respondents

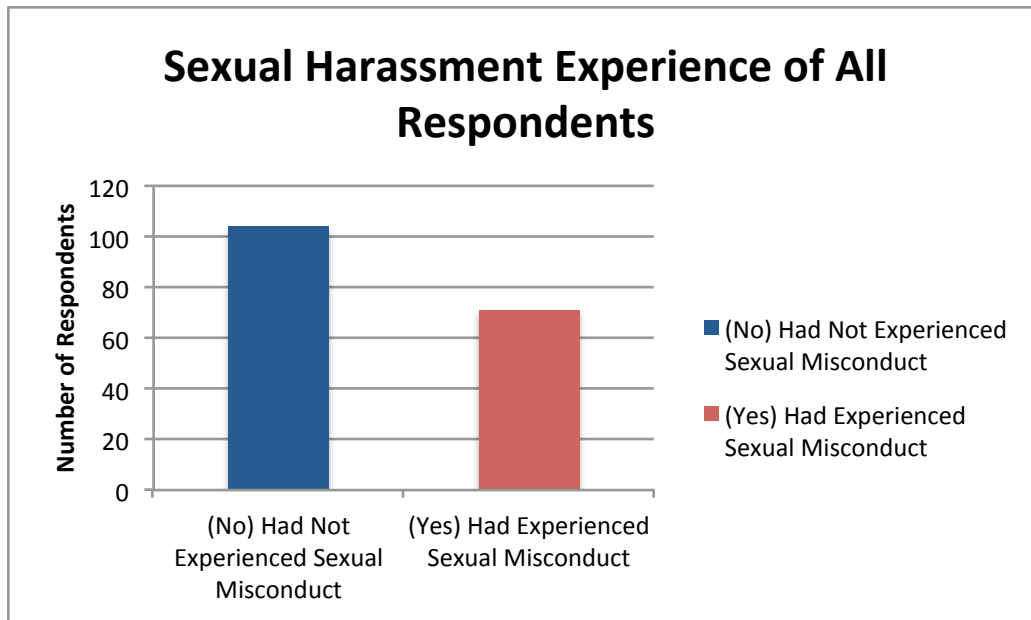


Figure 5. Sexual Harassment Experience of All Respondents. 41% of participants experienced some form of sexual harassment, or 75 women.

