

THE COVID-19 PANDEMIC ERA AS A UNIQUE HISTORICAL PERIOD FOR COLLEGE
STUDENTS NEGOTIATING ROMANCE, DATING AND SEXUAL RELATIONSHIPS:
PREDICTORS OF HIGH SELF-EFFICACY FOR ENGAGING
IN SAFER SEX PRACTICES

Yolanda Alvarez

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Abstract

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The problem this study addressed involves how college students since the year 2020 in the U.S. have been negotiating romance, dating, and sexual relationships in the unique historical period of the COVID-19 pandemic. Further, this study addressed the problem of needing to determine how the pandemic may have disrupted college students' intimate sexual experiences—and impacted their mental health, physical health, and experiences of social support. The main purpose was to identify significant predictors of the study outcome variable of a higher rating of self-efficacy for engaging in safer sexual behaviors. An additional purpose of the study was to determine if there were significant differences in students' mean ratings—when comparing mean scores for 5 time periods (i.e., 1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)—for physical health, mental health, social support, and level of involvement in romantic, intimate, serious dating, or sexual relationships. Overall, comparisons for time periods found deterioration during the pandemic years with some signs of improvement by the current time period of Spring 2023. Findings showed females had higher self-efficacy to perform safer

sexual behaviors, but also that survey respondents who lived independently had higher self-efficacy to perform safer sexual behaviors, those who had a COVID-19 diagnosis in the past two years had higher self-efficacy to perform safer sexual behaviors, and survey respondents whose college *did have* a sexual assault media campaign had higher self-efficacy to perform safer sexual behaviors. The results of the backwards stepwise regression found that higher self-efficacy to perform safer sexual behaviors was significantly predicted by higher age, higher income, higher BMI, lower social support, higher current romantic involvement, higher exposure to sexual assault information on campus, lower alcohol/drug use during sex, and higher stage of change for engagement in safer sex—as a global mean score capturing four risk reduction behaviors; and, 56.4% of the variance was explained by the model. Implications and recommendations are discussed with a focus on the need for longitudinal studies with a nationally representative sample.

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Chapter 1: INTRODUCTION

Omstead et al., (2020) indicated that a college student may be viewed as an “emerging adult” and many are “launching out from one’s family of origin” (p.300). This means increased opportunities to explore and experiment, given the transition to college from high-school (Omstead et al., 2020). More specifically, college is a time for students to “explore their sexuality” through “hookup culture” and via what may be a “casual sex encounter” (Thorpe et al., 2019, p.68). College is also a time when students engage in higher risk health behaviors (Thorpe et al., 2019).

Further, as per Negash et al. (2020), young adults may be considered members of a “vulnerable” groups for contracting sexually transmitted infections (STIs), which may be due to a “lack of prevention-based sex education training” on a college campus (p.241). Indeed, it may be said that college students possess a “unique risk for adverse sexual” outcomes, which include not only STIs, but also pregnancy (Vamos et al., 2020, p.79). College students who have a “lack of knowledge” may be at a disadvantage, as sexual health knowledge can “enable a person to make informed choices” and “reduce health risks” (p.80).

The Centers for Disease Control and Prevention (CDC) noted how sexual health education “addresses knowledge and skills students need” in order to keep themselves safe across a range of high-risk behaviors (CDC, 2020). Sexual Health education will likely support students in decision making that will ultimately support the student in making decisions to that prevent activities that lead to HIV, sexually transmitted diseases (STDs), and pregnancy. The CDC asserts sexual health education programs offer a connection to other services, involving parents and/or community members and building trusted partnerships with students (CDC, 2020). A connection to other services can better support access to medical care and STD testing

as well as information about mental health services among others. The impact of a quality sexual health education program has been well-documented. CDC data suggests that students who participate in such programs are more likely to be associated with the following outcomes: having fewer experiences of unprotected sex, engaging in the increased use of protection, specifically condoms; and showing improved academic performance. Further, students who received sexual health education are often given access to tools and preventative care to support their having a reduced risk for many unintended consequences (CDC, 2020).

Meanwhile, the COVID-19 pandemic fundamentally changed the nature of the college experience (Herbenick et al., 2022). Indeed, college campuses had to significantly change the way education was delivered due to the pandemic. The public health crisis of COVID-19 caused college campuses to shut down, institute health and safety protocols, and deliver education online, thereby “affecting 14 million college students;” and in many cases, colleges required students to “return to their local community” (p.183). There was speculation regarding how the pandemic experience might impact intimate sexual experiences, given a global lockdown with few opportunities to meet peers, especially as sex is considered a normal part of the college experience (Herbenick et al., 2022).

1.2 The COVID-19 Pandemic and College Students’ Relationships

Herbenick et al., (2022) investigated the impact of the COVID-19 pandemic on college students and their experience of relationships. A random sample of undergraduate students was used in a study conducted in two waves. Wave 1 data collection was a confidential online survey (n=4,989) which occurred in January/February 2020. Wave 2 data collection involved the same population in April/May 2020 post-closure. Of 2,137 participants who completed both waves

some 49.8% were women with a mean age of 20.9 years; and 2.6% were living at home in Wave 1 compared to 71.0% at Wave 2. Of those in relationships, 14.5% experienced a breakup and 25.3% stayed in their relationship but returned home to different cities. (p.182). Students with no partner showed less likelihood of using a condom in Wave 2, as compared to Wave 1. It was noted how college students may not have had the same access to items such as a condom in their parent's home or may have made regular trips to the local store. Approximately "one-third of students lost regular in-person contact with partners" and sexual activity with partners was less prevalent in this group (p.193). of note, in the study, some 77% self-identified as heterosexual and 69.1% identified as White—with 96.6% enrolled full-time and "about half of students reported being in a committed relationship" at Wave 2 (Herbenick et al., 2022, p.193).

Rosenberg et al., (2021) discussed how individuals who had more "social and sexual connections during COVID-19 had better mental health outcomes" (p.1222). The study was a nationally representative online survey of American adults aged 18 and over (N=1010). Loneliness and depression were measured using the 11-item Center for Epidemiologic Studies Depression Scale. Regarding findings, "observed relationships between social and sexual connections and the outcomes of depression and loneliness" substantiated the need for individuals to be connected during this time (p.1227). Individuals were limited in interactions during the pandemic. A limitation of the study is that it was a cross-sectional study which had implications for understanding "temporality" in relation to "social and sexual connections" (p.1228). While within the U.S. there was the widespread implementation early in the COVID-19 pandemic of closures and restrictions to mitigate the spread of the disease, this appears to have impacted mental health. Those who had "very frequent in-person social and sexual connections" fared better with regard to their mental health (Rosenberg et al., 2021, p.1230).

1.3 Self-Efficacy

Edison, et al., (2022) explored with college students the relationship between self-efficacy to obtain sexual consent and sexual health communication as a way to promote safer sex behaviors such as condom use. A population of college students (n=1547) was sampled using baseline surveys in a cluster randomized controlled trial of an intervention to increase knowledge of sexual violence resources and harm-reduction strategies (p.283) The data was collected across 28 college campuses pre-Covid between 2015-2017. Students self-identified gender, with the sample including males (n=393) and females (n=1,150) with 68.5% identifying as non-Hispanic White with a mean age of 20. Students self-identified as 93/1% heterosexual. Females were found to have higher self-efficacy to obtain consent than males, but lower odds for condom use (p.282). Findings indicated that “consistent condom use” was associated with both consent self-efficacy and communication about condoms (p.282). Findings suggested that sexual health communication should include explicit dialog specific to condom and contraception use. Further, “odds of consistent condom use were highest” in those who reported “condom use communication and high self-efficacy” (p.282). Communication was important together with a high self-efficacy rating for this finding. Offering more distinct ways to engage in communication about condom use and sexual consent may “empower students to feel confident and comfortable creating a sexual health dialogue” (Edison, et al., 2022, p.288).

Brasileiro, et al., (2021) asserted social self-efficacy, “a person’s belief in their ability to successfully manage social relationships” is an important consideration in sexual communication between partners (p.172). Further, individuals who have “partner trust and relationship commitment” have “greater sexual communication” (p.173). Self-efficacy is a psychological construct where an individual has belief that they can accomplish something. Social self-efficacy

is the confidence to “successfully initiate, engage and maintain interpersonal relationships” (p.173). A cross-sectional survey was conducted to explore the association between social self-efficacy and sexual communication skills among adolescents. There were three components measured: “sexual assertiveness, self-efficacy for sexual communication, and frequency of sexual communication among partners” (p.173). Frequent communication is associated with safer sex behaviors. The study sampled 10th grade girls between the ages of 14-17 (n=371 invited; n=222 completed the survey) from four rural low-income high schools in the southeastern United States. Participants answered questions on social self-efficacy, sexual assertiveness and self-efficacy for sexual communication. The sample included 37.6% White, 29.4% Latina, 24.4% Black, 8.6% another racial or ethnic identity, 79.6% were heterosexual—with 50% reporting having a dating partner in the past 3 months. Findings showed social self-efficacy was significantly positively associated with sexual assertiveness ($r=0.25$, $P<0.001$) and sexual communication self-efficacy ($r=0.13$, $P=0.007$) for all girls (Brasileiro, et al., 2021, p.175).

1.4 Social Support

Carmeli et al. (2020) indicated that social support is “critical for students’ academic motivation and achievement (p.352). Social support is likely important for student achievement and this research explored how social self-efficacy (SSE) impacts student success. Research suggests that individuals with “lower SSE” are likely to “benefit more from social support in promoting vitality” as compared to those with “higher SSE”(p.352). Individuals who have high SSE are able to navigate their interpersonal relationships to support vitality. The study examined secondary data from a larger study of full-time enrolled students in a mid-western U.S. public

university (n=141) with a survey having an 82.46% response rate” (p.354). The population was not a diverse pool with the average student age of 21.8 years old—with 51% female, 71% Caucasian, 21.3% Asian and the remaining students being African American, Hispanic and “other” (p. 355). Social support was evaluated at Time 1, social self-efficacy was measured at Time 2, vitality at Time 3, and academic performance at Time 4 using various adapted and/or validated measures. The results indicated social support is “significantly correlated” with all three main variables of SSE, vitality and academic performance (p.356). A need for further research was discussed while investigating multiple types of social support such as emotional, behavioral, and cognitive social support (Carmeli et al., 2020, p.359).

1.5 Sexual Negotiation Training for Increasing Condom Use

Negash et al. (2020) demonstrated that those who receive sexual negotiation training “were significantly more likely to report greater condom use at post-test” (p.241) Basic sex education in secondary schools is provided, yet it is limited. Further, “abstinence based programs” continue to be a focus of sexual health curriculums and provide “basic sex education” around “STRs, HIV, condom mechanics, contraception” (p.242). Sexual education programs may not include sexual negotiation training, which could support reducing risk in sexual activity. Sexual negotiation training “emphasizes sexual communication, negotiation, and decision making” with partners (p.243). Communication creates open conversations about fears, risk and obstacles. “Condom use self-efficacy” is “a significant and strong predictor of actual condom use” (p.243). A randomized controlled experiment was conducted with undergraduate students from a Southeastern university. Demographic characteristics included: 68% non-Hispanic White, 17% Hispanic, 12% African American, 2% Asian/Pacific Islander, and 1% as Other (p.245).

Some 90% of the participants completed the follow-up. The participants were instructed to watch a brief 19-minute sexual negotiation video and then write their reactions. The comparison group was given a 15-minute PowerPoint on basic sex education with statistics on STIs with instructions to write their reactions. Baseline questions assessed condom knowledge, self-efficacy and other sexual health information (p.245). Findings showed that “brief sexual negotiation training” was beneficial to “improving condom use” on campus (Negash et al., 2020, p. 255).

1.6 Refusing Sex

Marcantonio and Jozkowski (2020) assert college students use a “variety of refusal cues” when declining sexual activity, (p.260). Research suggested there were various patterns of refusal: i.e., “direct verbal” such as direct statements of “no” or “direct non-verbal” such as “physical distance” and, “indirect non-verbal” such as “body language” (p.261). Research has been conducted to understand sexual refusal, yet limitations remain. First, “cultural shifts” will require “re-examining refusal communication cues” to stay current (p.262). The current college student population has a set of normative behaviors. Second, research tends to have small sample sizes; and third, research about refusal communication “fails to capture the actual cues college students report using” (p.262). Research has captured the belief that students “could refuse sexual activity” yet did not document the “verbal and behavioral cues they did use to stop sexual activity” (p.262). Research suggests that understanding about self-efficacy is important. However, it is equally necessary to learn “how young adults communicate sexual refusals” (p.262). This current study explored how refusal occurs. Student participants were recruited from public universities in Ontario, Canada and the United States. The study sample included students

18-24 years old (N=615) with 471 Canadian and 144 United States students. The population consisted of 81.3% female, 80.9% White, and 56.7% identified as a first-year student, with 94% sharing they received sex education in their lifetime (p.263). Students completed a survey with quantitative and qualitative open-ended questions. Findings included documenting verbal cues that were: “variations of saying no” “implicit internal excuses” such as “menstruation” or “implicit external excuses” such as “needing to leave or not having a condom” (p.265). Additional findings showed students used “active behavioral cues” such as “moving a hand away” or “passive behavioral cues” such as “body language” (p.267). Future education should give legitimacy to the many ways of refusal, as refusals “do not need to be explicit” to be understood (Marcantonio & Jozkowski 2020, p.271).

1.7 Research with Black Students at HBCUs

Francis et al., (2021) emphasized how “black students at HBCUs [Historically Black Colleges and Universities] tend to be at higher risk for STI’s” given a variety of factors such as the “sex ratio imbalance” where there are more females than males (p.217). The purpose of the study was to consider the “role of interpersonal communication” on a “health communication intervention (p.223). The study was conducted over a 3-month period at an HBCU. The study was designed to increase access and usage of condoms among Black college women. Participants ranged between 18-23 years (N=105) with 84% living on campus, 67% having a steady partner, and 93% being sexually active over the past three months. However, 39% used a condom the last time they had sex. The campus was given 10 condom dispensers, a supply of lubrication, and 10 posters advertising them. Regression analyses associated “positive significant associations between interpersonal communication, condom acceptability and condom [use] intentions”

(p.217). Findings suggested that continues more work need to be done to support condom acceptance. In this study, only 52% perceived that at least some of their friends carry condoms. The findings supported use of the health communication interventions using condom dispensers, while serving to broaden condom use education across an HBCU campus (Francis et al, 2021).

1.8 Research with Latinx Youth and Their Families

Estrada-Martinez, et al., (2021) examined how Hispanic adolescents “talk with mothers, fathers and extended family members about” the risk inherent in sex, “protection and relational sex along with gender roles” (p.59). This study focused on a sample of 14 to 21 year old students at six urban schools in New England with 61.3% identified as Hispanic/Latino/a and/or Latinx (n=507). The study included “fathers and extended family” to go beyond the “mother-teenager” dyad (p.70). Family Sexuality Communication was evaluated using the Teen-Family Communication about Sex Scale (TFCSS). The TFCSS adopted selections from the Parent-Adolescent Communication Scale (PACS). Findings included how “Hispanic teenagers were more likely to talk with a parent of the same gender” (p.68). This was noteworthy, as “few intervention studies examine the role of fathers” to support reducing risks (Estrada-Martinez, et al., 2021, p.69).

1.9 Research with Sexual Minorities

McKenna, et al. (2021) noted how “cisgender and nonbinary sexual minorities are at increased risk” for sexual violence (p.1490). The study evaluated non-heterosexual adults ages 18-29 years old to identify predictors of consent communication during a “first-time penetrative sexual encounter with a new partner” (n=228). The sample included U.S. cisgender and

nonbinary sexual minority young adults with 68% White. This study utilized “traditional sexual script theory” which states, “consent behaviors are heavily informed by traditional gender role expectations” (p.1491). The Internal Consent Scale was used to understand the participant’s “willingness to engage in sexual activity” and the External Consent Scale was used to understand how the participant “communicated during their most recent penetrative sexual encounter” such as non-verbal, passive, or another mode (p.1497). The Traditional Masculinity and Femininity Scale was used to assess traditional gender role self-concept; and, the Sexual Assertiveness Questionnaire captured an individual’s ability to communicate their sexual wishes. It was found that “sexual assertiveness” was a “strong predictor of self-reported use of clear communication strategies” when discussing consent (p.1501). Findings also showed that sexual assertiveness included “direct verbal signaling” and less “passive and indirect” verbal signaling (p.1503). Future educational campaigns should include what sexual assertiveness actually looks like in all partnerships and encounters. It is important to consider “all genders and sexualities” (p.1503). Future research on consent communication needs to explore “intersectionality across race, gender identity and sexual orientation” (p.1505). Also of potential values is future research on how various populations have learned or not learned how to be “assertive in sexual situations” (McKenna et al., 2021, p.1506).

Griner et al. (2021) explored sexual consent communication among gender minority college students, in order to understand the “sexual scripts and consent communication methods” utilized (p.462). Script theory asserts that “all behavior is socially scripted and human behaviors come from scripts” (p.463). The study recruited a sample (n=81) from student organizations with the majority of students self-identifying as cisgender women (72%) and 14% identifying as transgender or other gender identities. Verbal communication was the most common consent

practice noted. This was noted in sexual scripts of consent and also in scripts of non-consent where individuals communicated, they “do not want to have sex” (p.465). This finding was “consistent with the heterosexual population” (p.466). A limitation of the study was that “sexual communication is far more nuanced and complex than any one study” can encompass, and the population was not diverse in that most of the sample self-identified as cisgender women; however, at least 14% of the sample was transgender or of another identify (Griner et al., 2021, p.467).

1.10 Statement of the Problem

The problem that this study addressed is how college students since the year of 2020 in the U.S. have been negotiating romance, dating, and sexual relationships in the unique historical period of the COVID-19 pandemic—while college is typically a time for intimate sexual experiences with the possibility of engaging in higher risk sexual behavior; and, students are at a unique risk for the adverse sexual outcome of sexually transmitted diseases (STIs), in particular. Further, this study addressed the problem of needing to determine how the COVID-19 pandemic may have disrupted college students’ intimate sexual experiences, which are a normal part of the college experience. Worthy of investigation is also how the pandemic may have impacted college students’ mental health, physical health, and experiences of social support.

1.11 Purpose of the Study

The main purpose of the study was to:

1-identify significant predictors of the study outcome variable of a higher rating of self-efficacy for engaging in safer sexual behaviors

An additional purpose of the study is to:

2-determine if there are significant differences in students' mean ratings—when comparing mean scores for 5 time periods (i.e., 1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)—for:

- Physical health
- Mental/emotional health
- Social support
- Level of involvement in romantic, intimate, serious dating, or sexual relationships

1.12 Research Questions, Survey Parts, and Data Analysis Plans

Given a sample of college graduates (N=976) who responded to a social media campaign (i.e., *Inviting May & June 2022 college grads to take 12-15-minute survey on the impact of the pandemic on their dating & love lives. Complete survey at <https://tinyurl.com/PandemicImpactOnLoveLife> for 3 in 250 chance to win 1 of 3 \$100 Amazon gift cards (Teachers College IRB # 23-146)*), this study will answer the following research questions:

1-What were their demographic characteristics (gender, age, race/ethnicity, partner [yes/no], children [yes/no], live with parents [yes/no], skin color tone, U.S. born [yes/no], employment status, type of college/university attended – i.e., Predominantly White Institution [yes/no])?

Part I: Basic Demographics (BD-14)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

2-To what extent were they at risk of providing socially desirable responses?

Part II: Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RPSDR-1)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

3-What was their personal health background (had COVID-19 [yes/no], Body Mass Index), and ratings of their physical health and mental health for each of 5 time periods (1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)? And, were there any significant differences across the 5 time periods?

Part III: Personal Health Background and Body Mass Index (PHB-BMI-14)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages; and paired t-tests

4-What did they report for their level of social support for each of 5 times periods (2018-2019/freshman year before the pandemic; 2019-2020/second semester of sophomore year during pandemic; 2020-2021/junior year during pandemic; 2021-2022/senior year during the pandemic; and currently, especially the past 3 months)? And, were there any significant differences across the 5 time periods?

Part IV: Perceived Social Support—For Before and During the COVID-19 Pandemic, and Currently (PSS-BD-COVID-19-P-C-5)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages; and paired t-tests

5-How did they rate their level of involvement in romantic, intimate, serious dating, or sexual relationships for each of 5 times periods (1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)? And, were there any significant differences across the 5 time periods?

Part V: Rating Level of Involvement in Romantic and Sexual Relationships Before and During the COVID-19 Pandemic—And Currently (RLIRSR-BD-COVID-19-C-5)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages; and paired t-tests

6-To what extent do they report a negative impact from the COVID-19 pandemic on their developing, experiencing, or maintaining romantic, intimate, serious dating, or sexual relationships?

Part VI: Extent of Impact from the COVID-19 Pandemic on Romantic and Sexual Relationships (EI-COVID-19-P-RSR-1)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

7-What was their dose of exposure to information, messages, or social marketing campaigns that were campus or college-based that covered sexual assault policy, sexual assault prevention, or the reporting of sexual assault—as well as to any class, workshop or training on these topics?

Part VII: Dose of Exposure to College-Based Sexual Assault Prevention Policies and Information (DECB-SAPPI-5)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

8-Given their years in college and the responsibility of their college to expose students to multiple messages on the college's sexual assault policy, sexual assault prevention, and sexual assault reporting, to what extent did they view the COVID-19 pandemic as having a negative impact on the college meeting their responsibility?

Part VIII: Extent of Impact from the COVID-19 Pandemic on College's Sexual Assault Educational Strategies (EI-COVID-19-P-CSAES-1)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

9-Did they report currently, or do they report previously using alcohol and drugs?

Part IX: Alcohol and Drug Use Screening (ADUS-2)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

10-If they have had sex, for what percentage of the time do they report having sex when they and/or their partner had also used alcohol or drugs?