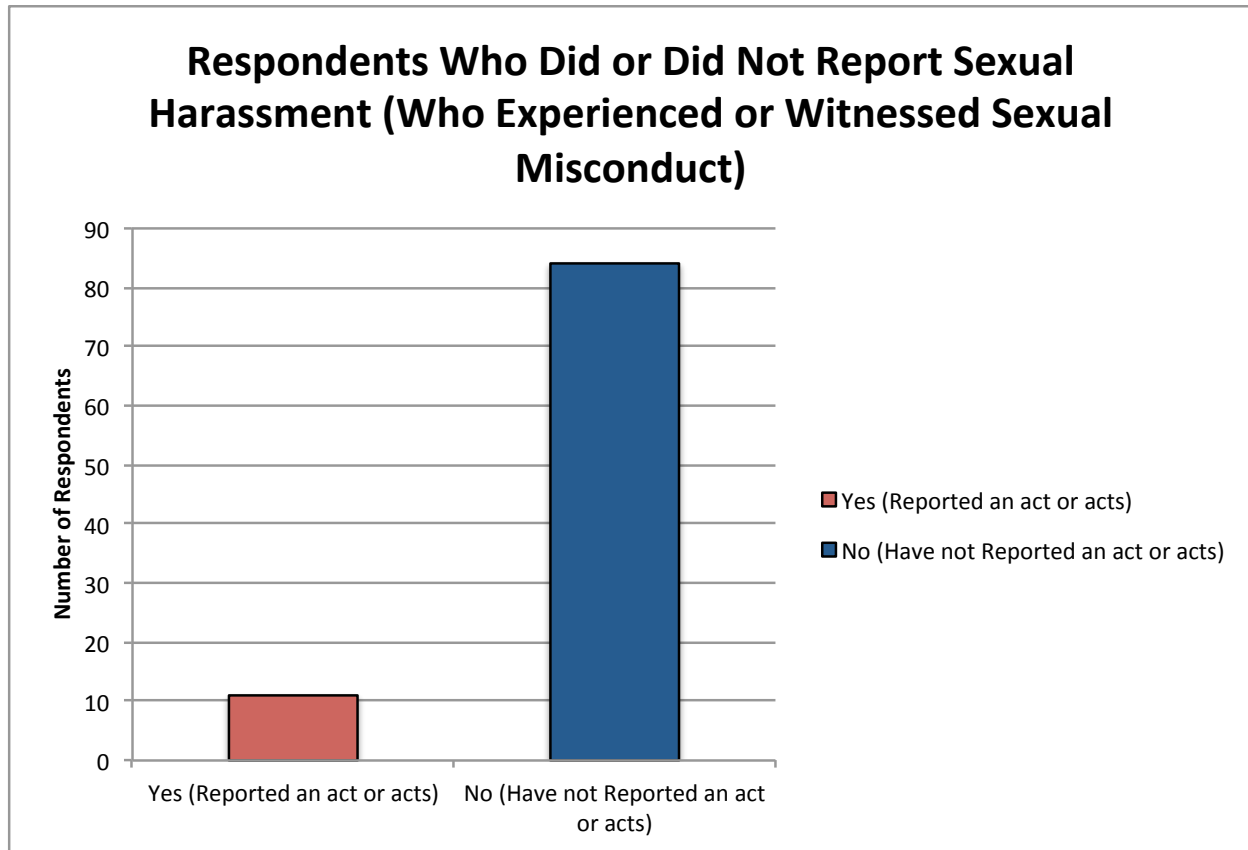


Figure 6. Respondents who experienced or witnessed sexual harassment, and if they Reported or Not. n=95

#### Respondents who had Experienced Sexual Harassment

Of 175 total respondents, 71 had experienced some form of sexual misconduct, or 41%. The most common type of harassment was catcalling, followed by any kind of poking touching or grabbing. Most of these women had experienced sexual harassment at college between 2 and 6 times. Additionally, the most common perpetrator of these acts was a stranger, followed by an acquaintance.

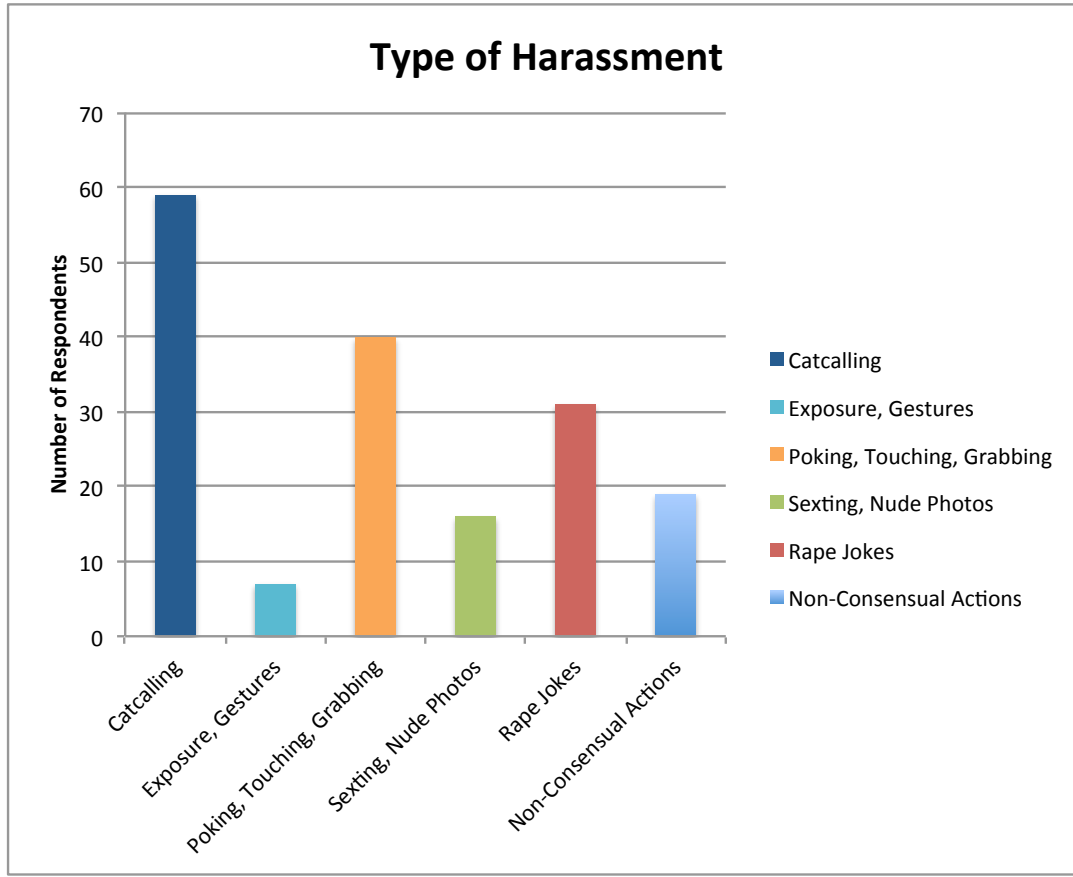


Figure 7. Types of Sexual Harassment Experienced by Victims During College

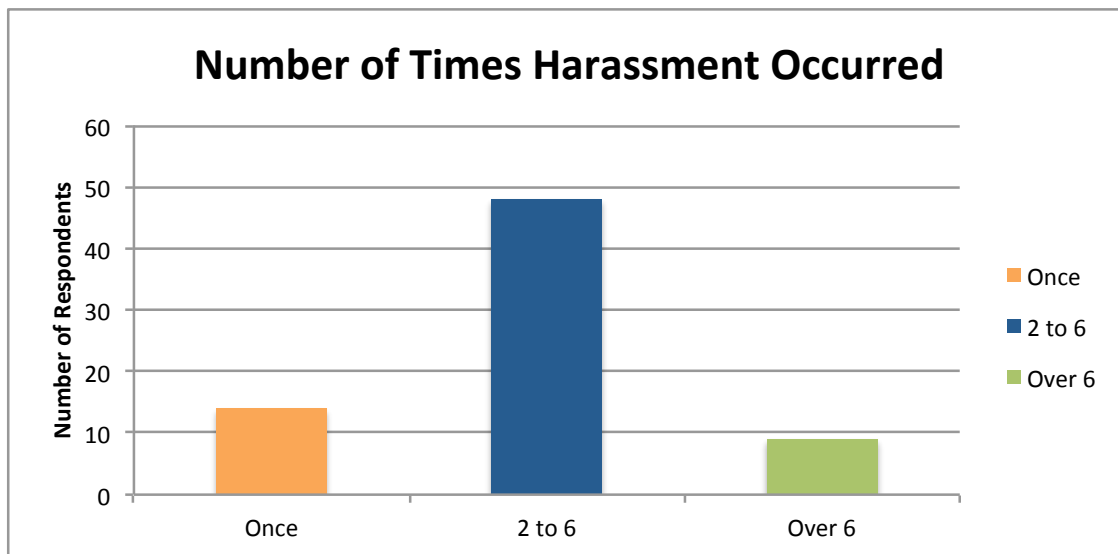


Figure 8. Frequency of Sexual Harassment Experienced by Victims During College

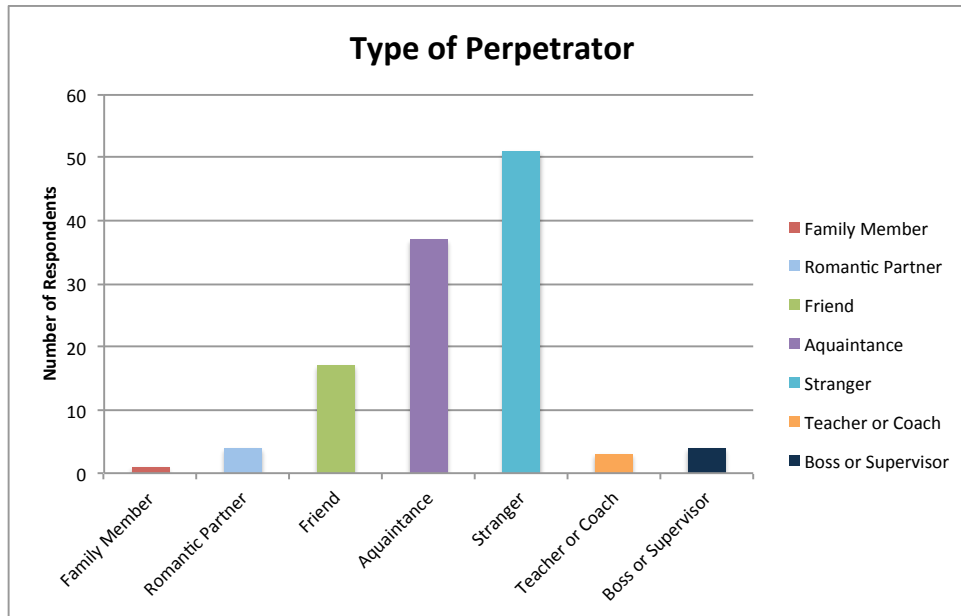


Figure 9. Types of Perpetrators committing acts to victims of Sexual Misconduct during College