Part X: Having Sex and Using Drugs/Alcohol (HSUDA-1)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

11-With regard to four safer sexual behaviors [i.e. asking my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); negotiating with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); refusing to have unprotected sex; having my own supply of condoms (or dental dams, or latex or nitrile gloves)], in what (sub-scale 1) **stage of change** were they for performing these behaviors, what was their (sub-scale 2) **level of self-efficacy** for performing them, and to what extent did the (sub-scale 3) **pandemic have a negative impact** on their learning how to or actually performing those behaviors?

Part XI: Condom Use and Safer Sexual Behaviors Scale—With Stage of Change, Self-Efficacy, and Pandemic Impact Sub-Scales (CUSSBS-WSOC-SE-PIS-12)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

Note: The subscale # **2-Self-Efficacy to perform the 4 risk reduction behaviors (SE-4)**—based on 4 items (2, 5, 8, 11) in Part XI—**is the study outcome variable**

12-Given selected independent variables from the survey parts, were any significant relationships found with the **study outcome variable of a higher self-efficacy to perform safer sexual behaviors?**

Data Analysis Plan: Independent t-tests, Pearson Correlations

13-While controlling for social desirability, and using selected independent variables from the survey parts, what were the significant predictors of the **study outcome variable of a higher self-efficacy to perform safer sexual behaviors?**

Data Analysis Plan: Backward Stepwise Regression Analysis

1.13 Treatment of the Data

Data will be collected on the Qualtrics platform, downloaded to SPSS, and analyzed as per the data analysis plans outlined, above.

1.14 Anticipated Findings

The following findings were anticipated:

1-when identifying significant predictors of the study outcome variable of a higher rating of self-efficacy for engaging in safer sexual behaviors, and controlling for social desirability, the independent variables will be: *higher age, main/steady partner (yes), higher socioeconomic status, higher rating of mental/emotional health, higher social support (global), higher level of involvement in romantic, intimate, serious dating, or sexual relationships (global), lower of rating for pandemic having an impact on their having romantic, intimate, serious dating, or sexual relationships; higher dose of exposure sexual assault information on campus/college, lower percentage of time using alcohol/drugs with sex, higher more advanced stage of change for performing safer sexual behavior, and lower rating of pandemic impact on learning/performing safer sexual behavior.*

And, additional findings were anticipated

2-when determining if there are significant differences in students' mean ratings—when comparing mean scores for 5 time periods (i.e., 1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)—as follows:

- Physical health – *highest pre-pandemic*
- Mental/emotional health – *highest pre-pandemic*
- Social support – *highest pre-pandemic*
- Level of involvement in romantic, intimate, serious dating, or sexual relationships – *highest pre-pandemic*

1.15 Delimitations

Study participation was delimited to college graduates age 20 or above who attended a college or university in the U.S.—and who graduated in May or June of 2022. Further, the study was delimited to include those completed the survey, and who provide data for the study outcome variable of a higher level of self-efficacy for performing safer sexual behaviors.

1.16 Limitations

A study limitation was the requirement that participants have Internet with a smart phone, tablet, laptop, or computer. Some graduates of lower income who were living at home post-

graduation may not have had a reliable Internet connection and may not have been able to engage in study participation. Also, those with the lowest levels of mental/emotional health may not have been able to endure the 15 minutes needed for study participation.

1.17 Conclusion

This introduction to the research study presented the topic of focus: i.e., college students in the COVID-19 pandemic, as a unique historical period, and how they negotiated romantic, intimate, dating, and sexual relationships—and the value in identifying predictors of higher ratings for self-efficacy to engage in safer sexual behavior. This chapter provided the statement of the problem and purpose of the study. In addition, the study research questions, survey parts and data analysis plans were presented—followed by the data treatment plan, anticipated findings, and study delimitations and limitations. The foundation for proceeding with the study has been provided in this manner.

The next Chapter 2 will present the review of literature further substantiating the research study. Next, Chapter 3 will present the study methods. Thereafter, Chapter 4 will provide the results of data analysis. Finally, Chapter 5 will present a discussion of the results, along with implications and recommendations, limitations, and a final conclusion.

Chapter 2: REVIEW OF THE LITERATURE

This chapter will provide a review of literature that is relevant to this dissertation. More specifically, this chapter will cover literature on the following topics: (1) research on college students and contemporary sexual behavior; (2) a focus on sexual health and need for education; (3) research on factors related to safer sexual behavior; and (4) alcohol as a factor contributing to risk.

2.1 Research on College Students and Contemporary Sexual Behavior

According to Leivo et al., (2022). “collegiate hookups often involve sexual behaviors” that may put a student’s sexual health at risk (p.154). Hooking up has become part of the normative college experience. Individuals who engage in “hookups often underestimate sexual health risk including oral sex” (p.155). There can be many other social consequences that are linked to hook ups. For example, there may be “relational conflicts, reputational disgrace, legal issues” and even financial stress (p.155). More specifically, gender disparities exist with long term severe health consequences. Young women can suffer negative consequences impacting their health such as “ectopic pregnancies and/or infertility” (p.156). Further, mental health risks such as depression may also present as a health consequence. Research suggests a “one-time hookup” even with someone known for “less than 24” hours may make a woman vulnerable for “negative emotionality” (p.156). This high risk status is especially true for African American women who are at “particularly high risk for contracting STIs, especially HIV” (p.157). This risk disparity is important to consider given dating, sexual behavior and the impact of the intersectionality of race and gender. Specifically, “young African American women may be

influenced by perceived lack of negotiation ability” given both identities have “traditionally been marginalized” (p.157). Women may not feel empowered in a sexual situation. This “powerlessness in sexual encounters” may “inhibit negotiation of safe sex practices” (Leivo et al., 2022, p.157).

Leivo et al., (2022) reported on a study that was conducted at two public HBCUs and one private university (N=375) where students completed a survey in a class, which took approximately 20 to 30 minutes to complete. Exclusions included individuals who were non-African American/Black students and sexual orientations that did not meet the study criteria, which left 300 students for the sample (p.161). Findings on sexual knowledge from independent samples t-test showed “females had a significantly higher sex knowledge” than males (p.163). Furthermore, in this study, HBCU students were found to be “more sexually satisfied than dissatisfied” and “men had higher total sexual risk,” given they had “sex with uncommitted partners, impulsive sexual behavior” and engaged in risky sex (p.166). STI prevention often involves sex education and lacking this knowledge can lead to being risky. Individuals “may engage in sexual behaviors without understanding the risk” (p.167). It was emphasized how a “comprehensive, sex positive approach to sex education and prevention programs” may help college students by “promoting sex knowledge, skills, and attitudes with sexual satisfaction” (Leivo et al., 2022, p.168).

Leivo et al., (2022) also stressed how the role of public health initiatives is to educate and minimize risk. These initiatives need to empower emergent adults so that they successfully develop positive and satisfying sexualities; rather, it is about prevention and risk reduction. An area for future program development on a college campus is to affirm sex as positive. “Sex positivity” encourages and “affirms sexuality and sexual activity as developmentally normative”

(p.159). Normalizing and affirming safe sex practices to support well-being is what is needed. The focus may be on “pleasure, sexual desire” and consent (p.159). College students may see campaigns about condom usage and safer sex practices, but not about pleasure and/or sexual desire. Leivo et al., (2022) recommended a focus on the “convergence of safe and satisfying sex” as something that is normal (p. 159).

Bedree et al. (2019) recognized how students “self-define their own sexual well-being” and findings suggest that “definitions of sexual well-being are multifaceted” (p.140). Sexual well-being has been an important component of health and wellness research and varies greatly within each community. It is important to consider “community networks and their role in contributing to well-being” (p.142). This mixed-method community-based research study was a collaborative effort between student peer researchers at a gender diverse women’s college in the U.S. and college health services. The peer researchers were 76.9% White and 61.5% were heterosexual. One theme that emerged was “sex positivity” defined as “self-acceptance of their bodies and sexual preferences” in addition to a “non-judgmental attitude” towards the sexual practices held by others (p.145). Affirming yourself was one theme, yet participants commented on the role of societal messaging and its influence on self-acceptance. A sex positive attitude that accepts “individual and other’s preferences” was seen as critical to sexual well-being (p.146). Participants discussed substance abuse, drugs, and alcohol and how they likely impact sexual well-being. Factors that supported sexual communication with a partner included “feelings of safety, comfort, and vulnerability” in order to negotiate “terms of sexual interactions” (p.146.). Social identity factors were also considered such as “gender, sexual orientation, ability, race, and socioeconomic status” and the role they play in sexual well-being (p.148). Power issues and the impact of social identity such as gender were considerations. A key finding was that students

“wanted more frequent and informed services” possibly through the creation of “safe spaces”—while considering other influences such as “family and partner influence” (Bedree et al., 2019, p.154).

According to Ingram, et al. (2019) emerging technologies used by college students are common and this technology has seen a “surge” in being used to facilitate “meeting and communicating with sexual partners” (p.87). Of note, this research is important in revealing the pre-pandemic behaviors of college students. Researchers were able to explore digital applications and implications for sexual health and dating. Digital platforms have created “new communication norms and the ability to instantly share” information about oneself and “by extension” one’s “risk behaviors” (p.87). There are numerous social media sites and online dating applications that help individuals to communicate with others. Previous research in the literature has focused on “behaviors of men who have sex with men (MSM),” given the high percentages of MSM who use technology apps to find partners (p.88). Technology, social media and applications are a part of how college students find romantic partners. Among the 15 to 24 year age group, using “mobile technology is popular” and “common between young romantic partners” p.88). College students are a unique population and it is important to consider how this population may use digital applications in the context of sexual behaviors, dating and intimate relationships (Ingram et al., 2019).

Ingram et al (2019) reported on a cross-sectional study with a convenience sample of college students, examining sexual behaviors, mobile technology usage, and sexting behaviors. The sample was from two universities with data collected from November 2015 through May 2016. Recruitment occurred through distributed invitations at campus events and included snowball sampling where the survey link was shared across networks. They used a 268 item

questionnaire survey hosted on the Qualtrics platform. The sample consisted of 254 participants, 88% female (n=224) and 12% male (n=30); the sample was predominantly White at 72% (n=183) and African American at 17% (42) with a median age of 21 years (p.88-89). The reported results included how over 80% of students had ever had sex, and participants were more likely to use condoms with those partners with whom they were not in a committed relationship in comparison to committed relationships. Seventy percent had ever sexted, and sexting attitudes ranged from approximately 80% agreeing that sexting is “risky” or can leave one “vulnerable” compared to 43% agreeing that sexting is “fun.” Sexting was associated with having multiple sexual partners (odds ratio [OR] 2.47, 95% confidence interval [CI]: 1.36-4.47) and a sexually transmitted infection testing history (OR 2.08, 95% CI: 1.03-4.18) (p.87).

This research of Ingram et al. (2019) is important given “conclusions about the association between sexting and sexual risk are mixed” (p.88). This presents an opportunity for future research, given it is highly likely that the use of technology among college students will continue to be relevant to how individuals meet, date and form intimate relationships. This study reported high rates of consistency in condom usage for those who reported not having multiple partners (p.92). This is good data to share with students to support safer sex practices and positive sexual norms, rather than them taking a chance and engaging in risky behaviors that are seen as commonplace. For example, regarding the power of perceived norms, “sexting” is viewed as a “normative part of college student sexual partnerships” and can be associated with “sexual risk-taking behaviors” (Ingram, et al., 2019, p.94).

2.2 A Focus on Sexual Health and Need for Education

The World Health Organization (2022) produced a document on sexual health. Here, sexual health is discussed as being fundamental to the overall health and well-being of individuals, couples and families—which is inclusive of college students. The WHO (2022) further notes that when sexual health is viewed affirmatively what follows is a positive and respectful approach to sexuality. A positive and respectful approach also follows for sexual relationships, including respect for the possibility of having pleasurable and safe sexual experiences. The goal is for sexual relationships to be free of coercion, as well as free of discrimination and violence. The WHO (2022) identified numerous factors related to men and women being able to achieve sexual health and sexual well-being. These factors include the following: having access to comprehensive and high quality information about sex and sexuality; acquiring adequate knowledge about the risks inherent to sexual activity, especially the negative consequences that follow from unprotected sexual activity; having access to quality sexual health care; and, living in the kind of environment that is both affirming of sexual health and activity promotes sexual health (WHO, 2022).

The CDC (2019) promotes a former World Health Organization (WHO) definition of sexual health as a state of physical, emotional, mental and social well-being. The WHO also posited back then that sexual health requires a positive and respectful approach to sexuality and sexual relationships which includes pleasurable and safe sexual experiences (CDC, 2019).

More recently, CDC (2023a) data documented how engagement in “protective sexual behaviors” such as the use of condoms, STD testing, and HIV testing deteriorated and worsened from 2011 to 2021. Negative consequences may include unintended health outcomes such as pregnancy. The CDC’s year 2021 National Youth Risk Behavior Survey revealed startling

statistics for high-school students, which have implications for contemporary college students. For example, 48% did not use a condom the last time they had sex. According to the CDC (2020) more than half of the nearly 20 million new cases of sexually transmitted diseases (STDs) that were reported in the year 2020 were within the 15-24 year old age group; and, 20% of all new diagnoses of HIV were among the 15-24 year old age group in the year 2020.

The CDC (2023b) recommends providing quality sexual health education in order to provide the knowledge students need to support healthy decision making. This education should be not only age appropriate, but also culturally relevant, medically accurate—and taught by a qualified and trained teacher using a strong health curriculum.

2.3 Research on Factors Related to Safer Sexual Behavior

Casola, et al., (2022) stated “young adults aged 18-24 are disproportionately affected by adverse” sexual health issues such as “unintended pregnancy and sexually transmitted infections” (p.314). This issue has been well-documented in the literature, in addition to the hardships that these circumstances create, leading to mental health and financial burdens. “Dual protection” which means condom use and a “long-acting reversible contraceptives (LARC)” are the “best way to prevent both unintended pregnancy and STI’s” (p. 314). College students are considered growing into adulthood and it is a time of exploring who they are and developing skills that can impact their well-being over the course of their life.

Casola, et al., (2022) conducted a cross-sectional study in an urban university in the Northeastern United States with enrollment of upwards of 40,000 with the goal of exploring dual contraceptive use among college students. Participants had to complete a sexual and reproductive health questionnaire which was distributed pre-pandemic in 2018 with a prize offered to win one

of 50 \$10 gift cards to a local food option. The study focused on determining the “relationship characteristics, sexual health attitudes and demographic factors associated with dual contraceptive use” (p.314). There was a total of 1,301 students who started the survey, but only N=732 who completed the survey. The final sample of eligible respondents was (N=424). The sample was 89% female and 76% White with mean age of sexual debut of 17 years old; 42% reported greater than 3 sexual partners during their lifetime; 20% reported a history of sexual violence; and 65% reported last sexual partner as a romantic partner. Findings showed “emotion based constructs may be more influential on dual use behaviors” p.314). Further, health promotion efforts are important to campus education efforts. These efforts need to account for the “influence partner trust” has on “behavioral motives and risk perception” which is critical when developing educational campaigns (p.322).

Thiessen, et al., (2022) explored consent education using a population of students (N=444) from a mid-sized Canadian university, ranging in age from 17-48 (M=24.98) with 69.4% self-identified as White and 77% as heterosexual. Participants were asked to describe the consent education they received in high-school and from parents; and, based on these experiences, they were asked to recommend how sexual education should be taught. Findings included recommendations on including more comprehensive sex-positive education using “a more holistic approach” along with the provision of “practical recommendations” (p.349). The study outlined where consent education ended in high-school and what remained for students to learn on their own. The concern remained if students understood “how-to apply these definitions” in their everyday world (Thiessen, et al., 2021, p.355).

Omstead et al., (2020) reported findings from a brief sexual health seminar (N=46) which focused on “informed decision-making” among first-semester college students participating in a

brief sexual health seminar (p.300). The study utilized semi-structured interviews and qualitative content analysis. With participation in the brief sexual health seminar, the greatest gains in knowledge were in the areas of sexual and relational health, as well as prevention and “healthy decision-making” (p.300). Relevant commentary included how sexual education programs in the U.S. vary greatly, ranging from school sexual health programs focused on “abstinence only” to “comprehensive-based sexual education” focused on “promoting sexual decision-making” (p.301). The sexual decision-making education is designed to help students navigate sexual experiences, while encompassing essential topics such as sexually transmitted infections (STIs) condom use, and sexual decision-making. Further, the use of peer leaders has been known to be a good mechanism for disseminating education and information. Considerations for future research include to need to incorporate “culturally relevant youth based sexual health education, digital technologies and peer leaders” in order to better distribute relevant information and/or support (Omstead et al., 2020, p.312).

2.4 Alcohol as a Factor Contributing to Risk

Marcantonio, et al., (2022) indicated that their study demonstrated how “young adults who binge drank relied less on active consent” in their sexual experiences (p.273). This may lead to nonconsensual sexual encounters and sex with an incapacitated partner. Researchers noted that “despite the increased risk” the “young adults frequently report engaging in sexual activity involving alcohol” (p.273). Sexual consent is defined as one’s freewill to engage in sexual acts where a person can provide verbal or non-verbal cues to give affirmative consent. A person must be conscious and able to make the decision to engage in sex acts; thus, a person cannot be incapacitated and unable to provide consent. Alcohol has “pharmacological effects on

cognitive functioning” and may “impede people’s ability to accurately interpret” verbal and non-verbal cues during sexual activity (p.274). However, in one study of 160 bargoers, “87% believed they could consent to sex based on how they were feeling” (p.275).

Marcantonio, et al., (2022) recruited 205 students from a large university in the southern United States and after exclusions 86 participants remained. The study sample (n=86) was between the ages of 18 and 24 years of age, sexually active, and currently enrolled in college. The average age was 20.1 years, 77.9% were women and White, 9.3% multiracial, 5.8% Asian American, 4.7% African American, 2.3% Native American, 91.9% heterosexual, 7.0% bisexual, 1.2% questioning, and 86% were in monogamous relationships. Students had to complete a baseline survey and then a daily survey for 30 days with a \$25 incentive at the end of the period. Findings showed how “typical and binge drinking were associated with identifying sexual experiences as consensual” (p.273). Individuals who were categorized as binge drinkers “relied less on active communication” and relied “more on context” than did their non-binge drinkers (p.273). It is possible that “alcohol enhances feelings” such as “closeness, romance, or arousal” which may be the context for feelings of consent (p.279). The study sample had most of the participants as indicating being in a “romantic relationship,” which could be another explanation for how some may “misidentify or overidentify alcohol-induced feelings as feelings of consent due to their connection (p.279). An important recommendation for future research is to assess the individuals who are in a relationship and to separately evaluate individuals who are dating to explore if consent communication and alcohol use varies by relationship status. This would support learning about nuances and differences in communication for targeted program development. Two noted limitations of the study were how it was lacking in diversity, given the sample size was mostly White young adult women. Another noted limitation was how the length

of the relationship was not assessed, which could influence consent communication (Marcantonio, et al., 2022, p.281).

According to Paziienza, et al. (2022), the consequences of high-risk drinking for contributing to campus sexual assault are well-documented among college students (p.23444). Specifically, the “risk for sexual victimization is amplified” when there is “high-risk drinking behavior” (p. 23443). In a study with college student drinking gamers, as a high risk group, participants were recruited from three universities across the Eastern and Southern Central United States to explore bystander intervention, sexual assault attitudes, as well as self-efficacy and intent to intervene. When there is the context of a drinking game, then the environment is considered high risk for consequences. Some of these consequences were “incapacitated assault.” or “acquaintance assault,” and/or “party assault” which may occur. The bystander intervention model is a best practice approach that teaches students “how to identify risk factors for sexual assault, identify these situations as problematic, and teach bystanders appropriate skills” (p.23445). The American College Health Association (ACHA) recommends “community-based prevention efforts” such as bystander intervention training. Bystanders are “often present during the pre-assault phase” where individuals can still “intervene to prevent sexual violence” (p. 23445). Self-efficacy is defined as “one’s belief in their ability to successfully attain” a goal (p.23446). Paziienza, et al. (2022) suggested that there is a place for self-efficacy in considering bystander behavior for intervening. Participating in drinking games is a high-risk activity where individuals drink copious amounts of alcohol and become inebriated quickly. Individuals who engage in drinking games are at “increased risk for perpetration and victimization” (p.23447). The bystander model can be particularly helpful here, given it teaches skills such as “noticing the event” and then categorizing the event as “dangerous and requiring intervention” (p.23447).

Pazienza, et al. (2022) conducted a study with a sample that included (n=964) 68% women, 92.2% American students, 67% White, 13.4% Hispanic/Latinx, 11.7% Black or African American, 4.7% Asian or Asian-American, and 2.4% Other. Recruitment occurred via flyers distributed in-class within the Psychology department with mainly Psychology students. They completed the online survey and were able to access gift cards or obtain course credit. The findings showed that “self-efficacy was found to moderate the relation between rape myth acceptance and bystander intent to intervene,” specifically for women (p. 23456). The findings also showed that individuals had “high bystander self-efficacy” (M=9.27) on a scale of 1-11. However, they reported “less confidence” to intervene when it was a stranger (M=8.23). Scores were highest for self-efficacy when it was a friend in need. Important learnings that helped build self-efficacy were “success past behavior” or past successful interventions and observing others effectively intervene in risky situations (Pazienza, et al., 2022, p.234578).

Another study by Thorpe et al., (2019) included a focus of alcohol. They engaged in a secondary data analysis of data from the Online College Social Life Survey (n=24,131), representing 21 institutions across the nation. In the sample, the majority were women (69%), White (75%), heterosexual (95%), attended religious services (62%), and lived on campus (87%) (p.73). The study sought to evaluate factors that may “influence first-year college students’ hook up experiences” (p.68). “Sexual Script theory” states that individuals “have intrapersonal, interpersonal, and contextual scripts” regarding their expectations during a sexual encounter (p.69). The interpretation of the script can influence what happens. Individual scripts focus on a person’s decision making, including the role of alcohol; and “relational” scripts that focus on partnership patterns (p.71). These scripts create a framework that individuals bring to their relationships. “Cultural” scripts include “campus-specific factors” such as “students affiliated”

with Greek life where behavioral norms result in normalizing some high risk behavior (p.70). Social norms may drive “alcohol use and sexual behaviors;” and, this is a crucial time to develop and for health promotions to emphasize “safe, consensual” and pleasurable experiences (p.71). It is important to understand the factors that contribute to hookup behavior to support health initiatives. The students in the sample perceived hookups as “safe” with many endorsing “non-penetrative sexual behavior, condom use, and familiar partners” as factors associated with safety (p.68). However, those who reported heavy drinking also reported “lower levels of condom use, even with less well-known partners” (Thorpe, et al., 2021, p.68).

2.5 Conclusion

This chapter provided a review on topics pertinent to the focus of the dissertation research. The review of literature covered the following topics: (1) research on college students and contemporary sexual behavior; (2) a focus on sexual health and need for education; (3) research on factors related to safer sexual behavior; and (4) alcohol as a factor contributing to risk.

The next Chapter 3 will present the methods and procedures followed in the study.

Chapter 3: METHODS

This chapter presents the methods and procedures utilized in this study. More specifically, this includes an overview of the study design and procedures, description of the study participants, description of research instrumentation, the data treatment plan, and the data analysis plan.

3.1 Overview of the Study Design and Procedures

This study utilized a cross-sectional design. An online survey hosted on the Qualtrics platform was administered to a convenience sample of college graduates age 20 or above who attended a college or university in the U.S.—and who graduated in May or June of 2022.

3.2 Institutional Review Board Approval

On January 20, 2023, this study received approval under the category exempt from the Teachers College Columbia University Institutional Review Board (IRB) as Protocol # 23-146 (see Appendix A for IRB Approval Letter). The data collection began when the approval to conduct the study was received. An exempt category was approved.

3.3 Recruitment of Study Participants

Participants were recruited for the study primarily using a social media campaign conducted on the following online platforms: Facebook, Twitter (see study tweet/text in Appendix C) LinkedIn, Instagram, website postings, as well as via email (see study email in Appendix B). The social media campaign for this study consisted of sending out a core message that invited May & June 2022 college graduates to take a 15-minute survey as a volunteer participant. This also included an incentive prize for an Amazon gift card. The following message was used consistently in the social media campaign:

Inviting May & June 2022 college grads to take a 12-15-minute survey on the impact of the pandemic on their dating & love lives. Complete survey at <https://tinyurl.com/PandemicImpactOnLoveLife> for 3 in 250 chance to win 1 of 3 \$100 Amazon gift cards (Teachers College IRB # 23-146).

The recruitment campaign allowed snowball sampling in this study given individuals were invited and encouraged to share the study opportunity with their own networks. More specifically, email communications were sent to known workforce contacts within higher education institutions in a variety of roles, ranging from faculty to staff—requesting they share the study link with colleagues, personal networks and anyone they knew. The study email communication was also shared across various groups with ties to the specific college audience such as Graduation 2022 on Facebook. Individual email invitations with the survey link were sent across LinkedIn, which included professional contacts in global fortune 500 companies such as J.P. Morgan, Deloitte, Accenture, E&Y and higher education institutions such as: New York University’s Stern School of Business and the Steinhardt School of Culture, Education, and Human Development; Teachers College, Columbia University; Rutgers Business School at

Rutgers University; and, Fordham University among many others. Individual study email communications were sent to non-traditional groups such as alumni groups on LinkedIn; the NYU Alumni Association generated 965 impressions alone. To reach a wide audience on Twitter various hashtags were used to network and connect with others who might be able to help. Here is a sample of hashtags utilized to search on Twitter and to include in posts: #collegegrad2022, #latinacollegegrad, #collegehealth, #umichpublichealth, #healtheducation, #firstgeneration, #DissertationTime, #ABDStatus. Also, other Twitter and LinkedIn networks were followed to increase email communication and survey distribution, given the organizations focused on career networking for college students and recent graduates. The Principal Investigator also networked on LinkedIn with previous colleagues who work with college students in higher education to utilize their professional networks.

3.4 Other Study Procedures

Participants who clicked on the study link (<https://tinyurl.com/PandemicImpactOnLoveLife>) were directed to the IRB informed consent page (see Appendix D), which included the information about the study, Amazon gift card prize information, details on study confidentiality, and the rights of participants. Those who provided an electronic consent to participate and clicked on a box (Yes) within Qualtrics could proceed to the study Screening Survey (see Appendix E) to be screened for eligibility for study participation.

3.5 Study Inclusion/Exclusion Criteria

The Screening Survey (Appendix E) determined inclusion or exclusion from study participation, as only those who answered “yes” to the following questions were included:

The Research Group on Disparities in Health within the Department of Health and Behavior Studies at Teachers College, Columbia University, in New York, New York is conducting a study with young adults who graduated from college in May or June of 2022. We are seeking college graduates who can share about their romantic, intimate, dating, and sexual relationships for the historically unique period of being a college student during the COVID-19 pandemic era. Our goal is to identify factors related to reporting greater or less involvement in romantic, intimate, dating, and sexual relationships—as well as engagement in any sexual risk-taking behavior (e.g., lack of protection against sexually transmitted diseases). We also seek to determine how well colleges did or did not do during the pandemic era in conveying information about sexual assault prevention and reporting policies. Based on our findings, we will make recommendations to colleges on how to prepare for public health emergencies and best support students, in order to support their growth and development and ensure their safety. To participate in our research study, please answer the following questions to see if you qualify:

1- Are you an adult age 20 or above?

Yes___ No___

2-Did you graduate from a college or university in the U.S. in May or June of 2022?

Yes___ No___

Participants who answered “yes” to the above questions, were invited to proceed to the Study Survey (Appendix F), while those who answered “No” to the above questions, were not eligible for this survey opportunity; however, they were informed they could forward the link to this study to someone who they thought would be eligible for study participation.

3.6 Incentive to Participate: Prizes and Gift Cards

Participants who completed the entire study were directed at the end of the survey to a link associated with a program created and operated by the Research Group on Disparities in Health (RGDH) webmaster, Dr. Rupananda Misra. The program encrypted participants’ emails, while allowing them to enter their email address for participation in a lottery drawing.

Participants were informed there were 3 \$100 Amazon gift cards; and, they had a 3 in 250

chance of winning one of the three gift cards. Data collection started on Tuesday, February 14, 2023 and closed on Saturday, March 11, 2023. Dr. Misra ran the program for selecting the 3 lottery winners upon completion of the study. Of note, the Principal Investigator did not have access to participant data or email addresses in order to link them to the data in the study. Participants' privacy was maintained given these practices.

3.7 Description of the Study Participants

The study recruited participants via the social media campaign in order to obtain a sample of convenience composed of volunteers who met the eligibility criteria of being age 30 or older and a May or June 2022 college graduate. Recruitment efforts resulted in an initial N=1960 survey records. Duplicate IP addresses were removed, and 1306 participants remained. Thereafter, N=1160 who were eligible based on the initial eligibility screening questions. Then, N=1146 who responded to at least 1 demographic question, while 170 did not contribute to the final analysis based on age, year of graduation, not attending a U.S. college or university, or for endorsing that they thought COVID-19 was a hoax; or, because they were missing the primary outcome variable. As a result, the final convenience sample size of eligible participants (i.e., study completers) was N=976.

An analysis of the study completers (N=976) to the study non-completers (N=170) was conducted. Findings demonstrated that completers compared to non-completers were significantly ($p \leq .05$) more likely to be female, non-white, older, and had darker skin color.

See Table 1a.

Table 1a. Comparing Survey Completers (N = 976) to Non-Completers (N = 170), Independent T-Tests							
				<i>t-tests significant at p <.05</i>			
		Has Primary Outcome Variable? Yes = Completer No = Non-Completer					
		N	M	SD	T	df	P
Age	Yes	976	22.63	2.129	8.899	1144	.000***
	No	170	25.88	4.667			
Skin Color	Yes	976	1.66	1.344	3.417	1139	.000***
	No	165	2.10	1.531			
Income	Yes	975	5.85	1.893	1.178	1138	0.239
	No	165	6.04	2.122			
*p<.05, **p<.01, ***p<.001							

Table 1b. Comparing Survey of Completers (N = 976) to Non-Completers (N = 170), Chi-Square Tests for Dichotomous Independent Variables						
				<i>Chi-Square test of independence</i>		
		Has Primary Outcome Variable? Yes = Completer No = Non-Completer				
		N		Chi-square	df	P
Gender I1				15.407	1	.001***
Male/TGM	Yes	695				
Female/TGF		273				
Male/TGM	No	94				
Female/TGF		72				
Race I4				18.683	1	.001***
White	Yes	873				
Non-white		103				
White	No	132				
Non-white		38				
*p<.05, **p<.01, ***p<.001						

The final group of study participants (N = 976) were a convenience sample of former U.S. college students who graduated in May or June 2022 who were above the age of 20 and who completed the online study survey.

3.8 Description of Research Instrumentation

This study used a survey developed by the Principal Investigator, Yolanda Alvarez, in consultation with the dissertation advisor, Dr. Barbara Wallace, Director of the Research Group on Disparities in Health Education (RGDH) and Professor of Health Education, at Teachers College, Columbia University. Some parts of the survey were tools previously used and adapted by fellows of the RGDH. The survey parts are described in this section, while the full survey appears in Appendix F.

Part I: Basic Demographics (BD-14)

The Part I: Basic Demographics (BD-14) scale was developed by Professor Barbara Wallace for use by the Research Group on Disparities in Health (RGDH) and was adapted for use in this study with college students. The Basic Demographics (BD-14) has been utilized in the past with other populations by RGDH fellows. The BD-14 scale created for this study contains 14 questions which included: gender, age, race/ethnicity, partner [yes/no], children [yes/no], sexual orientation, live with parents [yes/no], skin color tone, U.S. born [yes/no], other countries of origin, employment status, income, State of College or University, type of college/university attended – i.e. Predominantly White Institution [yes/no]—or a Historically Black College or University (HBCU), Hispanic Serving Institution (HSI), or Tribal College or University (TCU).

The data analysis plan includes: descriptive statistics, including means, standard deviations, minimum and maximum scores, frequencies, and percentages.

Part II. Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RPSDR-1)

The Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RPSDR-1) was used to assess the risk of providing socially desirable responses. It was created by Dr Barbara Wallace in studies in 2018 conducted by the Research Group on Disparities in Health (RGDH) and for ongoing use by the RGDH. It is used instead of the well-known 13-item measure of social desirability (i.e., Crowne & Marlowe, 1960), as this single item scale reduces the burden of time on study participants, being ideal for pandemic-era research. The item prompt and Likert rating scale follow:

1-I sometimes say things that I think will please people, or what I think they want to hear—versus the honest truth, which might be difficult or painful for other people to hear and accept, or might lead them to judge me harshly...

I rate myself on a scale of 0 to 10, as follows:

0	1	2	3	4	5	6	7	8	9	10
0-I am not like										10-I am like
this at all										this all the time

The data analysis plan includes: descriptive statistics, including means, standard deviations, minimum and maximum scores, frequencies, and percentages.

Part III: Personal Health Background and Body Mass Index (PHB-BMI-14)

The Personal Health Background and Body Mass Index (PHB-BMI-14) scale was created for use by the Research Group on Disparities in Health, being modified for particular studies. For this study, beyond obtaining COVID-19 health history and Body Mass Index, this version obtains ratings of physical health and mental/emotional health on a Likert scale (1=very poor to 5=excellent) for 5 time periods, as follows:

- **1-BEFORE the COVID-19 pandemic**—for academic year 2018-2019, or **my freshman year**
- **2-DURING the COVID-19 pandemic**—for spring semester of academic year 2019-2020, or the **second half of my sophomore year**
- **3- DURING the COVID-19 pandemic**—for academic year 2020-2021 or **my junior year**
- **4- DURING the COVID-19 pandemic**—for academic year 2021-2022 or **my senior year**
- **5- CURRENTLY**—especially in the **PAST THREE MONTHS**

The goal is to use multiple paired t-tests to compare the time periods of mean ratings of physical health and mental/emotional health. In addition, the tool permits descriptive statistics, including means, standard deviations, minimum and maximum scores, and frequencies and percentages.

Part IV: Perceived Social Support—For Before and During the COVID-19 Pandemic, and Currently (PSS-BD-COVID-19-P-C-5)

The Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the RGDH, created this new tool as modification to a common tool used by the Research Group on Disparities in Health (RGDH). Specifically, it is based on a prior tool used by Lian (2017) that provided a description of social support and then used 5 questions to assess social support. However, in the pandemic era, to reduce participant burden, a new one item version of the scale

was created by combining the 5 questions used in Lian (2017) into one item, while using a 5-option Likert scale: none= 0 people; low=at least 1 person; mid=at least 2 people; high=3-5 people; and very high=6 or more people.

For this study, participants are asked about social support for the 5 time periods described above under Part III; and, multiple paired t-tests are used to compare the time periods.

The tool permits descriptive statistics, including means, standard deviations, minimum and maximum scores, and frequencies and percentages.

Part V: Rating Level of Involvement in Romantic and Sexual Relationships Before and During the COVID-19 Pandemic—And Currently (RLIRSR-BD-COVID-19-C-5)

The Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the RGDH, created this new tool based on a review of the literature—for first time use in this study and ongoing use by the RGDH. The tool collects ratings on participants' level of involvement in romantic, intimate, serious dating, or sexual relationships, using a Likert Scale of 1-very low to 5-very high level of involvement.

For this study, participants are asked about romantic and sexual relationships for the 5 time periods described above under Part III; and, multiple paired t-tests are used to compare the time periods.

The tool permits descriptive statistics, including means, standard deviations, minimum and maximum scores, and frequencies and percentages.

Part VI: Extent of Impact from the COVID-19 Pandemic on Romantic and Sexual Relationships (EI-COVID-19-P-RSR-1)

This is a new scale created for this study by the Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the Research Group on Disparities in Health (RGDH)—and for use by the RGDH. It is based on the review of literature. The tool explores how the COVID-19 pandemic may have had a negative impact on participants developing, experiencing, or maintaining romantic, intimate, serious dating, or sexual relationships, using the following prompt and 0-5 Likert rating scale:

1-Thinking about your freshman, sophomore, junior and senior years in college, to what extent did the COVID-19 pandemic have a NEGATIVE IMPACT on your developing, experiencing, or maintaining romantic, intimate, serious dating, or sexual relationships?

0 ___ *No impact at all* 1 ___ *Very low impact* 2 ___ *Low impact* 3 ___ *Moderate impact*
4 ___ *High impact* 5 ___ *Very high impact*

The tool permits descriptive statistics, including means, standard deviations, minimum and maximum scores, and frequencies and percentages.

Part VII: Dose of Exposure to College-Based Sexual Assault Prevention Policies and Information (DECB-SAPPI-5)

This is a new scale created for this study by the Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the Research Group on Disparities in Health (RGDH)—and for use by the RGDH. It is based on a publication by Dills, et al (2016) on campus prevention strategies for sexual violence. Items 1-3 use a Likert scale ranging from 0-None at all to 5-Very High for level of exposure; and items 4 and 5 are scored 0-No and 1-Yes, as shown below:

1-Please rate your level of exposure to and familiarity with the sexual assault policy of the college or university you attended:

0-None at all 1-Very Low 2-Low 3-Moderate 4-High 5-Very High

2-To what extent were you exposed to messages about sexual assault policy, sexual assault prevention, or reporting sexual assault on your college campus or at your college/university (e.g., posters, flyers, emails, text messages, etc.)?

0-None at all 1-Very Low 2-Low 3-Moderate 4-High 5-Very High

3-To what extent were you exposed to messages about sexual assault policy, sexual assault prevention, or reporting sexual assault on your college campus or at your college/university MULTIPLE TIMES, or many times?

0-None at all 1-Very Low 2-Low 3-Moderate 4-High 5-Very High

4-Did you participate in a class, workshop or training of some kind about sexual assault, sexual assault prevention, or reporting sexual assault on your college campus or at your college/ university? 0__No 1__Yes

5- Did your campus have a marketing campaign or media campaign about sexual assault, preventing sexual assault, reporting sexual assault, or healthy sexuality?

0__No 1__Yes 0__Unsure

The items 1-3 permitted obtaining internal consistency, finding a Cronbach's Alpha of .829 for good internal consistency. The tool permits descriptive statistics, including means, standard deviations, minimum and maximum scores, and frequencies and percentages—to be presented in Chapter 4 Results.

Part VIII: Extent of Impact from the COVID-19 Pandemic on College's Sexual Assault Educational Strategies (EI-COVID-19-P-CSAES-1)

This is a new scale created for this study by the Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the Research Group on Disparities in Health (RGDH)—and for use by the RGDH. A single item uses the prompt and Likert scale scoring shown below:

1-Thinking about your years in college and the responsibility of your college or university to expose students to MULTIPLE messages on the college's sexual assault policy, sexual assault prevention, and sexual assault reporting, to what extent did the COVID-19 pandemic have a **NEGATIVE IMPACT on how well the college met their responsibility?**

0__No impact at all 1__Very low impact 2__Low impact 3__Moderate impact
4__High impact 5__Very high impact

The tool permits descriptive statistics, including means, standard deviations, minimum and maximum scores, and frequencies and percentages.

Part IX: Alcohol and Drug Use Screening (ADUS-2)

The Alcohol and Drug Use Screening (ADUS-2) tool was developed for use by members of the RGDH by Professor Barbara Wallace. This scale has just two items and permitted ascertaining drug and alcohol use by subjects. It has been used in prior studies (e.g., Bond, 2015). The items and scoring follow:

1-Do you drink alcohol?

Yes _____ No _____ I used to, but I stopped_____

2-Do you ever use any kind of drug to get high (e.g., marijuana, cocaine, heroin, methamphetamine, ecstasy, prescription pills, club drugs, etc...)?

Yes _____ No _____ I used to, but I stopped_____

The tool permits descriptive statistics, including means, standard deviations, minimum and maximum scores, and frequencies and percentages.

Part X: Having Sex and Using Drugs/Alcohol (HSUDA-1)

This explored the percentage of the time through one question asking what percentage of the time do you have sex when you and/or your partner have also used drugs and/or alcohol. This permits for descriptive statistics, including means, standard deviations, frequencies, and percentages.

Part XI: Condom Use and Safer Sexual Behaviors Scale—With Stage of Change, Self-Efficacy, and Pandemic Impact Sub-Scales (CUSSBS-WSOC-SE-PIS-12).

This scale was originally created by Sheba King and Dr. Barbara Wallace, Director of the RGDH for first time use in King (2012) and ongoing use by the RGDH. The name of the scale in

this study was changed from the Condom Use and Sexual Behavior Empowerment Scale (CUSBES), as in King (2012), to the Condom Use and Safer Sexual Behaviors Scale—With Stage of Change, Self-Efficacy, and Pandemic Impact Sub-Scales (CUSBS-WSOC-SE-PIS-12) in this study. King (2012) explored 4 risk behaviors, while this study does the same, with some change in language—adding for contemporary times “or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves.” King (2012) assessed 4 risk behaviors, using 4 subscales, while this study only uses the first 2 of 4 (and eliminating the adjective “empowerment” as the first word in each scale name, resulting in this study using: 1- Stage of Change to perform the 4 risk reduction behaviors (SOC-4); and 2- Self-Efficacy to perform the 4 risk reduction behaviors (SE-4) [i.e. eliminating 3- Empowerment Social Support to perform the 4 risk reduction behaviors (ESS-4); and Empowerment Role Models to perform the 4 risk reduction behaviors (ERM-4)]. This study, instead, adds a new subscale 3-Impact of the COVID-19 Pandemic for performing the 4 risk reduction behaviors (I-COVID-19-4).

King (2012) found the Condom Use and Sexual Behavior Empowerment Scale (CUSBES) had an overall Cronbach’s Alpha of .862, being very good, while the Empowerment Stage of Change Sub-Scale (ESOC-4) had Cronbach’s Alpha of .852 (very good), and the Empowerment Self-Efficacy Sub-Scale (ESE-4) had Cronbach’s Alpha of .720 (fair to good).

In the present internal consistency was investigated for all scales, including the 3rd new scale used in the present study, finding the following:

- Stage of Change to perform the 4 risk reduction behaviors (SOC-4)—Cronbach’s Alpha of .819 for good internal consistency
- Self-Efficacy to perform the 4 risk reduction behaviors (SE-4)—Cronbach’s Alpha of .821 for good internal consistency
- Impact of the COVID-19 Pandemic for performing the 4 risk reduction behaviors (I-COVID-19-4)—Cronbach’s Alpha of .845 for good internal consistency

The tool permits descriptive statistics, including means, standard deviations, minimum and maximum scores, and frequencies and percentages—to be presented in Chapter 4 Results.

Of note, the subscale # **2-Self-Efficacy to perform the 4 risk reduction behaviors (SE-4)**—based on 4 items (2, 5, 8, 11)—is the study outcome variable to be predicted by backward stepwise regression. This outcome variable is also explored in relation to other independent variables using Independent t-tests and Pearson Correlations.

3.9 The Data Treatment Plan

The following data analysis plans that **appear in bold** under each research questions will be used in this study:

1-What were their demographic characteristics (gender, age, race/ethnicity, partner [yes/no], children [yes/no], live with parents [yes/no], skin color tone, U.S. born [yes/no], employment status, type of college/university attended – i.e., Predominantly White Institution [yes/no])?

Part I: Basic Demographics (BD-14)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

2-To what extent were they at risk of providing socially desirable responses?

Part II: Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RPSDR-1)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

3-What was their personal health background (had COVID-19 [yes/no], Body Mass Index), and ratings of their physical health and mental health for each of 5 time periods (1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)? And, were there any significant differences across the 5 time periods?

Part III: Personal Health Background and Body Mass Index (PHB-BMI-14)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages; and paired t-tests

4-What did they report for their level of social support for each of 5 times periods (2018-2019/freshman year before the pandemic; 2019-2020/second semester of sophomore year during pandemic; 2020-2021/junior year during pandemic; 2021-2022/senior year during the pandemic;

and currently, especially the past 3 months? And, were there any significant differences across the 5 time periods?