#### Data for Larry Nassar and William Strampel-Related Questions

For clarity, the following data reflects these questions on the survey:

11. On a scale from 1 to 5, has the recent publicity around the Nassar and Strampel cases encouraged you to report events of sexual misconduct (either past or future events)?
12. On a scale from 1 to 5, has the recent publicity around the Nassar and Strampel cases worried you about experiencing sexual misconduct in your future education?
13. On a scale from 1 to 5, has as the recent publicity around the Nassar and Strampel cases worried you about experiencing sexual misconduct in your future science career?

When comparing data from women who had not experienced sexual harassment at college, and women who had experienced sexual harassment at college, percentages were calculated by determining how many individuals chose a number 3 to 5 (excluding “unsure” responses). Using a Z-test, the calculated p-value for the reporting question was .0024, meaning the difference between “yes” and “no” was statistically different. For the education question, the calculated p-value was .5472, meaning the difference between percentages for individuals who had and had not experienced sexual harassment was not statistically different. Additionally, for

the career question, the p-value was 0.863, meaning the difference in percentage was not statistically different.

When comparing percentages between those who had experienced sexual harassment, and those who experienced physical harassment more than once (severe), there were no significantly different percentages. For the question regarding reporting, the p-value calculated was .0692. For the question regarding education, the p-value was .2055, and for the question about careers, the p-value was .3030. Since none of these were underneath  $p=.05$ , their differences were considered insignificant.