Part IV: Perceived Social Support—For Before and During the COVID-19 Pandemic, and Currently (PSS-BD-COVID-19-P-C-5)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages; and paired t-tests

5-How did they rate their level of involvement in romantic, intimate, serious dating, or sexual relationships for each of 5 times periods (1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)? And, were there any significant differences across the 5 time periods?

Part V: Rating Level of Involvement in Romantic and Sexual Relationships Before and During the COVID-19 Pandemic—And Currently (RLIRSR-BD-COVID-19-C-5)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages; and paired t-tests

6-To what extent do they report a negative impact from the COVID-19 pandemic on their developing, experiencing, or maintaining romantic, intimate, serious dating, or sexual relationships?

Part VI: Extent of Impact from the COVID-19 Pandemic on Romantic and Sexual Relationships (EI-COVID-19-P-RSR-1)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

7-What was their dose of exposure to information, messages, or social marketing campaigns that were campus or college-based that covered sexual assault policy, sexual assault prevention, or the reporting of sexual assault—as well as to any class, workshop or training on these topics?

Part VII: Dose of Exposure to College-Based Sexual Assault Prevention Policies and Information (DECB-SAPPI-5)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

8-Given their years in college and the responsibility of their college to expose students to multiple messages on the college's sexual assault policy, sexual assault prevention, and sexual assault reporting, to what extent did they view the COVID-19 pandemic as having a negative impact on the college meeting their responsibility?

Part VIII: Extent of Impact from the COVID-19 Pandemic on College's Sexual Assault Educational Strategies (EI-COVID-19-P-CSAES-1)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

9-Did they report currently, or do they report previously using alcohol and drugs?

Part IX: Alcohol and Drug Use Screening (ADUS-2)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

10-If they have had sex, for what percentage of the time do they report having sex when they and/or their partner had also used alcohol or drugs?

Part X: Having Sex and Using Drugs/Alcohol (HSUDA-1)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

11-With regard to four safer sexual behaviors [i.e. asking my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); negotiating with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); refusing to have unprotected sex; having my own supply of condoms (or dental dams, or latex or nitrile gloves)], in what (sub-scale 1) stage of change were they for performing these behaviors, what was their (sub-scale 2) level of self-efficacy for performing them, and to what extent did the (sub-scale 3) pandemic have a negative impact on their learning how to or actually performing those behaviors?

Part XI: Condom Use and Safer Sexual Behaviors Scale—With Stage of Change, Self-Efficacy, and Pandemic Impact Sub-Scales (CUSBS-WSOC-SE-PIS-12)

Data Analysis Plan: Descriptive statistics, including means, standard deviations, frequencies, and percentages

Note: The subscale # 2-Self-Efficacy to perform the 4 risk reduction behaviors (SE-4)—based on 4 items (2, 5, 8, 11) in Part XI—is the study outcome variable

12-Given selected independent variables from the survey parts, were any significant relationships found with the study outcome variable of a higher self-efficacy to perform safer sexual behaviors?

Data Analysis Plan: Independent t-tests, Pearson Correlations

13-While controlling for social desirability, and using selected independent variables from the survey parts, what were the significant predictors of the study outcome variable of a higher self-efficacy to perform safer sexual behaviors?

Data Analysis Plan: Backward Stepwise Regression Analysis

3.10 Data Management

Qualtrics was the data collection platform utilized to collect the data on www.Qualtrics.com, and data was download it into SPSS 29.00 for statistical analysis.

3.11 Conclusion

This Chapter 3 provided a detailed description of the methods used in this study, which included information about the study design, procedural steps, recruitment of participants, instrumentation utilized, and data analysis plan.

Chapter 4 will provide the results of the data analysis.

Chapter 4: RESULTS

This chapter provides a detailed presentation of the study results. Findings are presented by research question and in table format.

Data Analysis Results by Study Question

4.1 Results for Research Question #1

What were their demographic characteristics (gender, age, race/ethnicity, partner [yes/no], children [yes/no], live with parents [yes/no], skin color tone, U.S. born [yes/no], employment status, type of college/university attended – i.e., Predominantly White Institution [yes/no])? (BD-14)

Part I: Basic Demographics (BD-14). The study sample used for final data analysis included 976 young adults over the age of 20 who graduated from a U.S. college in May or June of 2022 (N = 976). Chapter III provided details on the final sample, including a comparison of survey completers (N = 976) versus non-completers (N = 170).

The sample (N=976) identified as 71.2% male/transgender male (n = 695), 28% female/transgender female (n = 273), and 0.8% non-binary (n = 8). Reported age ranged from 20-49 with a mean age of 22.63 years (SD = 2.129, min = 20, max = 49). Among the study's sample, 95% identified as heterosexual (n = 927), 90.1% identified as White/ Caucasian/ European American (n = 879), 7.9% Black/African American (n=77), and 1.9% Latinx/Hispanic (n= 19). A full 99.5% reported that they were born in the United States (n = 971). Some 63% reported living with parents, guardians, or family (n = 615). Of the sample, 84.7% reported having a partner (n = 827) with 94.6% (n = 923) not having children.

See Table 2.

Table 2: Basic Demographics (BD-14) (N = 976)

	N	%
Gender (N = 976)		
Male/TGM	695	71.2
Female/TGF	273	28
Non-binary	8	0.8
Age (N = 976)		
20-24	842	86.2
25-29	122	12.5
30-34	6	0.6
35-39	5	0.5
40+	1	0.1
<i>[Mean age = 22.63; SD = 2.129; Min = 20; Max = 49]</i>		
Sexual Orientation (N = 976)		
Heterosexual	927	95
LGBTQ+	48	4.9
A sexual orientation not listed	1	0.1
Race/Ethnicity (N = 976)		
White/Caucasian/European American	879	90.1
Black/African American	77	7.9
Hispanic/Latino/Latinx	19	1.9
Asian	4	0.4
American Indian/Alaska Native	0	0
Native Hawaiian/Pacific Islander	2	0.2
Arab American/Middle Eastern	1	0.1
Skin Color (N = 976)		
1) White	733	75.1
2) Very Light	66	6.8
3) Light	50	5.1
4) Medium to Light	61	6.3
5) Medium to Dark	34	3.5
6) Dark	29	3
7) Very Dark	3	0.3
<i>[Mean skin color = 1.66; SD = 1.344; Min = 1; Max = 7]</i>		
Main or Steady Partner Status (N = 976)		
No	149	15.3
Yes	827	84.7

Children (<i>N</i> = 976)		
No	923	94.6
Yes	53	5.4
Living Situation (<i>N</i> = 976)		
Live with parents, guardians, or family	615	63
Live independently away from parents, guardians, or family	361	37
Born in the US (<i>N</i> = 976)		
Yes	971	99.5
No	5	0.5
Other Countries of Origin (<i>N</i> = 976)		
Japan	5	0.5
Andorra	1	0.1
Cambodia	1	0.1
Canada	1	0.1
Ethiopia	1	0.1

The mean annual household income was 5.85, which is closest to category 6 for \$100,000 to \$199,999 (SD = 1.893, min = 1, max = 11). Most participants attended a Predominately White Institution (90.4%, *n* = 882) and graduated in May/June of 2022 (89.1%, *n* = 870) and 10.9% graduated in the summer or fall of 2022 (*n* = 106)—being retained for study inclusion. Over half of respondents attended college or university in California (52.8%, *n* = 515). Of the sample, 81.5% were employed full time (*n* = 795) with 17.5% employed part time.

See Table 3.

Table 3: Background Characteristics (N = 976)

	N	%
Household Yearly Income (N = 976)		
1) Less than \$10,000	7	0.7
2) \$10,000 to \$19,000	14	1.4
3) \$20,000 to \$39,000	18	1.8
4) \$40,000 to \$49,000	96	9.8
5) \$50,000 to \$99,000	442	45.3
6) \$100,000 to \$199,000	158	16.2
7) \$200,000 to \$299,000	68	7
8) \$300,000 to \$399,999	53	5.4
9) \$400,000 to \$499,999	42	4.3
10) \$500,000 to \$799,999	51	5.2
11) \$800,000 or more	26	2.7
0) I don't know	1	0.1
<i>[Mean yearly income = 5.85; SD = 1.893; Min = 1; Max = 11]</i>		
Graduate from a College or University in the US (N = 976)		
Yes, I graduated in May/June of 2022	870	89.1
Yes, I graduated in Summer/Fall of 2022	106	10.9
Type of College or University Attend/Attended (N = 976)		
Predominantly White Institution (PWI)	882	90.4
Historically Black College or University (HBCU)	66	6.8
Hispanic Serving Institution (HSI)	17	1.7
Tribal College or University (TCU)	11	1.1
Top 3 States for College or University (N = 976)		
California	515	52.8
New York	62	6.4
Texas	49	5
Employment Status (N = 976)		
Full Time	795	81.5
Part Time	171	17.5
Per Diem	5	0.5
Currently Unemployed	5	0.5

4.2 Results for Research Question #2

To what extent did they present social desirability (0 to 10), or were at risk of providing socially desirable responses to survey questions? (SIR- RPSDR-1)

Part II: Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RPSDR-1). The mean risk of providing socially desirable responses was 5.76 (SD = 2.132, min = 0, max = 10), indicating a *moderate level of social desirability*.

See Table 4.

Table 4: Risk of Providing Socially Desirable Responses (N = 292)

	N	%
I sometimes say things that I think will please people, or what I think they want to hear—versus the honest truth, which might be difficult or painful for other people to hear and accept, or might lead them to judge me harshly... (N = 976)		
0 - I am not like this at all	17	1.7
1	39	4
2	54	5.5
3	43	4.4
4	55	5.6
5	104	10.7
6	310	31.8
7	168	17.2
8	121	12.4
9	52	5.3
10 - I am like this all the time	13	1.3
<i>[Mean risk of providing socially desirable responses = 5.76; SD = 2.132; Min = 0; Max = 10]</i>		

4.3 Results for Research Question #3

What was their personal health background (had COVID-19 [yes/no], Body Mass Index), and ratings of their physical health and mental health for each of 5 time periods (1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)? And, were there any significant differences when comparing the 5 time periods? (PHB-BMI-14)

Part III: Personal Health Background (PHB-BMI-14). The mean body mass index (BMI) was 20.31 (SD = 4.433, min = 7.14-underweight, max = 41.83-obese), which is within a normal weight range. Regarding responses about COVID-19, 50.1% of respondents (n = 489) indicated that they had (or currently have) COVID-19 within the past two years; and 17.4% indicated they had (or currently have) long COVID-19 (n = 170). Of the sample, 59.5% did not believe COVID-19 was a hoax (n = 581), whereas 40.5% were unsure if it was a hoax (n = 395); and, of note, those who believed it was a hoax were excluded from study participation.

See Table 5.

Table 5: Personal Health Background—Current and During Pandemic (N = 976)

	N	%
Past 2 years, had or currently have COVID-19 (N = 976)		
Yes	489	50.1
No	464	47.5
Not Sure	23	2.4
Had or currently have long COVID-19 (N = 976)		
Yes	170	17.4
No	738	75.6
Not Sure	68	7
Think COVID-19 is a hoax; it does not exist (N = 976)		
No	581	59.5
Not Sure	395	40.5

For overall physical health before the pandemic (or during freshman year), the mean was 3.81 (SD = 0.801, min = 1, max = 5) for closest to good. As a pattern of steady decline in physical health ratings from closest to good in their freshman year, consider the following: during their sophomore year of the pandemic, the mean physical health rating was 3.61 (SD = 0.776, min = 1, max = 5) for between fair and good; for their junior year during the pandemic, their mean physical health rating was 3.34 (SD = 0.960, min = 1, max = 5) for closest to fair; and, during their senior year of the pandemic, the mean rating for physical health was 3.29 (SD = 1.155, min = 1, max = 5) for closest to fair. By Spring of 2023, their current physical health rating was a mean of 3.66 (mean = 3.66, SD = 1.106, min = 1, max = 5) for between fair and good.

See Table 6.

Table 6: Physical Health Status Before Pandemic, During Pandemic, and Currently (N = 976)

	N	%
Physical Health Before COVID-19 Pandemic—Freshman Year (N = 976)		
1) Very Poor	8	0.8
2) Poor	33	3.4
3) Fair	276	28.3
4) Good	478	49
5) Excellent	181	18.5
<i>[Mean physical health freshman year = 3.81; SD = 0.801; Min = 1; Max = 5]</i>		
Physical Health During COVID-19 Pandemic—Sophomore Year (N = 976)		
1) Very Poor	7	0.7
2) Poor	67	6.9
3) Fair	319	32.7
4) Good	494	50.6
5) Excellent	89	9.1
<i>[Mean physical health sophomore year = 3.61; SD = 0.776; Min = 1; Max = 5]</i>		

Physical Health During COVID-19 Pandemic—Junior Year (N = 976)

1) Very Poor	40	4.1
2) Poor	149	15.3
3) Fair	303	31
4) Good	412	42.2
5) Excellent	72	7.4

[Mean physical health junior year = 3.34; SD = 0.960; Min = 1; Max = 5]

Physical Health During COVID-19 Pandemic—Senior Year (N = 976)

1) Very Poor	85	8.7
2) Poor	160	16.4
3) Fair	258	26.4
4) Good	337	34.5
5) Excellent	136	13.9

[Mean physical health senior year = 3.29; SD = 1.155; Min = 1; Max = 5]

Current Physical Health (N = 976)

1) Very Poor	32	3.3
2) Poor	81	8.3
3) Fair	289	29.6
4) Good	357	36.6
5) Excellent	217	22.2

[Mean current physical health = 3.66; SD = 1.016; Min = 1; Max = 5]

For overall mental health before the pandemic (or during freshman year), the mean was 3.83 (SD = 0.760, min = 1, max = 5) for closest to good. During the pandemic for sophomore year mean mental health was 3.54 (SD = 0.755, min = 1, max = 5) for between fair and good; during the pandemic for junior year the mental health mean rating was 3.39 (SD = 0.948, min = 1, max = 5) for between fair and good, but closer to fair; and during the pandemic for senior year the mental health mean was 3.369 (SD = 0.945, min = 1, max = 5) or between fair and good, but closer to a good rating. For Spring 2023, the current mental health rating was 3.59 (SD = 0.937, min = 1, max = 5) for between fair and good.

See Table 7.

**Table 7: Mental/Emotional Health Status Before Pandemic,
During Pandemic, and Currently (N = 976)**

	N	%
Mental Health Before COVID-19 Pandemic—Freshman Year (N = 976)		
1) Very Poor	6	0.6
2) Poor	26	2.7
3) Fair	265	27.2
4) Good	510	52.3
5) Excellent	169	17.3
<i>[Mean mental health freshman year = 3.83; SD = 0.760; Min = 1; Max = 5]</i>		
Mental Health During COVID-19 Pandemic—Sophomore Year (N = 976)		
1) Very Poor	2	0.2
2) Poor	65	6.7
3) Fair	398	40.8
4) Good	425	43.5
5) Excellent	86	8.8
<i>[Mean mental health sophomore year = 3.54; SD = 0.755; Min = 1; Max = 5]</i>		
Mental Health During COVID-19 Pandemic—Junior Year (N = 976)		
1) Very Poor	18	1.8
2) Poor	159	16.3
3) Fair	332	34
4) Good	358	36.7
5) Excellent	109	11.2
<i>[Mean mental health junior year = 3.39; SD = 0.948; Min = 1; Max = 5]</i>		
Mental Health During COVID-19 Pandemic—Senior Year (N = 976)		
1) Very Poor	34	3.5
2) Poor	153	15.7
3) Fair	282	28.9
4) Good	439	45
5) Excellent	68	7
<i>[Mean mental health senior year = 3.36; SD = 0.945; Min = 1; Max = 5]</i>		
Current Mental Health (N = 976)		
1) Very Poor	34	3.3
2) Poor	82	8.4
3) Fair	258	26.4
4) Good	476	48.8
5) Excellent	126	12.9
<i>[Mean current mental health = 3.59; SD = 0.937; Min = 1; Max = 5]</i>		

Paired sample t-tests involved 8 comparisons when examining physical health and then mental health across the 5 time periods of 1-before the pandemic/freshman year, 2-during the pandemic/sophomore year, 3-during the pandemic/junior year, 4-during the pandemic/senior year, and 5-currently in Spring 2023. The 8 comparisons necessitated using the Bonferroni Adjustment significance level of ($.05/8 = .006$) of $p < .006$.

First, for **physical health**, paired t-tests showed that: 1-*physical health before the pandemic/during freshman year* (mean = 3.81, SD = 1.801) was *significantly better than during the pandemic/sophomore year* (mean = 3.61, SD = 1.776, $t = 7.683$, $df = 975$, $p = .000$), 2-*significantly better than during the pandemic/ junior year* (mean = 3.34, SD = 0.960, $t = 12.284$, $df = 975$, $p = .000$), 3-*significantly better than during the pandemic/ senior year* (mean = 3.29, SD = 1.155, $t = 11.111$, $df = 975$, $p = .000$), and 4-*significantly better than Spring 2023/currently—even though it appeared to be starting to improve* (mean = 3.66, SD = 1.016, $t = 3.528$, $df = 975$, $p = .000$).

Second, for **mental health**, paired t-tests showed that: 1- *mental health before the pandemic/freshman year* (mean = 3.83, SD = 0.760) was *significantly better than during the pandemic/sophomore year* (mean = 3.54, SD = 0.755, $t = 10.544$, $df = 975$, $p = .000$), 2-*significantly better than during the pandemic/ junior year* (mean = 3.39, SD = 0.948, $t = 11.417$, $df = 975$, $p = .000$), 3-*significantly better than during the pandemic/ senior year* (mean = 3.36, SD = 0.945, $t = 11.710$, $df = 975$, $p = .000$), and 4-*significantly better than Spring 2023/currently—even though it appeared to be starting to improve* (mean = 3.59, SD = 0.937, $t = 5.958$, $df = 975$, $p = .000$).

See Table 8.

Table 8: Comparison of Health Before Pandemic, During Pandemic, and Currently (N = 976)

Health Type	Before Pandemic Versus During Pandemic and Current			t-tests		
	N	M	SD	T	df	p
Physical Health				7.683	975	.000** *
Before COVID-19 (Freshman Year)	976	3.81	1.801		975	.000**
During COVID-19 (Sophomore Year)	976	3.61	1.776	12.284		*
Before COVID-19 (Freshman Year)	976	3.81	1.801			
During COVID-19 (Junior Year)	976	3.34	0.960	11.111	975	.000** *
Before COVID-19 (Freshman Year)	976	3.81	0.801			
During COVID-19 (Senior Year)	976	3.29	1.155	3.528	975	.000** *
Before COVID-19 (Freshman Year)	976	3.81	0.801			
During COVID-19 (Current)	976	3.66	1.016	10.544	975	.000** *
Mental Health						
Before COVID-19 (Freshman Year)	976	3.83	0.760			
During COVID-19 (Sophomore Year)	976	3.54	0.755	11.417	975	.000** *
Before COVID-19 (Freshman Year)	976	3.83	0.760			
During COVID-19 (Junior Year)	976	3.39	0.948	11.710	975	.000** *
Before COVID-19 (Freshman Year)	976	3.83	0.760			
During COVID-19 (Senior Year)	976	3.36	0.945	5.958	975	.000** *
Before COVID-19 (Freshman Year)	976	3.83	0.760			
During COVID-19 (Current)	976	3.59	0.937			

*p<.05, **p<.01, ***p<.001

Note: All p values above .006 are considered non-significant, and only those below .006 are considered statistically significant.

Bonferroni Adjustment significance level of (.05/8 = .006) of p <.006.

4.4 Results for Research Question #4

What did they report for their level of social support for each of 5 times periods (2018-2019/freshman year before the pandemic; 2019-2020/second semester of sophomore year during pandemic; 2020-2021/junior year during pandemic; 2021-2022/senior year during the pandemic; and currently, especially the past 3 months)? And, where there any significant differences when comparing these time periods? (PSS-BD-COVID-19-P-C-5)

Part IV: Social Support (PSS-BD-COVID-19-P-C-5). For **social support** before the pandemic/freshman year, the mean was 3.02 (SD = 1.001, min = 1, max = 5) for closest to “I had at least 2 people like this in my life then --for *moderate level of social support*. During the pandemic/sophomore year, mean social support was 2.941 (SD = 0.967, min = 1, max = 5) for *closest to a moderate level of social support*. During the pandemic/junior year, mean social support was 3.12 (SD = 0.842, min = 1, max = 5) or *closest to a moderate level of social support*. During the pandemic/senior year, the mean social support was 3.089 (SD = 1.006, min = 1, max = 5) for *closest to a moderate level of social support*. In Spring 2023/currently, the social support mean was 2.94 (SD = 1.013, min = 1, max = 5) for *closest to moderate social support*.

See Table 9.

Table 9: Social Support Before Pandemic, During Pandemic, and Currently (N = 976)

	N	%
Social Support Before COVID-19 Pandemic—Freshman Year (N = 976)		
1) I had no one like this in my life then	96	9.8
2) I had at least 1 person like this in my life then	169	17.3
3) I had at least 2 people like this in my life then	356	36.5
4) I had 3-5 people like this in my life then	332	34
5) I had 6 or more people like this in my life then	23	2.4
<i>[Mean social support freshman year = 3.02; SD = 1.001; Min = 1; Max = 5]</i>		
Social Support During COVID-19 Pandemic—Sophomore Year (N = 976)		
1) I had no one like this in my life then	94	9.6
2) I had at least 1 person like this in my life then	189	19.4
3) I had at least 2 people like this in my life then	391	40.1
4) I had 3-5 people like this in my life then	286	29.3
5) I had 6 or more people like this in my life then	16	1.6
<i>[Mean social support sophomore year = 2.941; SD = 0.967; Min = 1; Max = 5]</i>		
Social Support During COVID-19 Pandemic—Junior Year (N = 976)		
1) I had no one like this in my life then	35	3.6
2) I had at least 1 person like this in my life then	168	17.2
3) I had at least 2 people like this in my life then	439	45
4) I had 3-5 people like this in my life then	313	32.1
5) I had 6 or more people like this in my life then	21	2.2
<i>[Mean social support junior year = 3.12; SD = 0.842; Min = 1; Max = 5]</i>		
Social Support During COVID-19 Pandemic—Senior Year (N = 976)		
1) I had no one like this in my life then	85	8.7
2) I had at least 1 person like this in my life then	160	16.4
3) I had at least 2 people like this in my life then	370	37.9
4) I had 3-5 people like this in my life then	317	32.5
5) I had 6 or more people like this in my life then	44	4.5
<i>[Mean social support senior year = 3.089; SD = 1.006; Min = 1; Max = 5]</i>		
Current Social Support (N = 976)		
1) I had no one like this in my life right now	94	9.6
2) I had at least 1 person like this in my life right now	182	18.6
3) I had at least 2 people like this in my life right now	449	46
4) I had 3-5 people like this in my life right now	186	19.1
5) I had 6 or more people like this in my life right now	65	6.7
<i>[Mean current social support = 2.94; SD = 1.013; Min = 1; Max = 5]</i>		

Paired sample t-tests involved 4 comparisons of level of **social support** across the 5 time periods of before the pandemic, necessitating using the Bonferroni Adjustment significance level of $(.05/4 = .0125)$ of $p < .0125$. Findings showed statistically significant differences ($t = 2.521$, $df = 975$, $p = .012$) in the paired sample t-tests comparing *social support before the COVID-19 pandemic/during freshman year* (mean = 3.02, SD = 1.101) versus *social support during the pandemic/during sophomore year* (mean = 2.94, SD = 0.967), indicating a decline in social support levels during the COVID-19 pandemic. And, there was a significant difference ($t = -2.958$, $df = 975$, $p = .003$) comparing *social support before the COVID-19 pandemic/during freshman year* versus *social support during the pandemic/during junior year* (mean = 3.12, SD = 0.842), indicating an increase in social support levels by the junior year of the pandemic.

See Table 10.

Table 10: Comparison of Social Support Before Pandemic, During Pandemic, and Currently (N = 976)

Social Support	Before Pandemic Versus During Pandemic and Current			<i>t</i> - tests		
	N	M	SD	T	df	p
				2.521	975	.012*
Before COVID-19 (Freshman Year)	976	3.02	1.001			
During COVID-19 (Sophomore Year)	976	2.94	0.967			
				-2.958	975	.003**
Before COVID-19 (Freshman Year)	976	3.02	1.001			
During COVID-19 (Junior Year)	976	3.12	0.842			
				-1.444	975	.149
Before COVID-19 (Freshman Year)	976	3.02	1.001			
During COVID-19 (Senior Year)	976	3.08	1.006			
				1.705	975	.088
Before COVID-19 (Freshman Year)	976	3.02	1.001			
During COVID-19 (Current)	976	2.94	1.013			

* $p < .05$, ** $p < .01$, *** $p < .001$

Note: All p values above .0125 are considered non-significant, and only those below .0125 are considered statistically significant.

Bonferroni Adjustment significance level of $(.05/4 = .0125)$ of $p < .0125$.

4.5 Results for Research Question #5

How did they rate their level of involvement in romantic, intimate, serious dating, or sexual relationships for each of 5 times periods (1-2018-2019/freshman year before the pandemic; 2-2019-2020/second semester of sophomore year during pandemic; 3-2020-2021/junior year during pandemic; 4-2021-2022/senior year during the pandemic; and, 5-currently, especially the past 3 months)? And, where there any significant differences when comparing these time periods? (RLIRSR-BD-COVID-19-C-5)

Part V: Involvement in Romantic, Intimate, Serious Dating, or Sexual Relationships

(RLIRSR-BD-COVID-19-C-5). Respondents had a mean level of **romantic involvement** as follows: 1-for before the pandemic/during freshman year the mean was 3.43 (SD = 0.893, min = 1, max = 5) for *between a moderate to high level of romantic involvement*; 2-during the pandemic/sophomore year the mean was 3.21(SD = 0.727, min = 1, max = 5) for *closest to a moderate level of romantic involvement*; 3-during the pandemic/junior year the mean was 3.06 (SD = 0.756, min = 1, max = 5) for a *moderate level of romantic involvement*; 4-during the pandemic/senior year the mean was 2.87 (SD = 1.001, min = 1, max = 5) for *closest to a moderate level of romantic involvement*; and, 5- Spring 2023/currently the mean was 3.16 (SD = 0.903, min = 1, max = 5) for *closest to a moderate level of romantic involvement—while appearing to improve*.

See Table 11.

**Table 11: Romantic Involvement Before Pandemic,
During Pandemic, and Currently (N = 976)**

	N	%
Romantic Involvement Before COVID-19 Pandemic—Freshman Year (N = 976)		
1) Very low	9	0.9
2) Low	108	11.1
3) Moderate	445	45.6
4) High	280	28.7
5) Very high	134	13.7
<i>[Mean romantic involvement freshman year = 3.43; SD = 0.893; Min = 1; Max = 5]</i>		
Romantic Involvement During COVID-19 Pandemic—Sophomore Year (N = 976)		
1) Very low	7	0.7
2) Low	126	12.9
3) Moderate	528	54.1
4) High	285	29.2
5) Very high	30	3.1
<i>[Mean romantic involvement sophomore year = 3.21; SD = 0.727; Min = 1; Max = 5]</i>		
Romantic Involvement During COVID-19 Pandemic—Junior Year (N = 976)		
1) Very low	12	1.2
2) Low	203	20.8
3) Moderate	491	50.3
4) High	257	26.3
5) Very high	13	1.3
<i>[Mean romantic involvement junior year = 3.06; SD = 0.756; Min = 1; Max = 5]</i>		
Romantic Involvement During COVID-19 Pandemic—Senior Year (N = 976)		
1) Very low	112	11.5
2) Low	205	21
3) Moderate	373	38.2
4) High	268	27.5
5) Very high	18	1.8
<i>[Mean romantic involvement senior year = 2.87; SD = 1.001; Min = 1; Max = 5]</i>		
Current Romantic Involvement (N = 976)		
1) Very low	38	3.9
2) Low	159	16.3
3) Moderate	443	45.4
4) High	278	28.5
5) Very high	58	5.9
<i>[Mean current romantic involvement = 3.16; SD = 0.903; Min = 1; Max = 5]</i>		

Paired sample t-tests involved 4 comparisons of level of romantic involvement across the 5 time periods, necessitating using the Bonferroni Adjustment significance level of ($.05/4 = .0125$) of $p < .0125$.

Paired sample t-tests showed that comparisons for level of romantic involvement were as follows: 1-*romantic involvement before the pandemic/during freshman year* (mean = 3.43, SD = 0.893) was *significantly higher than romantic involvement during pandemic/ sophomore year* (mean = 3.21, SD = 0.727, $t = 8.252$, $df = 975$, $p = .000$); 2- *romantic involvement before the pandemic/during freshman year was significantly higher than romantic involvement during pandemic/junior year* (mean = 3.06, SD = 0.756, $t = 9.598$, $df = 975$, $p = .000$); 3- *romantic involvement before the pandemic/during freshman year was significantly higher than romantic involvement during the pandemic/senior year* (mean = 2.87, SD = 1.001, $t = 11.306$, $df = 975$, $p = .000$); and, 4- *romantic involvement before the pandemic/during freshman year was significantly higher than romantic involvement Spring 2023/currently, while it appeared to be improving* (mean = 3.16, SD = 0.903, $t = 6.168$, $df = 975$, $p = .000$). These results indicate that respondents had *a decrease in romantic, intimate, serious dating, or sexual relationships during the COVID-19 pandemic -- as a pattern that remains current in Spring 2023 with some signs of improvement by Spring 2023.*

See Table 12.

Table 12: Comparison of Romantic Involvement Before Pandemic, During Pandemic, and Currently (N = 976)

Romantic Involvement	Before Pandemic Versus During Pandemic and Currently			<i>t</i> -tests		
	N	M	SD	T	df	p
				8.252	975	.000** *
Before COVID-19 (Freshman Year)	976	3.43	0.893			
During COVID-19 (Sophomore Year)	976	3.21	0.727			
				9.598	975	.000** *
Before COVID-19 (Freshman Year)	976	3.43	0.893			
During COVID-19 (Junior Year)	976	3.06	0.756			
				11.306	975	.000** *
Before COVID-19 (Freshman Year)	976	3.43	0.893			
During COVID-19 (Senior Year)	976	2.87	1.001			
				6.168	975	.000** *
Before COVID-19 (Freshman Year)	976	3.43	0.893			
During COVID-19 (Current)	976	3.16	0.903			

*p<.05, **p<.01, ***p<.001

Note: All p values above .0125 are considered non-significant, and only those below .0125 are considered statistically significant.

Bonferroni Adjustment significance level of (.05/4 = .0125) of p < .0125.

4.6 Results for Research Question #6

To what extent do they report a negative impact from the COVID-19 pandemic on their developing, experiencing, or maintaining romantic, intimate, serious dating, or sexual relationships? (EI-COVID-19-P-RSR-1)

Part VI: Extent of Impact from the COVID-19 Pandemic on Romantic and Sexual

Relationships (EI-COVID-19-P-RSR-1). The mean impact of the COVID-19 pandemic on respondents' romantic and sexual relationships was 2.71 (SD = 1.140, min = 0, max = 5) for *closest to moderate impact from the pandemic on romantic and sexual relationships.*

Of note, when combining the categories of moderate, high and very high, it was found that 62.7% (n=612) of the respondents endorsed these levels of impact on their romantic and sexual relationships.

See Table 13.

Table 13: Impact of COVID-19 Pandemic on Romantic and Sexual Relationships (N = 976)

	N	%
Thinking about your freshman, sophomore, junior, and senior years in college, to what extent did the COVID-19 pandemic have a NEGATIVE IMPACT on your developing, experiencing, or maintaining romantic, intimate, serious dating, or sexual relationships? (N = 976)		
0) No Impact at all	32	3.3
1) Very low impact	114	11.7
2) Low impact	218	22.3
3) Moderate impact	422	43.2
4) High	124	12.7
5) Very high impact	66	6.8
<i>[Mean impact level = 2.71; SD = 1.140; Min = 0; Max = 5]</i>		

4.7 Results for Research Question #7

What was their dose of exposure to information, messages, or social marketing campaigns that were campus or college-based that covered sexual assault policy, sexual assault prevention, or the reporting of sexual assault—as well as to any class, workshop or training on these topics? (DECB-SAPPI-5)

Part VII: Dose of Exposure to College-Based Sexual Assault Prevention Policies and Information (DECB-SAPPI-5). The DECB-SAPPI-5 scale had a Cronbach’s Alpha of .829, indicating a good level of internal consistency. The dose of exposure mean score was 2.738 (SD = 0.870, min = 0.00, max = 5.00) for *closest to a moderate level or dose of exposure to college-based sexual assault prevention policies and information*. Regarding participation in a class, workshop, or training about sexual assault, sexual assault prevention, or reporting sexual assault at their college/ university, 89.8% said yes (n = 876). In addition, 77.7% of respondents reported

there being a marketing campaign or media campaign about sexual assault, preventing sexual assault, reporting sexual assault, or healthy sexuality on their campus (n = 758).

See Table 14.

Table 14: Exposure to College-Based Sexual Assault Prevention Policies and Information (N = 976)

	N	%
<i>Dose of Exposure to College-Based Sexual Assault Prevention Policies and Information Scale Cronbach's Alpha (3 items) = .829</i> <i>[Mean = 2.738; SD = 0.870; min = 0.0; max = 5.00]</i>		
1 – Please rate your level of exposure to and familiarity with the sexual assault policy of the college or university you attended (N = 976)		
0) None at all	5	0.5
1) Very low	148	15.2
2) Low	231	23.7
3) Moderate	357	36.6
4) High	206	21.1
5) Very high	29	3
2 – To what extent were you exposed to messages about sexual assault policy, sexual assault prevention, or reporting sexual assault on your college campus or at your college/university (e.g., posters, flyers, emails, text messages, etc.)? (N = 976)		
0) None at all	8	0.8
1) Very low	77	7.9
2) Low	304	31.1
3) Moderate	384	39.3
4) High	175	17.9
5) Very high	28	2.9
3 – To what extent were you exposed to messages about sexual assault policy, sexual assault prevention, or reporting sexual assault on your college campus or at your college/university MULTIPLE TIMES, or many times? (N = 976)		
0) None at all	9	0.9
1) Very low	82	8.4
2) Low	287	29.4
3) Moderate	395	40.5
4) High	166	17
5) Very high	37	3.8

4 – Did you participate in a class, workshop, or training of some kind about sexual assault, sexual assault prevention, or reporting sexual assault on your college campus or at your college/ university? (N = 976)

0) No	100	10.2
1) Yes	876	89.8

5 – Did your campus have a marketing campaign or media campaign about sexual assault, preventing sexual assault, reporting sexual assault, or healthy sexuality? (N = 976)

0) No	82	8.4
1) Yes	758	77.7
Not sure	136	13.9

4.8 Results for Research Question #8

Given their years in college and the responsibility of their college to expose students to multiple messages on the college’s sexual assault policy, sexual assault prevention, and sexual assault reporting, to what extent did they view the COVID-19 pandemic as having a negative impact on the college meeting their responsibility? (EI-COVID-19-P-CSAES-1)

Part VIII: Impact of COVID-19 Pandemic on College Exposure to Sexual Assault

Information (EI-COVID-19-P-CSAES-1). The mean impact of the COVID-19 pandemic on respondents’ exposure to sexual assault information on their campus was 2.73 (SD = 1.083, min = 0, max = 5) for *closest to a moderate impact from the pandemic on exposure to sexual assault information on campus.*

Of note, when combining the categories for moderate, high and very high impact, 67% (n=654) had indicated such an impact of the COVID-19 pandemic on their exposure to sexual assault information on their campus.

See Table 15.

Table 15: Impact of COVID-19 Pandemic on College Exposure to Sexual Assault Information (N = 976)

	N	%
Thinking about your years in college and the responsibility of your college or university to expose students to MULTIPLE messages on the college’s sexual assault policy, sexual assault prevention, and sexual assault reporting, to what extent did the COVID-19 pandemic have a NEGATIVE IMPACT on how well the college met their responsibility? (N = 976)		
0) No Impact at all	31	3.2
1) Very low impact	104	10.7
2) Low impact	187	19.2
3) Moderate impact	479	49.1
4) High	123	12.6
5) Very high impact	52	5.3
<i>[Mean impact level = 2.73; SD = 1.083; Min = 0; Max = 5]</i>		

4.9 Results for Research Question #9

Did they report currently, or do they report previously using alcohol and drugs? (ADUS-2)

Part IX: Alcohol and Drug Use Screening (ADUS-2). Results indicated that 73.1% of respondents drink alcohol (n = 713) and 5.2% used to drink alcohol but stopped (n = 51).

Regarding drug use, only 13.4% of respondents indicated ever using any kind of drug to get high (n = 131) and 7.8% reported they used to but stopped (n = 76).

See Table 16.

Table 16: Alcohol and Drug Use Screening (N = 976)

	N	%
1 – Do you drink alcohol? (N = 976)		
0) No	212	21.7
1) Yes	713	73.1
2) I used to, but I stopped	51	5.2
2 – Do you ever use any kind of drug to get high (e.g., marijuana, cocaine, heroin, methamphetamine, ecstasy, prescription pills, club drugs, etc.)? (N = 976)		
0) No	769	78.8
1) Yes	131	13.4
2) I used to, but I stopped	76	7.8

4.10 Results for Research Question #10

If they have had sex, for what percentage of the time do they report having sex when they and/or their partner had also used alcohol or drugs? (HSUDA-1)

Part X: Having Sex and Using Drugs/Alcohol (HSUDA-1). The mean percentage of time respondents indicated that they or their partner used drugs and/or alcohol during sex was 2.82 (SD = 2.412, min = 0, max = 10) for *closest to 30% of the time*.

See Table 17.

Table 17: Drug/Alcohol Use During Sex (N = 976)

	N	%
What percentage of the time do you have sex when you and/or your partner have also used drugs and/or alcohol? (N = 976)		
0) 0% (never)	101	10.3
1) 10%	315	32.3
2) 20%	132	13.5
3) 30%	110	11.3
4) 40%	77	7.9
5) 50%	67	6.9
6) 60%	69	7.1
7) 70%	43	4.4
8) 80%	32	3.3
9) 90%	17	1.7
10) 100% (all the time)	6	0.6
N/A – I do not have sex	7	0.7
<i>[Mean percentage of time = 2.82; SD = 2.412; Min = 0; Max =10]</i>		

4.11 Results for Research Question #11

*With regard to four safer sexual behaviors [i.e. asking my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); negotiating with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); refusing to have unprotected sex; having my own supply of condoms (or dental dams, or latex or nitrile gloves)], in what (sub-scale 1) **stage of change** were they for performing these behaviors, what was their (sub-scale 2) **level of self-efficacy** for performing them, and to what extent did the (sub-scale 3) **pandemic have a negative impact** on their learning how to or actually performing those behaviors? CUSSBS-WSOC-SE-PIS-12)*

Part XI: Condom Use and Safer Sexual Behaviors Scale—With Stage of Change, Self-Efficacy, and Pandemic Impact Sub-Scales (CUSSBS-WSOC-SE-PIS-12).

For this Scale, the focus was on *the four risk reduction behaviors of: (1) asking my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); (2) negotiating with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); (3) refusing to have unprotected sex; (4) having my own supply of condoms (or dental dams, or latex or nitrile gloves).* The following 3 sub-scales produced Cronbach's Alphas and Global mean scores, as shown below.

Sub-scale # 1 Stage of Change (1-SOC) examined stage of change for performing the four risk reduction behaviors. The stages of change were defined as 1-Pre-Contemplation, "I am not thinking of doing this behavior at all" 2-Contemplation, "I am thinking about doing this behavior" 3-Preparation, "I am preparing to do this behavior" 4-Action, "I have been doing this behavior for less than six (6) months, and 5-Maintenance, "I have been doing this behavior for more than six (6) months. The **Sub-scale # 1 Stage of Change (1-SOC)** had a Cronbach's Alpha of .819 for good internal consistency. The SOC sub-scale is based on 4 items, 1, 4, 7, 10, and had a Global mean score of 2.07 (SD = 0.905, min = 1, max = 5.00) for stage 2 for the *contemplation stage—or thinking about doing the four risk reduction behaviors.*

Sub-Scale # 2 Self-Efficacy (2-SE) examined the level of self-efficacy for performing the four risk reduction behaviors (SE-4). Based on 4 items (2,5,8,11), and had a Cronbach's Alpha of .821 also indicating a good level of internal consistency. The **Sub-Scale # 2 Self-Efficacy (2-SE)** was based on 4 items, 2, 5, 8, 11, and had a Global mean score of 2.87

(SD=0.928, min = 0, max = 5.00) for closest to 3 for *closest to being 60% confident or having a moderate self-efficacy for ability to perform the four risk reduction behaviors.*

Of note, **Sub-Scale # 2 Self-Efficacy (2-SE)** provides for the study outcome variable of a higher self-efficacy to perform safer sexual behaviors.

Sub-Scale 3 # Pandemic Impact (3-PI) examined to what extent did the pandemic have a negative impact on their learning how to actually perform those behaviors. The **Sub-Scale 3 # Pandemic Impact (3-PI)** had a Cronbach’s Alpha of .845 for good internal consistency—while based on 4 items (3,6,9,12)—and showed a Global mean score of 2.35 (SD=0.951, min = 0 and max = 5.00) for closest to rating 2 for *closest to a low impact from the pandemic on learning how to actually perform the four risk reduction behaviors.*

See Table 18.