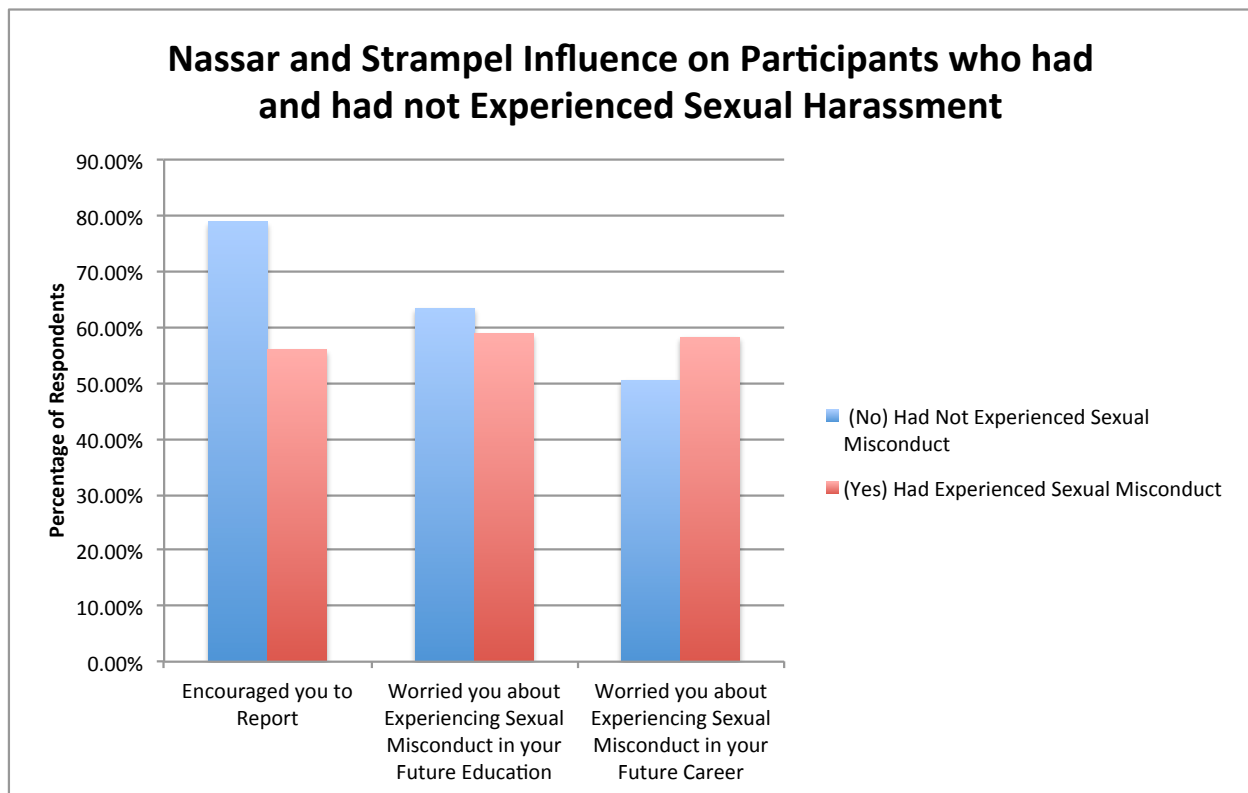


Figure 10. Nassar and Strampel Influence on Participants who had (Yes) and who had not (No) Experienced Sexual Harassment. For (No) Had Not Experienced Sexual Misconduct,  $n=90$  for the reporting question, and  $101$  for the education and career questions. For (Yes) Had Experienced Sexual Misconduct,  $n=66$  for the reporting question,  $n=68$  for the education question, and  $n=67$  for the career question. "Percentage of Respondents" includes the percentage of women who selected 3 or higher on the scaled question.