Table 18: Condom Use and Safer Sexual Behaviors (N = 976)

	N	%
<i>Stage of Change (1-SOC) Sub-Scale (items 1, 4, 7, 10) Cronbach’s Alpha = .819; [Global Mean = 2.071; SD = 0.905, min = 1, max = 5.00]</i>		
<i>Self-Efficacy (2-SE) Sub-Scale (items 2, 5, 8, 11) Cronbach’s Alpha = .821 [Global Mean = 2.87; SD = 0.928, min = 0, max = 5.00]</i>		
<i>Pandemic Impact (3-PI) Sub-Scale (items 3, 6, 9, 12) Cronbach’s Alpha =.845; [Global Mean = 2.351; SD = 0.951; min = 0; max = 5.00]</i>		

The 12 Condom Use and Safer Sexual Behaviors Scale Items

1 – When it comes to the behavior of ASKING my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves), check the following that most applies to you: (N = 976)

1) I am not thinking of doing this behavior at all	56	5.7
2) I am thinking about doing this behavior	302	30.9
3) I am preparing to do this behavior	297	30.4
4) I have been doing this behavior for less than six (6) months	164	16.8
5) I have been doing this behavior for more than six (6) months	157	16.1

[Item 1 Mean stage of change level = 2.07; SD = 1.161; Min = 1; Max = 5]

2 – When it comes to the behavior of ASKING my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves), how confident are you in performing this behavior? (N = 976)

0) 0% confident	8	0.8
1) 20% confident	110	11.3
2) 40% confident	236	24.2
3) 60% confident	357	36.6
4) 80% confident	154	15.8
5) 100% confident	111	11.4

[Item 2 Mean confidence level = 2.89; SD = 1.170; Min = 0; Max = 5]

3 – To what extent, if any, did the COVID-19 pandemic impact you're learning how to or actually performing the behavior of ASKING my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)? (N = 976)

0) No Impact at all	62	6.4
1) Very low impact	197	20.2
2) Low impact	289	29.6
3) Moderate impact	287	29.4
4) High	107	11
5) Very high impact	34	3.5

[Item 3 Mean impact level = 2.29; SD = 1.192; Min = 0; Max = 5]

4 – When it comes to the behavior of NEGOTIATING with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves), check the following that most applies to you: (N = 976)

1) I am not thinking of doing this behavior at all	44	4.5
2) I am thinking about doing this behavior	253	25.9
3) I am preparing to do this behavior	362	37.1
4) I have been doing this behavior for less than six (6) months	183	18.8
5) I have been doing this behavior for more than six (6) months	134	13.7

[Item 4 Mean stage of change level = 2.11; SD = 1.079; Min = 1; Max = 5]

5 – When it comes to the behavior of NEGOTIATING with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves), how confident are you in performing this behavior? (N = 976)

0) 0% confident	4	0.4
1) 20% confident	91	9.3
2) 40% confident	280	28.7
3) 60% confident	365	37.4
4) 80% confident	146	15
5) 100% confident	90	9.2

[Item 5 Mean confidence level = 2.85; SD = 1.092; Min = 0; Max = 5]

6 – To what extent, if any, did the COVID-19 pandemic impact your learning how to or actually performing the behavior of NEGOTIATING with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)? (N = 976)

0) No Impact at all	38	3.9
1) Very low impact	155	15.9
2) Low impact	313	32.1
3) Moderate impact	331	33.9
4) High	120	12.3
5) Very high impact	19	1.9

[Item 6 Mean impact level = 2.41; SD = 1.075; Min = 0; Max = 5]

7 – When it comes to the behavior of REFUSING to have unprotected sex, check the following that most applies to you: (N = 976)

1) I am not thinking of doing this behavior at all	95	9.7
2) I am thinking about doing this behavior	313	32.1
3) I am preparing to do this behavior	292	29.9
4) I have been doing this behavior for less than six (6) months	155	15.9
5) I have been doing this behavior for more than six (6) months	121	12.4

[Item 7 Mean stage of change level = 1.89; SD = 1.164; Min = 1; Max = 5]

8 – When it comes to the behavior of REFUSING to have unprotected sex, how confident are you in performing this behavior? (N = 976)

0) 0% confident	10	1
1) 20% confident	104	10.7
2) 40% confident	327	33.5
3) 60% confident	290	29.7
4) 80% confident	147	15.1
5) 100% confident	98	10

[Item 8 Mean confidence level = 2.77; SD = 1.164; Min = 0; Max = 5]

9 – To what extent, if any, did the COVID-19 pandemic impact your learning how to or actually performing the behavior of REFUSING to have unprotected sex? (N = 976)

0) No Impact at all	61	6.3
1) Very low impact	156	16
2) Low impact	271	27.8
3) Moderate impact	307	31.5
4) High	145	14.9
5) Very high impact	36	3.7

[Mean impact level = 2.44; SD = 1.209; Min = 0; Max = 5]

10 – When it comes to the behavior of having my own supply of condoms (or dental dams, or latex or nitrile gloves), check the following that most applies to you: (N = 976)

1) I am not thinking of doing this behavior at all	42	4.3
2) I am thinking about doing this behavior	215	22
3) I am preparing to do this behavior	368	37.7
4) I have been doing this behavior for less than six (6) months	193	19.8
5) I have been doing this behavior for more than six (6) months	157	16.1

[Mean stage of change level = 2.21; SD = 1.091; Min = 1; Max = 5]

11 – When it comes to the behavior of having my own supply of condoms (or dental dams, or latex or nitrile gloves), how confident are you in performing this behavior? (N = 976)

0) 0% confident	4	0.4
1) 20% confident	89	9.1
2) 40% confident	281	28.8
3) 60% confident	295	30.2
4) 80% confident	183	18.8
5) 100% confident	123	12.6

[Mean confidence level = 2.96; SD = 1.176; Min = 0; Max = 5]

12 – To what extent, if any, did the COVID-19 pandemic impact your learning how to or actually performing the behavior of having my own supply of condoms (or dental dams, or latex or nitrile gloves)? (N = 976)

0) No Impact at all	65	6.7
1) Very low impact	185	19
2) Low impact	264	27
3) Moderate impact	365	37.4
4) High	74	7.6
5) Very high impact	22	2.3

[Mean impact level = 2.27; SD = 1.125; Min = 0; Max = 5]

4.12 Results for Research Question #12

Given selected independent variables from the survey parts, were any significant relationships found with the study outcome variable of a higher self-efficacy to perform safer sexual behaviors?

This research question was answered by utilizing independent t-tests and Pearson Correlations. The results for each set of analyses are presented below, while exploring

relationships with the Sub-Scale # 2 Self-Efficacy (2-SE) score, which provides for the study outcome variable of a higher self-efficacy to perform safer sexual behaviors.

Part XIII: Independent T-tests Comparing Groups on the Outcome Variable of Having Higher Self-efficacy to Perform Safer Sexual Behaviors. In total, nine groups were compared on the *outcome variable of having higher self-efficacy to perform safer sexual behaviors*, while encompassing the four risk reduction behaviors captured via **Sub-Scale # 2 Self-Efficacy (2-SE)** discussed previously. Thus, the Bonferroni Adjustment Significance (.05/9, $p = .006$) level was $p < .006$. The following group comparisons were significant:

- When comparing survey respondents who were male (mean = 2.80, SD = 0.887) to those who were female (mean = 3.04 SD = 1.014), there was a significant difference ($t = -3.451$, $df = 444.4$, $p = .000$), indicating *females had higher self-efficacy to perform safer sexual behaviors* ($p < .006$, Bonferroni Adjustment Significance level).
- When comparing survey respondents who do not live independently (mean = 2.73, SD = 0.919) to those who do live independently from parents/family (mean = 3.10 SD = 0.898), there was a significant difference ($t = -6.092$, $df = 974$, $p = .000$), indicating *survey respondents who lived independently had higher self-efficacy to perform safer sexual behaviors* ($p < .006$, Bonferroni Adjustment Significance level).
- When comparing survey respondents who did not have a COVID-19 diagnosis in the past two years (mean = 2.78, SD = 0.971) to those who did have a COVID-19 diagnosis (mean = 2.95 SD = 0.882), there was a significant difference ($t = -2.913$, $df = 974$, $p = .002$), indicating *survey respondents who did have a COVID-19 diagnosis in the past two years had higher self-efficacy to perform safer sexual behaviors* ($p < .006$, Bonferroni Adjustment Significance level).

- When comparing survey respondents whose college did not have a sexual assault media campaign (mean = 2.60, SD = 0.926) to those whose college did have a sexual assault media campaign (mean = 2.94 SD = 0.915), there was a significant difference ($t = -4.869$, $df = 974$, $p = .000$), indicating *survey respondents whose college did have a sexual assault media campaign had higher self-efficacy to perform safer sexual behaviors* ($p < .006$, Bonferroni Adjustment Significance level).
- When comparing survey respondents who did not currently use alcohol (mean = 3.03, SD = 1.038) to those who did currently use alcohol (mean = 2.81 SD = 0.878), there was a significant difference ($t = 3.344$, $df = 408.1$, $p = .002$), indicating *survey respondents who did not currently use alcohol had higher self-efficacy to perform safer sexual behaviors* ($p < .006$, Bonferroni Adjustment Significance level).

See Table 19.

Table 19: Independent T-tests Comparing Groups on the Higher Self-Efficacy to Perform Safer Sexual Behaviors Outcome Variable

	Higher Burnout			t-tests		
	N	M	SD	T	df	p
Gender				-	444.4	
				3.451		.000** *
Male	695	2.80	0.887			
Female	273	3.04	1.014			
Race (White)				1.789	155.3	.076
No	103	2.99	0.671			
Yes	873	2.85	0.954			
Marital Status (Has Partner)				-	166.9	.985
				0.019		
No	149	2.87	1.392			
Yes	827	2.87	0.819			
Lives Independently				-	974	.000**
				6.092		*

No	615	2.73	0.919			
Yes	361	3.10	0.898			
COVID-19 Diagnosis				-	974	.002**
				2.913		
No	462	2.78	0.971			
Yes	514	2.95	0.882			
Attended Sexual Assault Class/Workshop				-	974	.083
				1.737		
No	100	2.72	0.907			
Yes	876	2.89	0.930			
College Had Sexual Assault Media Campaign				-	974	.000**
				4.869		*
No	218	2.60	0.926			
Yes	758	2.94	0.915			
Current Alcohol Use				3.344	408.1	.002**
No	263	3.03	1.038			
Yes	713	2.81	0.878			
Current Drug Use				0.301	210	.763
No	845	2.87	0.958			
Yes	131	2.85	0.714			

*p<.05, **p<.01, ***p<.001 Bonferroni Adjustment Significance (.05/9, p = .006)

Note: All p values above .006 are considered non-significant, and only those below .006 are considered statistically significant.

Pearson’s Correlations Examining Associations with the Outcome Variable of Having Higher Self-efficacy to Perform Safer Sexual Behaviors. Correlations between 39 independent variables were examined with the primary **outcome variable of having higher self-efficacy to perform safer sexual behaviors**. Thus, the Bonferroni Adjustment Significance (.05/39, p = .001) level was $p < .001$.

Significant correlations showed that the **higher the self-efficacy to perform safer sexual behaviors**, then the:

- **Higher** the age of an individual ($r = 0.157, p = .000$)
- **Higher** the income of an individual ($r = 0.323, p = .000$)
- **Lower** the rating for physical health during junior year ($r = -0.159, p = .000$)

- **Lower** the rating for physical health during senior year ($r = -0.208, p = .000$)
- **Lower** the rating for current physical health ($r = -0.106, p = .000$)
- **Lower** the rating for mental health during junior year ($r = -0.148, p = .000$)
- **Lower** the rating for mental health during senior year ($r = -0.131, p = .000$)
- **Lower** the level of social support before COVID-19 ($r = -0.137, p = .000$)
- **Lower** the level of social support during sophomore year ($r = -0.176, p = .000$)
- **Lower** the level of social support during junior year ($r = -0.209, p = .000$)
- **Lower** the level of social support during senior year ($r = -0.231, p = .000$)
- **Lower** the level of current social support ($r = -0.223, p = .000$)
- **Higher** the level of romantic involvement before COVID-19 ($r = 0.219, p = .000$)
- **Higher** the level of romantic involvement during sophomore year ($r = 0.140, p = .000$)
- **Higher** the level of current romantic involvement ($r = 0.117, p = .000$)
- **Higher** the level of exposure to sexual assault information ($r = 0.285, p = .000$)
- **Higher** the use of alcohol/drug use during sex ($r = 0.108, p = .000$)

Of special note, there were strong positive significant correlations, showing that the **higher** the self-efficacy to perform safer sexual behaviors, then the:

- **Higher** the stage of change for asking to use condoms ($r = 0.624, p = .000$)
- **Higher** the stage of change for negotiating condoms ($r = 0.572, p = .000$)
- **Higher** the stage of change for refusing unprotected sex ($r = 0.476, p = .000$)
- **Higher** the stage of change for having condom supply ($r = 0.614, p = .000$)
- **Higher** the stage of change for safer sex ($r = 0.709, p = .000$)

See Table 20.

Table 20: Correlations for Selected Independent Variables with Higher Self-Efficacy to Perform Safer Sexual Behaviors

Selected Variables	Higher Self-Efficacy to Perform Safer Sexual Behaviors	
	Pearson's R	p
Age	0.157	.000***
Skin Color	0.059	.064
Income	0.323	.000***
BMI (Body Mass Index)	-0.015	.630
Physical Health Before COVID-19	0.059	.064
Physical Health During Sophomore Year	-0.044	.172
Physical Health During Junior Year	-0.159	.000***

Physical Health During Senior Year	-0.208	.000***
Current Physical Health	-0.106	.000***
Mental Health Before COVID-19	0.043	.181
Mental Health During Sophomore Year	-0.040	.211
Mental Health During Junior Year	-0.148	.000***
Mental Health During Senior Year	-0.131	.000***
Current Mental Health	-0.039	.219
Social Support Before COVID-19	-0.137	.000***
Social Support During Sophomore Year	-0.176	.000***
Social Support During Junior Year	-0.209	.000***
Social Support During Senior Year	-0.231	.000***
Current Social Support	-0.223	.000***
Romantic Involvement Before COVID-19	0.219	.000***
Romantic Involvement During Sophomore Year	0.140	.000***
Romantic Involvement During Junior Year	-0.011	.732
Romantic Involvement During Senior Year	-0.066	.040*
Current Romantic Involvement	0.117	.000***
COVID-19 Impact on Romantic Involvement	-0.013	.686
Exposure to Sexual Assault Information	0.285	.000***
COVID-19 Impact on College Sexual Assault Information	-0.025	.444
Alcohol/Drug Use During Sex	0.108	.000***
Stage of Change, Asking to Use Condoms	0.624	.000***
COVID-19 Impact on Asking to Use Condoms	0.025	.439
Stage of Change, Negotiating Condoms	0.572	.000***
COVID-19 Impact on Negotiating Condoms	0.027	.405
Stage of Change, Refusing Unprotected Sex	0.476	.000***
COVID-19 Impact on Refusing Unprotected Sex	0.047	.143
Stage of Change, Having Condom Supply	0.614	.000***
COVID-19 Impact on Having Condom Supply	-0.025	.431
Stage of Change, Safer Sex	0.709	.000***
COVID-19 Impact on Safer Sex	0.023	.476
Risk of Providing Socially Desirable Responses	0.060	.062

*p<.05, **p<.01, ***p<.001 Bonferroni Adjustment Significance (.05/39, p = .001)

Note: All p values above .002 are considered non-significant, and only those below .001 are considered statistically significant.

4.13 Results for Research Question #13

*While controlling for social desirability, and using selected independent variables from the survey parts, what were the significant predictors of the **study outcome variable of a higher self-efficacy to perform safer sexual behaviors?***

For the purposes of this study, the outcome variable of interest was having **higher self-efficacy to perform safer sexual behaviors**, which was explored via backward stepwise regression analysis, while controlling for socially desirable responses.

Independent variables. After reviewing descriptive statistics, including dichotomizing some variables where indicated (e.g., if has children or not), the following **23 independent variables** were selected for inclusion in the backwards stepwise regression model: 1-gender; 2-if White (yes/no—dichotomous variable); 3-if has partner (yes/no—dichotomous variable); 4-if lives independently (yes/no—dichotomous variable); 5-had/has COVID-19 in past 2 years (yes/no—dichotomous variable); 6-if attended sexual assault class/workshop (yes/no—dichotomous variable); 7-if college had sexual assault media campaign (yes/no—dichotomous variable); 8-if currently drinks alcohol (yes/no—dichotomous variable); 9-if currently uses drugs (yes/no—dichotomous variable); 10-age (continuous variable); 11-skin color (continuous variable); 12-annual household income (continuous variable); 13- Body Mass Index (BMI—continuous variable); 14- current physical health status (continuous variable); 15-current mental health status (continuous variable); 16-current social support (continuous variable); 17-current romantic involvement (continuous variable); 18-impact from COVID on romantic involvement (continuous variable); 19-exposure to sexual assault information on campus (continuous variable); 20-impact from COVID on college sexual assault information (continuous variable); 21-alcohol/drug use during sex (continuous variable); 22-safer sex stage of change (continuous variable); and, 23- COVID impact on safer sex (continuous variable).

Part XIV: Backwards stepwise regression. The model began with the above list of 23 independent variables in one regression model. Each time the model was re-run, the variable with the weakest association with the outcome variable (i.e., having higher self-efficacy to perform safer sexual behaviors) was removed. Using the $p < .05$ level of statistical significance, the backward stepwise program repeated the elimination process, doing so until only those variables that were statistically significant were left in the regression model.

Liu (2022) has discussed the selection of stepwise regression. A stepwise regression can determine the “greatest impact on the dependent variable” by testing the selected variables “one by one” (p.23). This can support eliminating the variable if it is no longer significant. Stepwise regression analysis supports inclusion and rejection of variables. An “F-test is performed at each step” to support a distinction among the variables so as to indicate “only variables that have significant impact on the dependent variable” (Liu, J., 2022, p.23).

According to Del Serrone and Moretti (2023), a stepwise regression helps to “identify the relevant variables” that should be included as “optimal predictors” in the “multiple regression models” for the study (p.1). This can support more targeted analysis. A stepwise regression “adds or removes independent variables one at a time” by using the statistically significant level equal to 0.05” (p.4). Further, it is not a perfect procedure. It “does not always select the best combination of variables” so additional statistical analysis has to be performed (Del Serrone & Moretti, 2023, p.4).

Thayer (2002) asserted the benefit of backward stepwise regression is that it “builds a prediction model from the top down” (p.2). The model then eliminates variables in an attempt to build a prediction model. A weakness of stepwise regression is it may only use specific combinations. It can be used to answer the research question “can a specific combination of

independent variables predict or explain the variance of a dependent variable;” however, it may also exclude combinations that could be useful (p.2). The combinations are automated given the model. The problems include “it cannot be used to confirm whether a given model is good” and the selected model may not have the “highest R2” (Thayer J., 2002, p.5).

Finally, because there are a large number of independent variables being used in this study’s backward stepwise regression model there is the risk of overfitting, as per Babyak (2004).

Controlling for social desirability. The “risk of providing socially desirable responses” variable was the forced into the model at every step as a control variable, regardless of the significance level. The purpose of this decision was to effectively control for social desirability within the regression model.

Backward stepwise regression results. The results of the backwards stepwise regression for this study generated the following, while controlling for social desirability, finding that **having higher self-efficacy to perform safer sexual behaviors** was significantly predicted by:

- **Higher** age (B = 0.038, p = .000)
- **Higher** income (B = 0.074, p = .000)
- **Higher** BMI (B = 0.010, p = .024)
- **Lower** level of social support (B = -0.164, p = .000)
- **Higher** level of romantic involvement—current (B = 0.096, p = .000)
- **Higher** exposure to sexual assault information (B = 0.089, p = .000)
- **Lower** level of alcohol/drug use during sex (B = -0.129, p = .001)
- **Higher** stage of change for safer sex (B = 0.631, p = .000)

It was found that, according to this model, 56.4% of the variance was predicted ($R^2 = 0.568$, Adjusted $R^2 = 0.564$) by the factors above.

See Table 21.

Table 21: Backwards Stepwise Regression Predicting Higher Self-Efficacy to Perform Safer Sexual Behaviors

Variables	B	SE of B	P
Higher Age	0.038	0.010	.000***
Higher Income	0.074	0.012	.000***
Higher BMI (Body Mass Index)	0.010	0.005	.024*
Lower Social Support	-0.164	0.021	.000***
Higher Romantic Involvement—current	0.096	0.025	.000***
Higher Exposure to Sexual Assault Information	0.089	0.025	.000***
Lower Alcohol/Drug Use During Sex	-0.129	0.009	.001**
Higher Stage of Change for Safer Sex	0.631	0.025	.000***

* $p < .05$, ** $p < .01$, *** $p < .001$; R^2 (0.568); Adjusted R^2 (0.56) – meaning 56.4% of variance was explained by this model

$F = 138.861$, $p < .001$

4.14 Conclusion

This chapter has presented the results of quantitative data analysis through text and tables.

Next, Chapter V will present a discussion of the results, implications and recommendations, study limitations, and final conclusions.

Chapter 5: DISCUSSION, IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSION

This chapter will present a discussion of findings, as well as implications and recommendations that follow from the findings. Also, there will be a presentation of the limitations of this study and a final conclusion.

5.1 Discussion of Results

The present study is unique historically by attempting to capture the experiences of college students whose years within the university overlapped with the once-in-a-century event of a pandemic—specifically the COVID-19 pandemic. Further, the study used many new measures designed just for this study and the pandemic era, leading to there being limited comparisons with other studies.

The demographics of the sample may be compared to another pandemic-era study that also examined findings for before the pandemic, during the pandemic and currently in the Spring of 2023: i.e., those of Radcliffe (2023) who also used several of the same study measures, but with a very different sample and focus. The present study had a nearly all White sample (90.1%) of recent college graduates (N=976) with a mean age of 22.63 years with 71.2% male, 99.55% born in the U.S., and 63% living with parents/family with an annual household income mean of \$100,000 to \$199,999. In contrast, in a study focused on knowledge of U.S. physical activity and dietary guidelines, Radcliffe (2023) had a sample (N=470) that was all Black (100%) with a mean age of 33 years with 53% female, 47% male, 97% U.S. born with an annual household income mean of \$50,000 to \$99,999—even though 76% were employed adults. Given the racial differences in the two samples, the lower income in the Radcliffe (2023) sample is not surprising.

Both the present study sample and the Radcliffe (2023) sample had nearly identical mean scores for social desirability—being moderate for level of social desirability, while using the same measure in both studies.

Discussion of Findings on Physical and Mental Health

Both this study and Radcliffe (2023) found a healthy, normal Body Mass Index. In the present study, 50.1% of respondents (n = 489) reported having had COVID-19 within the past two years; and 17.4% indicated having had long COVID-19 (n = 170). Radcliffe (2023) found a higher 68.5% reported having had COVID-19 within the past two years; and, a similar 20.9% indicated having had long COVID-19. These differences in having had COVID-19 in the past two years across the two studies are reflective of other data, given how the present study had a nearly all White sample and Radcliffe (2023) had an all-Black sample. For example, Whittington et al. (2023) discussed how data on COVID-19 hospitalization rates were “disproportionately higher among Black and Hispanic/ Latino patients, compared to White patients”—and despite “hospitalization rates” having fluctuated “throughout the first year of the pandemic, racial and ethnic disparities persisted” (p.1). This study’s comparison to Radcliffe (2023) adds to the literature on “the disparate burden of COVID-19 on racial and ethnic minoritized populations.” (Whittington et al., 2023, p.1).

Also, using the same measure, the present study found physical health before the pandemic (or during freshman year) was a mean of 3.81, (SD = 0.801, min = 1, max = 5) for closest to good, while Radcliffe (2023) found a lower before pandemic mean health rating of 3.27, (SD = 1.090). Again, given racial health disparities in the U.S. before the pandemic, this difference is expected. For currently, or in Spring 2023 and especially the past 3 months, the

present study found physical health to be a mean of 3.66 (mean = 3.66, SD = 1.106, min = 1, max = 5) for between fair and good. Radcliffe (2023) found that by Spring 2023 or currently, and especially the past 3 months, the mean ratings was a lower 3.21 (SD =1.106). Again, the all Black sample of Radcliffe (2023) appeared to have a lower rating of physical health in Spring 2023 in comparison to the present study's nearly all White sample. It is possible that this is explained by the large gap in age between the present study's college sample and the adult sample in the Radcliffe (2023) study.