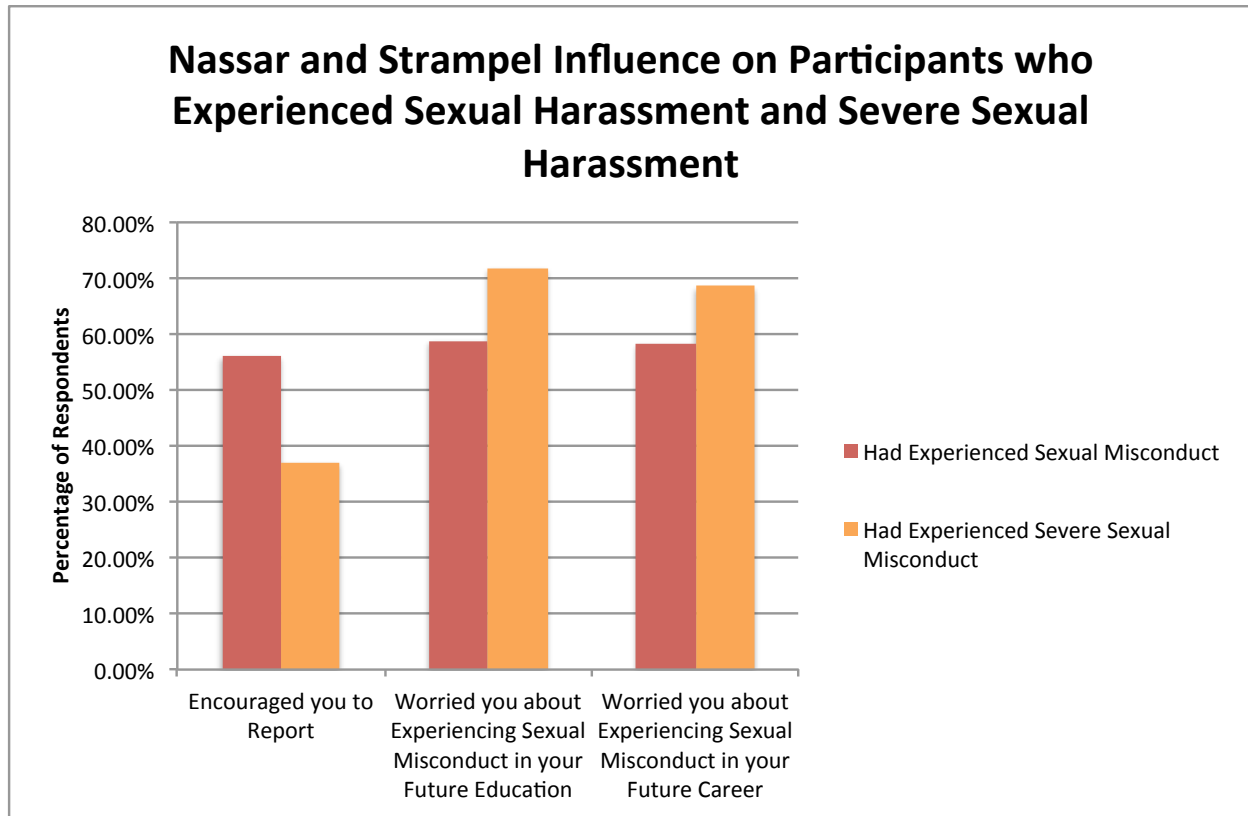


Figure 11. Nassar and Strampel Influence on Participants who Experienced Sexual Harassment and who Experienced Severe Sexual Harassment During College. For those who had experienced any kind of sexual misconduct, n=66 for the reporting question, n=68 for the education question, and n=67 for the career question. For women who had experienced severe harassment, n=35 for the report and career questions, and n=32 for the education question. “Percentage of Respondents” includes anyone who selected 3 or Higher.

## Discussion

The data collected showed that many undergraduate Biology, Biomedical Sciences, and Biology: Secondary Education majors had experienced sexual harassment at college. 41%, or 71 women, had admitted to experiencing some form of sexual misconduct, including freshmen who had only been on campus for two weeks when the survey was conducted.

Of these women, the most common type of harassment was verbal, including catcalling. The second most-common type of harassment was physical, including any unwanted poking, touching, or grabbing. Most women who experienced harassment had between two and four encounters, and the most common perpetrator was a stranger.

For the Larry Nassar and William Strampel questions, when comparing women who had experienced sexual harassment, and women who did not experience sexual harassment, victims were statistically less likely to report due to the Nassar and Strampel cases. Women were not statistically more or less fearful of experiencing sexual harassment in their future educations and careers, though, due to these cases.

When comparing women who experienced sexual harassment, and women who had experienced severe sexual harassment, there were no statistically different percentages between the groups for reporting, fear of experiencing sexual harassment in educations, or fear of experiencing sexual harassment in future careers due to the Nassar and Strampel cases.

With this information, it becomes clear that sexual harassment continues to be a huge issue for young women. Although the initial hypothesis that women would be more likely to report, and more fearful of experiencing sexual harassment in their educations and careers due to the Nassar and Strampel cases was rejected, it opens up an important discussion.

More information needs to be gathered regarding why women who experienced sexual harassment were less likely to report after learning about the Nassar and Strampel cases. There are many reasons that may be causing this, including fear of being believed, fear of the perpetrator causing harm, fear of being publically ridiculed, and others. At this point in time, there is uncertainty why sexual harassment cases may be negatively impacting women, but more studies must be conducted to try to find this answer. With this knowledge, universities and professional science centers (such as hospitals and medical schools) can prepare to welcome students in more safe and positive ways to share their stories.

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## Appendix A

*Please read this consent information before you begin the survey.*

You are invited to participate in a research project entitled "*Sexual Harassment of Biology and Biomedical Sciences Undergraduates: A Study into the Effects of Larry Nassar and William Strampel*" designed to study the prevalence and severity of sexual harassment to biology and biomedical sciences women, and the potential impact of major sexual misconduct cases. The study is being conducted by Dr. Joetta Carr and Kate Ryan from Western Michigan University, Department of Sociology. This research is being conducted as part of the honors thesis requirements for Kate Ryan.

This survey is comprised of several demographic questions in addition to eight others, including scaled, multiple choices, free response, and multi-select questions. The survey should take 10 minutes to complete. At the end, you will have an opportunity to enter a drawing to win a \$25 Visa gift card. Some survey questions include sensitive material regarding your personal experience with sexual harassment.

Your replies will be completely anonymous. When you begin the survey, you are consenting to participate in the study. If you do not agree to participate in this research project simply exit now. If, after beginning the survey, you decide that you do not wish to continue, you may stop at any time. You may choose to not answer any question for any reason. If you have any questions prior to or during the study, you may contact Dr. Joetta Carr at 269-387-5283, Kate Ryan at 269-615-1262, Western Michigan University Department of Sociology, the Human Subjects Institutional Review Board (269-387-8293) or the vice president for research (269-387-8298).

This study was approved by the Western Michigan University Human Subjects Institutional review Board (HSIRB) on **(September 1<sup>st</sup>, 2018)**. Please do not participate in this study after (one year after approval).