When examining ratings of mental/emotional health using the same tool, both studies examined multiple time periods, once again. Before the pandemic, this study's nearly all White sample had a mean of 3.83 (SD = 0.760, min = 1, max = 5) for closest to good mental health, while Radcliffe (2023) found with an all-Black sample a mean of 3.30 (SD=1.042) for closest to fair mental/emotional health. By Spring of 2023 or currently, the present study found the current mental health rating was 3.59 (SD = 0.937, min = 1, max = 5) for between fair and good, while Radcliffe (2023) found a mean for currently of 3.20, (SD =.993) for closest to fair mental/emotional health.

Nosek (2023) cited findings from a systematic review that indicated “that the mental health of college students between the ages of 18 and 25 was disparately impacted by the pandemic” across the United Kingdom (p. 78). Similarly, a study in China found ‘mental health problems, including anxiety and depression, were widespread among Chinese college students during the pandemic’ –with evidence of a negative impact on college students, globally (p. 79). Nosek (2023) found that Black, Indigenous and People of Color (BIPOC) students “who experienced prejudice and/or discrimination during the pandemic reported the highest level of pandemic-related concerns” – such that the pandemic had “a disparate impact on college students

with marginalized identities” (p. 88). What was recommended was for “institutions of higher education to respond to the mental health crisis being faced by young people in the United States” (p. 89).

It is possible that the present study having a nearly all White sample permitted findings of mental health in the fair to good range. If the present study had a larger representation of BIPOC students it is possible that lower ratings of mental health may have been found. In support of this, consider how Radcliffe (2023) found with an all Black sample ratings of mental/emotional health that were closest to fair—being lower than what was found in the present study.

The comparison of this study’s nearly all White sample and the all-Black sample of Radcliffe (2023) contributes to a large body of literature. As per Neighbors et al. (2023), while it was 37 years ago that Heckler’s “Secretary’s Task Force on Black and Minority Health” report called attention to what has been described as a ‘national paradox’ involving “persistent Black-White health disparities despite overall health improvements for the nation” (p. 1); this follows from how updates since the Heckler Report have essentially “reached the same conclusion” (p. 1); this disturbing conclusion supported by the above comparison of this study to that of Radcliffe (2023) is that Black Americans have “continued to exhibit poorer health in comparison to White Americans” (Neighbors et al., 2023, p.1).

Discussion of Comparisons Across Time Periods

Again, using the same measure, both this study and the Radcliffe (2023) compared ratings of physical health status across multiple time periods, using multiple paired t-tests—while this study used 5 time periods and Radcliffe (2023) used 3 time periods. The present study found all comparisons to be significant, such that physical health before the pandemic/during freshman

year was significantly better than during the pandemic/sophomore year, significantly better than during the pandemic/ junior year; significantly better than during the pandemic/ senior year, and significantly better than Spring 2023/currently—even though it appeared to be starting to improve by Spring 2023. Similarly, Radcliffe (2023) found two of three comparisons to show statistically significant differences where a comparison of physical health status before the COVID-19 pandemic versus during the pandemic showed better physical health before the COVID-19 pandemic; and, a comparison for during the pandemic versus ratings currently showed better physical health currently. Both studies highlight the negative impact of the pandemic on physical health.

Mental health findings may also be compared to Radcliffe (2023). First, the present study found statistically significant difference when comparing 5 time periods, showing that mental health before the pandemic/freshman year was significantly better than during the pandemic/sophomore year, significantly better than during the pandemic/ junior year, significantly better than during the pandemic/ senior year, and significantly better than Spring 2023/currently—even though it appeared to be starting to improve in Spring 2023. Second, Radcliffe (2023) found statistically significant differences for 2 of 3 time periods and a trend where: a comparison of before the pandemic versus during the pandemic showed better mental/emotional health before the pandemic; a noteworthy trend that did not achieve statistical significance when comparing before the pandemic versus currently indicated a trend ($p=.051$) toward better mental/emotional health before the pandemic; and, a comparison of during the pandemic versus currently showed better mental/emotional health currently. Both studies highlight the negative impact of the pandemic on mental/emotional health with some signs that by Spring 2023, there were some improvements.

Both the present study and Radcliffe (2023) used the same measure of social support, and also compared time periods. Before the pandemic, the present study found a moderate level of social support (at least 2 people), as did Radcliffe (2023). For currently, or by Spring 2023, the present study found the same moderate level of social support as did Radcliffe (2023). When comparing 5 time periods, the present study found statistically significant differences when comparing social support before the pandemic/during freshman year versus social support during the pandemic/during sophomore year for a decline in social support levels during the pandemic; and when comparing social support before the pandemic/during freshman year versus social support during the pandemic/during junior year there was an increase in social support levels by the junior year of the pandemic. Radcliffe (2023) found: a statistically significant difference comparing social support before the pandemic versus social support during the pandemic, indicating greater social support during the pandemic; and, comparing social support before the pandemic versus social support currently there was greater social support currently.

Thus, there were different patterns for changes in social support for the present study in comparison to Radcliffe (2023). Radcliffe (2023) viewed increased social support during the pandemic as indicative of a pattern where the Black adults were coping with the pandemic by increasing social support—as a pattern of increased social support that continued into Spring 2023. Similarly, Lamont et al. (2023) found that during the pandemic in the United Kingdom that stroke survivors coped and adapted “by replacing in-person contact with telephone calls and a range of internet-based modes of contact” (p. 188).

Discussion of Findings with New Study Measures

Several study measures were designed for this study, being specific to the focus of this study in searching for any COVID-19 pandemic era impacts on college students' romantic, intimate, serious dating, or sexual relationships. Findings showed with a new tool that the mean levels of romantic involvement before the pandemic/during freshman year were between a moderate to high level of romantic involvement—and this pre-pandemic level was higher than it was for during the years of the pandemic; and by Spring 2023/currently there was still closest to a moderate level of romantic involvement—while appearing to improve. These results indicate that respondents had a decrease in romantic, intimate, serious dating, or sexual relationships during the COVID-19 pandemic -- as a pattern that remains current in Spring 2023 with just some signs of improvement by Spring 2023.

Another new tool created for this study found that the students reported closest to moderate impact from the pandemic on romantic and sexual relationships. However, when combining the categories of moderate, high and very high, it was found that 62.7% (n=612) of the respondents endorsed these levels of impact on their romantic and sexual relationships.

Noteworthy, is how Nosek (2023) found that Black, Indigenous and People of Color (BIPOC) students suffered a disproportionately more negative impact from the pandemic. BIPOC students not only had substantially more experiences of prejudice and discrimination than their peers, but also reported higher levels of perceived stress, social isolation, and overall concerns related to the pandemic.

Via another new tool, students were also asked to think “about your years in college and the responsibility of your college or university to expose students to multiple messages on the college’s sexual assault policy, sexual assault prevention, and sexual assault reporting”—and

then to rate to what extent the COVID-19 pandemic have a negative impact on how well the college met their responsibility. This provided a measure for dose of exposure with findings showing closest to a moderate level for dose of exposure to college-based sexual assault prevention policies and information. Some 89.8% had participated in a class, workshop, or training about sexual assault, sexual assault prevention, or reporting sexual assault at their college/ university; and, 77.7% reported there being a marketing campaign or media campaign about sexual assault, preventing sexual assault, reporting sexual assault, or healthy sexuality on their campus (n = 758).

While the present study did not indicate a substantial negative impact on exposure to multiple messages on the college's sexual assault policy, sexual assault prevention, and sexual assault reporting, the study limitation is that no questions specified *the year of exposure*—such as during their freshman year/before the pandemic. Orientation and the freshman year may be a time when colleges ensure exposure to campus policies.

There is evidence suggesting the study had posed an important question about potential pandemic impacts, even as no negative impacts were found. For example, Carter-Snell et al. (2023) noted how the risk of sexual assault increases during disasters and pandemics. Further, they noted how during the COVID-19 pandemic, sexual assault services “may have been relocated or shut down, and staff may have been redeployed to provide basic counselling or healthcare services versus sexual assault services” (p. 4). Also, the “isolation with the pandemic and restrictions on contact have therefore created difficulties for both access to and delivery of healthcare and counselling services post-assault” (p. 4). In their study in Canada, Carter-Snell et al., (2023) found that impact of “the “stay at home” messaging on clients’ reluctance to seek services had not been anticipated and was in some cases harmful” (p. 11). They concluded that

during the COVID-19 pandemic, the provision of sexual assault services was not treated as a priority (Carter-Snell et al., 2023).

Discussion of Findings on Alcohol and Drug Use—And Sexual Behavior

The link between excessive alcohol use and engagement in high risk sexual behavior is well-established (Pederson et al., 2023). In the present study, 73.1% of respondents reported that they drink alcohol ($n = 713$), while only 13.4% indicated ever using any kind of drug to get high ($n = 131$). The mean percentage of time respondents indicated that they or their partner used drugs and/or alcohol during sex was closest to 30% of the time. In comparison, as nearly identical findings while using the same measure, Bond (2015) found with a sample of African American women ($n=91$) with a mean age of 34.2 years that 74.7% ($n=68$) engaged in current alcohol use, and 13.2% ($n=12$) engaged in current drug use. However, Bond (2015) found a lower mean percentage of time having sex while using drugs/alcohol at 22.31% of the time (Min 1, Max 100, $SD=25.17$). This lower percentage may reflect Bond (2015) having an all female sample, while the present study was 71.2% male.

Johnson et al. (2023) reported that the rates of risky and problematic drinking are especially on the rise for female college students. Also, exposure to discrimination and race-based trauma was found to be associated with engagement in risky drinking behavior, highlighting the issues facing racial-ethnic minoritized college women.

Recall that the present study had a mostly White sample that was 71.2 % male. It is possible that findings would have been different if there had been greater female and racial-ethnic diversity in the sample.

Discussion of Findings for Condom Use and Safer Sexual Behaviors

King (2012) introduced a scale also used in the present study to investigate students' engagement in the four risk reduction behaviors of: (1) asking my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); (2) negotiating with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves); (3) refusing to have unprotected sex; and, (4) having my own supply of condoms (or dental dams, or latex or nitrile gloves). Of focus were ratings for these 4 behaviors on 3 sub-scales for Stage of Change, Self-Efficacy, and Impact of the COVID-19 Pandemic—which was new, being crafted for the present study.

Just as in King (2012), the 3 sub-scales in this study had good internal consistency. The King (2012) sample was all Black (N=195) and female, in comparison to this study's nearly all White sample that was 71% male. In this study, the Stage of Change sub-scale showed the sample was in the contemplation stage—or thinking about doing the four risk reduction behaviors. In comparison, King (2012) found the sample was closest to action—a high stage of change for engagement in risk reduction behaviors. The Self-Efficacy sub-scale showed the sample was closest to having a moderate self-efficacy for ability to perform the four risk reduction behaviors. In comparison, King (2012) found a high self-efficacy for engagement in risk reduction behaviors. The Impact of the COVID-19 Pandemic sub-scale showed the sample had closest to a low impact from the pandemic on learning how to actually perform the four risk reduction behaviors—as a scale not used in King (2012). The all female King (2012) sample had a higher mean age of 28, whereas the present study had a mean age of 22.63 years with 71.2% male—as a possible explanation for differences; higher age may mean more sexual experience, resulting in higher scores on the sub-scales.

Recall how Leivo et al., (2022) reported findings with an all Black sample of college students. There it was found that “females had a significantly higher sex knowledge” than males (p.163). Knowledge may also impact self-efficacy. Thus, it is possible that the present study with 71.2% male could explain why the present study found—in comparison to King (202), that the sample was in a lower stage of change and had lower self-efficacy for performing the four risk reduction behaviors. And, as discussed below, the present study found females had higher self-efficacy to perform safer sexual behaviors in comparison to males.

Discussion of Findings on Relationships Among Study Variables

The present study explored relationships with the Sub-Scale # 2 Self-Efficacy (2-SE) score, which provides for the study outcome variable of a higher self-efficacy to perform safer sexual behaviors. Group comparisons not only found that females had higher self-efficacy to perform safer sexual behaviors, but also that survey respondents who lived independently had higher self-efficacy to perform safer sexual behaviors, those who had a COVID-19 diagnosis in the past two years had higher self-efficacy to perform safer sexual behaviors, and survey respondents whose college *did have* a sexual assault media campaign had higher self-efficacy to perform safer sexual behaviors. It makes sense, given the prior discussion of the work of Leivo et al., (2022) that females would have higher self-efficacy to perform safer sexual behaviors. It also seems logical that those who live independent likely have greater freedom to engage in sex—which permits gaining more experience and having an increase in self-efficacy; and, it also seems logical that exposure to campus messages disseminated via a media campaign might also contribute to higher self-efficacy for engagement in safer sexual behavior

Also, strong positive correlations showed that the higher the self-efficacy to perform safer sexual behaviors, then the higher the stage of change for asking to use condoms ($r = 0.624$, $p = .000$), the stage of change for negotiating condoms ($r = 0.572$, $p = .000$), the stage of change for refusing unprotected sex ($r = 0.476$, $p = .000$), the stage of change for having a condom supply ($r = 0.614$, $p = .000$), and the stage of change for engagement in safer sex—as a global mean score capturing all four risk reduction behaviors ($r = 0.709$, $p = .000$).

The results of the backwards stepwise regression, while controlling for social desirability, found that having higher self-efficacy to perform safer sexual behaviors was significantly predicted by: higher age ($B = 0.038$, $p = .000$), higher income ($B = 0.074$, $p = .000$), higher BMI ($B = 0.010$, $p = .024$), lower level of social support ($B = -0.164$, $p = .000$), higher level of romantic involvement—current ($B = 0.096$, $p = .000$), higher exposure to sexual assault information ($B = 0.089$, $p = .000$), lower level of alcohol/drug use during sex ($B = -0.129$, $p = .001$), and higher stage of change for engagement in safer sex—as a global mean score capturing all four risk reduction behaviors ($B = 0.631$, $p = .000$) – with 56.4% of the variance explained by the model ($R^2 = 0.568$, Adjusted $R^2 = 0.564$) by these factors. Here it is not surprising that higher age would translate into more sexual experiences and more opportunities to develop a higher self-efficacy—as would having higher levels of romantic involvement.

Noteworthy, is how the regression repeats the correlation findings for the role of a higher stage of change for engagement in safer sex—as a global mean score capturing all four risk reduction behaviors; and, as a global score, this independent variable is particularly meaningful. It follows that if one is in a higher stage of change (action stage or maintenance stage) with more time and experience engaged in performing the four risk reduction behaviors, then one is likely to have grown in confidence or increased in self-efficacy for doing so. King (2012) used the Stage of

Change sub-scale global mean score as the outcome variable in that study, finding significant predictors to include (among many) higher self-efficacy—as a kind of mirror with reverse evidence to this study, while making the same point.

5.2 Implications and Recommendations

There are implications and recommendations that follow from the study findings, as follows:

- The present study is unique historically by attempting to capture the experiences of college students whose years within the university overlapped with the once-in-a-century event of a pandemic—specifically the COVID-19 pandemic. The findings justify ongoing studies, including longitudinal research that continues to document impacts from the pandemic—ideally using a large nationally representative sample that is gender balanced and includes Black, Indigenous and People of Color (BIPOC) college graduates. It is important to determine the extent to which BIPOC groups in comparison to White graduates may suffer any disproportionate negative impacts over time to their physical health, mental health, sexual and romantic relationships, alcohol or drug use, or engagement in sexual risk taking behavior.
- Future research should use the methodology of using multiple time frames for comparing relevant factors such as physical health, mental health, and social support—including for before the pandemic, during the pandemic, and post-pandemic; and, these time frames could be adjusted as appropriate in future longitudinal research studies.

- The research also contributes meaningful tools for use in investigations on what college students are exposed to in terms of campus sexual assault policies, media campaigns, and efforts to promote engagement in safer sexual behavior. The pandemic era forced the design of short measures to reduce the burden of time and stress on study participants—and such tools should continue to be used in future studies. Colleges and universities also need to be reflective and consider the extent to which any shifting of college personnel away from sexual assault and counseling activities may have led to any decreased exposure to sexual assault prevention education; and the tools provided by this study would be ideal for investigating this issue. Colleges and universities may need to consider the importance of setting in place sustainable sexual assault prevention activities so there is no decrease in exposure to this vital information for students—given the possibility of future disasters and pandemics. There should be no disruption in the provision of such services, especially as this study found that survey respondents whose college did have a sexual assault media campaign had higher self-efficacy to perform safer sexual behaviors.
- Colleges and universities need to double their efforts to reach male students and foster their greater engagement in safer sexual behaviors, given this study found that females had higher self-efficacy to perform safer sexual behaviors. Interventions are needed that can meet the needs of male students. This study had a 71.2% male sample, so this finding is particularly meaningful.

- Colleges and universities also need to ensure students have adequate exposure to alcohol and drug education, given this study found that survey respondents who did not currently use alcohol had higher self-efficacy to perform safer sexual behaviors
- Further, the study used a tool first used by King (2012), while adding an impact of the pandemic scale to the pre-existing stage of change and self-efficacy rating tools for performing four sexual risk reduction behaviors. This tool should also be used in future research, as the scales had good internal consistency and produced meaningful results. The sub-scales provide options for viable outcome variables—as in King (2012) using the stage of change global mean score as an outcome variable and the present study using the self-efficacy global mean score as an outcome variable. Hence, the tool is recommended for future use, including in longitudinal studies of college graduates as impacts are explored beyond their pandemic-era years in college.
- An interesting variable in the present study involved living independently from parents/family or living with them—finding 63% were living with parents/family. This factor needs to be explored longitudinally, as this study found survey respondents who lived independently had higher self-efficacy to perform safer sexual behaviors. It is a question for future research regarding the impact of the pandemic for contributing to college graduates returning home, versus living independently. There may be long-term psychosocial impacts that include those on romantic and sexual relationships but may also go beyond to have other unexpected impacts in the future.

5.3 Limitations of the Study

Regarding limitations, the study used a convenience sample which – while large –led to it not being representative of all college students in the United States. The sample was nearly all White with 71.2% males, as limitations. Also, students living with parents/family may have had less access to the Internet, leaving some unable to participate potentially. The use of a study incentive of winning \$100 Amazon gift cards may have created a biased sample of those motivated financially. Future research should seek to overcome these limitations.

5.4 Conclusion

The study emerges as a ground-breaking study highlighting the unique period of the pandemic and examining the impact of this period on college students. Further, it is yet to be known how far-reaching the impact of the pandemic will be. The findings offered a perspective into how the pandemic may have contributed to their experience as a college student—and post-pandemic. This data is important to help provide a foundation for future pandemics and disasters—as colleges and universities may need to put in place sustainable sexual assault prevention and healthy sexual behavior initiatives; such program planning is essential preparation for future disasters and pandemics. Also needed is programming to offset experiences that might impact isolation, relationships and social connection.

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APPENDICES

Appendix A

IRB Approval Letter



Teachers College IRB

Exempt Study Approval

To: Yolanda Alvarez
From: Amanda O'Hara
Subject: IRB Approval: 23-146 Protocol
Date: 01/20/2023

Thank you for submitting your study entitled, "*THE COVID-19 PANDEMIC ERA AS A UNIQUE HISTORICAL PERIOD FOR COLLEGE STUDENTS NEGOTIATING ROMANCE, DATING AND SEXUAL RELATIONSHIPS: PREDICTORS OF HIGH SELF-EFFICACY FOR ENGAGING IN SAFER SEX PRACTICES*;" the IRB has determined that your study is **Exempt** from committee review (Category 2) on 01/20/2023.

Please keep in mind that the IRB Committee must be contacted if there are any changes to your research protocol. The number assigned to your protocol is **23-146**. Feel free to contact the IRB Office by using the "Messages" option in the electronic Mentor IRB system if you have any questions about this protocol.

Please note that your Consent form bears an official IRB authorization stamp and is attached to this email. Copies of this form with the IRB stamp must be used for your research work. Further, all research recruitment materials must include the study's IRB-approved protocol number.

As the PI of record for this protocol, you are required to:

- Use current, up-to-date IRB approved documents
- Ensure all study staff and their CITI certifications are on record with the IRB
- Notify the IRB of any changes or modifications to your study procedures
- Alert the IRB of any adverse events

You are also required to respond if the IRB communicates with you directly about any aspect of your protocol. Failure to adhere to your responsibilities as a study PI can result in action by the IRB up to and including suspension of your approval and cessation of your research.

You can retrieve a PDF copy of this approval letter from Mentor IRB.

Best wishes for your research work.

Sincerely,
Amanda O'Hara

amanda.oharaa@gmail.com

Appendix B

Study Email

INVITING MAY & JUNE 2022 COLLEGE GRADUATES TO VOLUNTEER 15 MINUTES ANSWERING SURVEY QUESTIONS

About Potential Impact of the COVID-19 Pandemic on Romantic Relationships

FOR A 3 IN 250 CHANCE TO WIN A \$100 AMAZON GIFT CARD

IRB Protocol Number 23-146

The Research Group on Disparities in Health within the Department of Health and Behavior Studies at Teachers College, Columbia University, in New York, New York is conducting a study with young adults who graduated from college in May or June of 2022. We are seeking college graduates who can share about their romantic, intimate, dating, and sexual relationships for the historically unique period of being a college student during the COVID-19 pandemic era. Our goal is to identify factors related to reporting greater or less involvement in romantic, intimate, dating, and sexual relationships—as well as engagement in any sexual risk-taking behavior (e.g., lack of protection against sexually transmitted diseases). We also seek to determine how well colleges did or did not do during the pandemic era in conveying information about sexual assault prevention and reporting policies. Based on our findings, we will make recommendations to colleges on how to prepare for public health emergencies and best support students, in order to foster their growth and development and ensure their safety.