Participating in this survey online indicates your consent for use of the answers you supply.

- I agree to participate \_\_\_\_\_

1. Are you a female undergraduate with a Biomedical Sciences or Biology Major?
  - If Yes, continue with the survey
  - If No, survey ends now

1. What is your academic standing (freshman, sophomore, junior, senior)?
2. What is your major?
3. What is your race?
4. What do you plan to do with your degree? (Please check the box closest to your future plans)
  - Attend Medical School (D.O. or M.D.)
  - Attend PA School
  - Become a nurse
  - Become a Nurse Practitioner
  - Become a teacher or professor
  - Become a research scientist
  - Become an environmental scientist or wildlife biologist
  - Other

**WARNING:** The following pages include sensitive information regarding your personal experience with sexual harassment. If you choose not to answer these questions, please end the survey now.

In January of 2018, Larry Nassar, former physician for Michigan State and USA gymnastics, was convicted of sexually abusing two-hundred and sixty-five women and girls over the span of two decades. Shortly after, William Strampel, Dean of Michigan State's College of Osteopathic Medicine, was charged with fourth-degree criminal sexual conduct for inappropriately touching a female student and keeping nude photos of female students on his work computer.

With recent accusations and convictions of high-profile individuals, including those of Nassar and Strampel, a greater media presence has emerged in support of the victims. With this, the #metoo trend has become popular on social media, allowing victims to come together to support the cause of sexual misconduct awareness.

5. During college, have you experienced sexual misconduct defined by Western Michigan University as, "Any unwelcome sexual advance, request for sexual favors, or other unwelcome verbal or physical contact of a sexual nature?"
  - Yes
  - No
6. If yes, what form(s) of sexual misconduct best fit what you experienced? (Check all that apply)
  - I have never experienced sexual misconduct
  - Catcalling, asking for sexual favors, making sexual remarks
  - Inappropriate exposure, gestures, showing of pornography

- Any kind of inappropriate poking, touching, or grabbing
- Unwanted sexting, showing or sending nude photos over a technological medium, harassment over social media
- Making rape jokes or comments
- Non-consensual sexual attempts or actions

7. If yes, approximately how many times did these acts occur?

- I have never experienced sexual misconduct
- One time
- Between 2 and 6 times
- More than 6 times

8. If yes, who were the perpetrator(s) of the acts that you reported? (Check all that apply)

- I have never experienced sexual misconduct
- Family Member
- Family friend
- Romantic Partner
- A Peer (friend)
- A Peer (acquaintance)
- A stranger
- A teacher or coach
- A boss or supervisor

9. Have you reported an act, or acts, of sexual harassment during college?

- I've never witnessed or experienced sexual misconduct during college
- I have reported an act
- I have never reported an act

10. On a scale from 1 to 5, has the recent publicity around the Nassar and Strampel cases encouraged you to report events of sexual misconduct (either past or future events)?

- 1: Not at all
- 2: Slightly
- 3: Moderately
- 4: Significantly
- 5: Very much so
- Unsure

11. On a scale from 1 to 5, has the recent publicity around the Nassar and Strampel cases worried you about experiencing sexual misconduct in your future education?

1: Not at all  
 2: Slightly  
 3: Moderately  
 4: Significantly  
 5: Very much so  
 Unsure

<https://www.surveymonkey.com/r/FQPKMGX>

12. On a scale from 1 to 5, has as the recent publicity around the Nassar and Strampel cases worried you about experiencing sexual misconduct in your future science career?

1: Not at all  
 2: Slightly  
 3: Moderately  
 4: Significantly  
 5: Very much so  
 Unsure

13. Is there anything else you would like to add?

\*Room to elaborate

END OF SURVEY: Follow link to be put into a drawing for a \$25 Visa Gift Card

**Appendix B**

Dear Students,

I'm looking for women with Biology, Biomedical Sciences, and Biology Secondary Education majors to take part in a 5-minute survey for an honors thesis project. This research is looking into the sexual harassment climate of undergraduate women of science and the effects of Larry Nassar and William Strampel. The survey is completely anonymous, and you have the opportunity to enter a drawing to win a **\$25 Visa gift card**. The link is as follows:

<https://www.surveymonkey.com/r/FQPKMGX>.

Thank you for your help!

Sincerely,  
Kate Ryan