- Participation in this survey is limited to the first 250 volunteers
- Completing the online survey takes about 15 minutes
- Those who complete the survey will have a 3 in 250 chance of winning 1 of 3 \$100 Amazon giftcards
- Please click on the link in the message below to view the informed consent, learn about your rights as a participant and proceed to the survey.
- We also invite you to forward this email to others who may be willing to volunteer, or send them a text message, or tweet using the message, below:

Inviting May & June 2022 college grads to take a 12-15-minute survey on the impact of the pandemic on their dating & love lives. Complete survey at <https://tinyurl.com/PandemicImpactOnLoveLife> for 3 in 250 chance to win 1 of 3 \$100 Amazon gift cards (Teachers College IRB # 23-146).

Or, use the QR code attached to this email when forwarded.

THANK YOU FOR YOUR PARTICIPATION!

If you have any questions or would like to have additional information about the study, please contact:

YOLANDA ALVAREZ, MA, MA, Doctoral Candidate, Department of Health and Behavior Studies, Teachers College, Columbia University, Box 114, 525 W. 120th Street, New York, NY 10027; ya81@tc.columbia.edu

BARBARA C. WALLACE, Ph.D., Director, Research Group on Disparities in Health, Professor of Health Education, Clinical Psychologist, Department of Health and Behavior Studies, Teachers College, Columbia University, Box 114, 525 W. 120th Street, New York, NY 10027; bcw3@tc.columbia.edu; Study Contact Number: 267-269-7411

Appendix C

Study Text/Tweet

Inviting May & June 2022 college grads to take a 12-15-minute survey on the impact of the pandemic on their dating & love lives. Complete survey at <https://tinyurl.com/PandemicImpactOnLoveLife> for 3 in 250 chance to win 1 of 3 \$100 Amazon gift cards (Teachers College IRB # 23-146).

Appendix D
Informed Consent
(on the pages that follow)

Teachers College, Columbia University
525 West 120th Street
New York NY 10027
212-678-3000

INFORMED CONSENT

IRB Protocol Number 23-146

Protocol Title:

The COVID-19 Pandemic as a Unique Historical Period for College Students Negotiating Romance, Dating and Sexual Relationships: Predictors of High Self-Efficacy for Engaging in Safer Sex Practices

Principal Researcher: Yolanda Alvarez, MA, MA
Teachers College, Columbia University
917-921-3944; ya81@tc.columbia.edu

☐

☐

INTRODUCTION You are invited to participate in this research study called “*The COVID-19 Pandemic as a Unique Historical Period for College Students Negotiating Romance, Dating and Sexual Relationships: Predictors of High Self-Efficacy for Engaging in Safer Sex Practices.*” You may qualify to take part in this research study if you: 1) are age 20 or above; and 2) graduated from a college or university in the U.S. in May or June of 2022. This study is being done to learn about college students’ romantic, intimate, dating, and sexual relationships for the historically unique period of the COVID-19 pandemic. Our goal is to identify factors related to reporting greater or lesser involvement in romantic, intimate, dating, and sexual relationships—as well as engagement in any safer sex practices (e.g. protection against sexually transmitted diseases). We also seek to determine how well colleges did or did not do during the pandemic era in conveying information about sexual assault prevention and reporting policies. Approximately 250 people will participate in this study and it will take about 15 minutes of your time to complete.

WHY IS THIS STUDY BEING DONE? This study is being done to identify factors related to college students’ degree of involvement in romantic, intimate, dating, and sexual relationships—and engagement in any safer sex practices. We also want to know how college students rate their colleges for providing information about sexual assault prevention and reporting policies during the pandemic. Based on our findings, we will make recommendations to colleges on how to prepare for public health emergencies and best support students, in order to foster their growth and development and ensure their safety.

WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY?

If you decide to participate in the study, you will answer a series of questions in an online survey. Questions will ask you to rate your health status, social support, and involvement in

<p>Teachers College, Columbia University Institutional Review Board Protocol Number: 23-146 Consent Form Approved Until: No Expiration Date</p>

romantic/dating/sexual relationships across 5 time periods [i.e. 1)-2018-2019/freshman year before the pandemic; 2)-2019-2020/second semester of sophomore year during pandemic; 3)-2020-2021/junior year during pandemic; 4)-2021-2022/senior year during the pandemic; and, 5)-currently, especially the past 3 months]. Other questions will cover your background characteristics (e.g. age, race, employment status, etc.), how you rate the impact of the COVID-19 pandemic on your relationships, how you rate your college for providing information on sexual assault prevention and policies during the pandemic, and how you rate yourself for engagement in safer sex—if you were sexually active.

WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY? The risks of study participation include the possibility that you may feel some discomfort from taking the survey or some stress due to some of the questions. However, your participation in this study is completely voluntary, and you can stop at any time.

WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY? There is no direct benefit to you for participating in this study.

WILL I BE PAID FOR BEING IN THIS STUDY? You will not be paid to participate. However, when you complete the survey you will be invited to enter your email address and to hit a “submit” button—so that you are officially entered into a drawing for a chance to receive a prize (i.e., 1 of 3 bar coded Amazon gift certificates for \$100). You do not have to enter the lottery drawing to complete the survey. Once you submit your email address, then it will automatically be entered into a private and secure data base that even the principal investigator cannot access. Once 250 people have completed the entire survey, you will have a 3 in 250 chance of winning 1 of 3 bar coded Amazon gift certificates for \$100. The www.Amazon.com gift certificates will be sent to three randomly chosen e-mail accounts using a secure online program. This occurs without in any way linking your identity to the survey results. The principal investigator is not able to view any of the e-mail addresses to which the gift certificates are sent. Only the 3 winners will be contacted.

WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS? The study is over when you have completed the online survey. However, you can leave the study at any time even if you have not finished.

PROTECTION OF YOUR CONFIDENTIALITY The study does not involve collecting any of your personal identifying information, such as your name or address, allowing you to remain anonymous. (NOTE: Recall, as per what is above, you can elect to enter your e-mail address to enter the drawing for a chance to receive a prize. However, this occurs without in any way linking your identity to your survey answers, and the principal investigator cannot view any e-mail addresses.) Teachers College, Columbia University has determined that www.Qualtrics.com provides a secure platform for the online survey you will take. The survey data files will also be saved on the primary researcher’s password protected computer. Regulations require that research data be kept for at least three years.

For quality assurance, the study team, and/or members of the Teachers College Institutional Review Board (IRB) may review the data collected from you as part of this study. Otherwise, all

<p>Teachers College, Columbia University Institutional Review Board Protocol Number: 23-146 Consent Form Approved Until: No Expiration Date</p>

information obtained from your participation in this study will be held strictly confidential and will be disclosed only with your permission or as required by U.S. or State law.

HOW WILL THE RESULTS BE USED? The results of this study will be published in journals and presented at academic conferences. This study is being conducted as part of the doctoral dissertation of the principal investigator.

WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY?

If you have any questions about taking part in this research study, you should contact the primary researcher, Yolanda Alvarez at 917-921-3944 or at ya81@tc.columbia.edu. You can also contact the sponsor/supervisor of this research study, Dr. Barbara Wallace, at bcw3@tc.columbia.edu or 267-269-7411.

If you have questions or concerns about your rights as a research subject, you should contact the Institutional Review Board (IRB) (the human research ethics committee) at 212-678-4105 or email IRB@tc.edu. Or you can write to the IRB at Teachers College, Columbia University, 525 W. 120th Street, New York, NY 10027. Box 151. The IRB is the committee that oversees human research protection for Teachers College, Columbia University.

PARTICIPANT'S RIGHTS

- I have read the Informed Consent Form and have been offered the opportunity to discuss the form with the researcher.
- I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study.
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty.
- The researcher may withdraw me from the research at his or her professional discretion. I understand that if I take the survey more than once I will be eliminated from the study.
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the researcher will provide this information to me.
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- I should receive a copy of the Informed Consent Form document. (I understand that I can download it).

By signing electronically, you agree to be in the study and confirm that you are age 20 or above and graduated from a college or university in the U.S. in May or June of 2022.

Provide your electronic signature:

_____ **Date:** _____

<p>Teachers College, Columbia University Institutional Review Board Protocol Number: 23-146 Consent Form Approved Until: No Expiration Date</p>

Appendix E

Screening Survey

Teachers College, Columbia University IRB Protocol Number 23-146

The Research Group on Disparities in Health within the Department of Health and Behavior Studies at Teachers College, Columbia University, in New York, New York is conducting a study with young adults who graduated from college in May or June of 2022. We are seeking college graduates who can share about their romantic, intimate, dating, and sexual relationships for the historically unique period of being a college student during the COVID-19 pandemic era. Our goal is to identify factors related to reporting greater or less involvement in romantic, intimate, dating, and sexual relationships—as well as engagement in any sexual risk-taking behavior (e.g., lack of protection against sexually transmitted diseases). We also seek to determine how well colleges did or did not do during the pandemic era in conveying information about sexual assault prevention and reporting policies. Based on our findings, we will make recommendations to colleges on how to prepare for public health emergencies and best support students, in order to support their growth and development and ensure their safety. To participate in our research study, please answer the following questions to see if you qualify:

1- Are you an adult age 20 or above?

Yes ___ No ___

2-Did you graduate from a college or university in the U.S. in May or June of 2022?

Yes ___ No ___

If you answered “Yes” to the above questions, then you are invited to take a survey that will take approximately 15-minutes to complete. If you answered “No” to the above questions, then you are not eligible for this survey opportunity; however, you can send the link* that took you to this survey opportunity to someone who you think will be eligible for study participation. THANK YOU. Please note that if you are eligible for study participation and complete the survey that follows, then you will have a 3 in 250 chance of winning one of three \$100 Amazon gift cards in a lottery drawing when the study is closed.

NOTE: If they answer No to any question, then they EXIT survey and arrive at a disqualification page. If they answer YES to all question, then they proceed to the study survey.

Appendix F

Study Survey

The Survey on Romantic, Intimate, Dating, and Sexual Relationships for College and University Students of the COVID-19 Pandemic Era

STUDY SURVEY

Teachers College, Columbia University
IRB Protocol Number _____

INSTRUCTIONS: Please answer the following questions as honestly as possible by either selecting your desired answer or by providing an answer in the text box.

Part I: Basic Demographics (BD-14)

[This is a common tool used by the Research Group on Disparities in Health (RGDH)—with slight modifications depending on the population.]

1-My gender is:

- a. ___ Male (cisgender male)
b. ___ Female (cisgender female)
c. ___ Transgender male
d. ___ Transgender female
e. ___ Other (please specify) _____

2-My age is: _____ [DROP DOWN MENU from 15 to 100—Exit any 17 & below]

4-Using the categories below, what do you consider yourself? (Mark all that apply)

- ___ White / Caucasian / European American
___ Black / African American
___ Latinx/ Hispanic / Latino (Puerto Rican, Mexican, Mexican American, Chicano, Cuban, other Hispanic/Latino)
___ Asian (Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, or other Asian)
___ American Indian / Alaska Native
___ Native Hawaiian / Pacific Islander
___ Arab American / Middle Eastern
___ Other group(s) (specify)

5-My skin color is

- 7- ___ Very Dark 6- ___ Dark 5- ___ Medium to Dark
4- ___ Medium to Light 3- ___ Light 2- ___ Very Light 1 ___ White

[NOTE: create a continuous scale from light=1 to very dark=7 education

NOTE: prior research found the darker the skin tone, the higher the ability to perceive racism]

6-Currently do you have a main or steady partner (i.e., or married, in domestic partnership, etc.)?

- ___ Yes ___ No

7-Do you have any children?

Yes No

8-Describe your living situation:

Live with parents, guardians, or family

Live independently away from parents, guardians, or family

9-Were you born in the United States?

a. Yes

b. No

If you answered “No” please indicate the country in which you were born

Country of _____ [DROP DOWN MENU for countries]

10-My yearly household income is:

1-Less than \$10,000

2-\$10,000 to \$19,000

3-\$20,000 to \$39,000

4-\$40,000 to \$49,000

5-\$50,000 to \$99,999

6-\$100,000 to \$199,999

7-\$200,000 to \$299,000

8-\$300,000 to \$399,000

9-\$400,000 to \$499,000

10-\$500,000 to \$799,000

11-\$800,000 or More

I do not know

[NOTE: create a continuous scale from low=1 category to high=11 category; create a mean category]

11-Did you graduate from a college or university in the U.S.—and if so, indicate when you graduated?

No, I did not graduate☐exclude from study

Yes, I graduated in May/June of 2022

Yes, I graduated in Summer/Fall of 2022

Yes, I graduated in 2021 or 2020☐exclude from study

Yes, I graduated in 2019 or 2018☐exclude from study

12-For your undergraduate education, indicate the type of college or university that you attend/attended:

Predominantly White Institution (PWI)—i.e., majority of students were White

Historically Black College or University (HBCU)

Hispanic Serving Institution (HSI)

Tribal College or University (TCU)

I studied abroad in another country☐ EXIT STUDY

13-In what state was your college or university? [DROP DOWN MENU OF STATES]

14-My current employment status is:

- a. Full Time
- b. Part Time
- c. Per Diem
- d. Unemployed

[NOTE: create a dichotomous variable, employed yes=1; no=0]

Part II: Single Item Rating of Risk of Providing Socially Desirable Responses (SIR-RPSDR-1)

[Note: This is a single item scale created for first time use by Dr. Barbara Wallace in studies in 2018 conducted by the Research Group on Disparities in Health [RGDH], and for ongoing use by the RGDH. It is used instead of the well-known 13-item measure of social desirability (i.e., Crowne, D., & Marlowe, D. (1960) A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24(4), 349-354.]. This single item scale has value by reducing the burden of time on study participants while serving as a measure of social desirability, especially, given the stress of the pandemic.]

1-I sometimes say things that I think will please people, or what I think they want to hear—versus the honest truth, which might be difficult or painful for other people to hear and accept, or might lead them to judge me harshly...

I rate myself on a scale of 0 to 10, as follows:

0	1	2	3	4	5	6	7	8	9	10
0-I am not like										10-I am like
this at all										this all the

Part III: Personal Health Background and Body Mass Index (PHB-BMI-14)

[This is a tool created for use by the Research Group on Disparities in Health, being modified for particular studies. For this study, beyond obtaining COVID-19 health history and Body Mass Index, this version obtains ratings of physical health and mental/emotional health for 5 time periods corresponding to their freshman, sophomore, junior and senior years in college—and currently; these 5 periods correspond to before and during the pandemic, and currently, as shown in the survey. Comparisons of time periods will be made using multiple paired t-tests]

1-Please check, below, what best describes you:

- I have now, or had COVID-19 at some point in the past two years Yes No Not Sure
- I currently have, or had long-COVID-19 Yes No Not Sure
- I think COVID-19 is a hoax; it does not exist, so I cannot answer questions related to the COVID-19 pandemic. Yes No Not Sure EXIT STUDY

2-My current height (feet) [DROP DOWN BOX, 4-9]

3-My current height (inches) [DROP DOWN BOX, 0-11]

4-My current weight (in pounds) [DROP DOWN BOX, 70-400]

[2, 3, 4 – for calculation of BMI]

5-I rate my *physical health* **BEFORE the COVID-19 pandemic**—for academic year 2018-2019, or **my freshman year**, as follows:

- 1__ Very poor
- 2__ Poor
- 3__ Fair
- 4__ Good
- 5__ Excellent

6-I rate my *physical health* **DURING the COVID-19 pandemic**—for spring semester of academic year 2019-2020, or the **second half of my sophomore year**, as follows:

- 1__ Very poor
- 2__ Poor
- 3__ Fair
- 4__ Good
- 5__ Excellent

7-I rate my *physical health* **DURING the COVID-19 pandemic**—for academic year 2020-2021 or **my junior year**, as follows:

- 1__ Very poor
- 2__ Poor
- 3__ Fair
- 4__ Good
- 5__ Excellent

8-I rate my *physical health* **DURING the COVID-19 pandemic**—for academic year 2021-2022 or **my senior year**, as follows:

- 1__ Very poor
- 2__ Poor
- 3__ Fair
- 4__ Good
- 5__ Excellent

9-I rate my *physical health* for **CURRENTLY—especially in the PAST THREE MONTHS**—as follows:

- 1__ Very poor
- 2__ Poor
- 3__ Fair
- 4__ Good
- 5__ Excellent

10-I rate my *mental/emotional health* **BEFORE the COVID-19 pandemic**—for academic year 2018-2019, or **my freshman year**, as follows:

- 1__ Very poor
- 2__ Poor
- 3__ Fair
- 4__ Good
- 5__ Excellent

11-I rate my *mental/emotional health* **DURING the COVID-19 pandemic**—for spring semester of academic year 2019-2020, or the **second half of my sophomore year**, as follows:

- 1 __ Very poor
- 2 __ Poor
- 3 __ Fair
- 4 __ Good
- 5 __ Excellent

12-I rate my *mental/emotional health* **DURING the COVID-19 pandemic**—for academic year 2020-2021 or **my junior year**, as follows:

- 1 __ Very poor
- 2 __ Poor
- 3 __ Fair
- 4 __ Good
- 5 __ Excellent

13-I rate my *mental/emotional health* **DURING the COVID-19 pandemic**—for academic year 2021-2022 or **my senior year**, as follows:

- 1 __ Very poor
- 2 __ Poor
- 3 __ Fair
- 4 __ Good
- 5 __ Excellent

14-I rate my *mental/emotional health* for **CURRENTLY—especially in the PAST THREE MONTHS**—as follows:

- 1 __ Very poor
- 2 __ Poor
- 3 __ Fair
- 4 __ Good
- 5 __ Excellent

Part IV: Perceived Social Support—For Before and During the COVID-19 Pandemic, and Currently (PSS-BD-COVID-19-P-C-5)

[The Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the RGDH, created this new tool as modification to a common tool used by the Research Group on Disparities in Health (RGDH): i.e., a prior tool used by Lian (2017). See: Lian, Z. (2017). *Predictors of depression/anxiety, mental health service utilization, and help-seeking for Chinese international students: Role of acculturation, microaggressions, social support, coping self-efficacy, stigma, and college staff's cultural competence and cultural humility*. Doctoral Dissertation, Teachers College, Columbia University. In recent years, to reduce the burden of time during the stress of the ongoing pandemic, a new one item version of the scale was created by combining the essence of 5 questions used in Lian (2017) into one description of what having social support “means.” Participants then indicated the number of people they have in their life, using the 5-option scale. This version asks about five time periods for social support that correspond to years of the pandemic and their freshman, sophomore, junior and senior years—and currently. The study will compare the 5 group means for the five periods of time using multiple paired t-tests.]

Having SOCIAL SUPPORT means having people in your life who provide the following kinds of support and assistance: you can ask them for advice or receive words of encouragement; get money or get food in an emergency; or have a place to temporarily wait for help or stay or live in an emergency.

1-Please indicate the extent to which *you experienced SOCIAL SUPPORT in your life*

BEFORE the COVID-19 pandemic—for academic year 2018-2019 or **your freshman year:**

1. I had no one like this in my life then
2. I had at least 1 one person like this in my life then
3. I had at least 2 people like this in my life then
4. I had 3-5 people like this in my life then
5. I had 6 or more people like this in my life then

2-Please indicate the extent to which *you experienced SOCIAL SUPPORT in your life*

DURING the COVID-19 pandemic—for spring semester of academic year 2019-2020 or the **second half of your sophomore year:**

1. I had no one like this in my life then
2. I had at least 1 one person like this in my life then
3. I had at least 2 people like this in my life then
4. I had 3-5 people like this in my life then
5. I had 6 or more people like this in my life then

3-Please indicate the extent to which *you experienced SOCIAL SUPPORT in your life*

DURING the COVID-19 pandemic—for academic year 2020-2021 or **your junior year:**

1. I had no one like this in my life then
2. I had at least 1 one person like this in my life then
3. I had at least 2 people like this in my life then
4. I had 3-5 people like this in my life then
5. I had 6 or more people like this in my life then

4-Please indicate the extent to which *you experienced SOCIAL SUPPORT in your life*

DURING the COVID-19 pandemic—for academic year 2021-2022 or **your senior year:**

1. I had no one like this in my life then
2. I had at least 1 one person like this in my life then
3. I had at least 2 people like this in my life then
4. I had 3-5 people like this in my life then
5. I had 6 or more people like this in my life then

5-Please indicate the extent to which *you experienced SOCIAL SUPPORT in your life*

CURRENTLY—especially in the PAST THREE MONTHS:

1. I had no one like this in my life then
2. I had at least 1 one person like this in my life then
3. I had at least 2 people like this in my life then
4. I had 3-5 people like this in my life then
5. I had 6 or more people like this in my life then

Part V: Rating Level of Involvement in Romantic and Sexual Relationships Before and During the COVID-19 Pandemic—And Currently (RLRSR-BD-COVID-19-C-5)

[The Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the RGDH, created this new tool based on a review of the literature—for first time use in this study and ongoing use by the RGDH. The tool collects ratings on participants' level of involvement in romantic, intimate, serious dating, or sexual relationships, using a Likert Scale of 1-very low to 5-very high level of involvement, while collecting data for 5 time periods corresponding to their freshman, sophomore, junior and senior years in college—and currently; these 5 time periods correspond to before and during the pandemic, and currently, as shown in the survey items. The study will compare the 5 group means for the five periods of time using multiple paired t-tests.]

Please select the rating that best describes what you engaged in for the time periods specified.

1-**BEFORE the COVID-19 pandemic**—for academic year 2018-2019 or **my freshman year**—my level of involvement in romantic, intimate, serious dating, or sexual relationships was

- 1__ Very Low
- 2__ Low
- 3__ Moderate
- 4__ High
- 5__ Very High

2-**DURING the COVID-19 pandemic**—for spring semester of academic year 2019-2020 or the **second half of my sophomore year**—my level of involvement in romantic, intimate, serious dating, or sexual relationships was

- 1__ Very Low
- 2__ Low
- 3__ Moderate
- 4__ High
- 5__ Very High

3-**DURING the COVID-19 pandemic**—for academic year 2020-2021 or **my junior year**—my level of involvement in romantic, intimate, serious dating, or sexual relationships was

- 1__ Very Low
- 2__ Low
- 3__ Moderate
- 4__ High
- 5__ Very High

4-**DURING the COVID-19 pandemic**—for academic year 2021-2022 or **my senior year**—my level of involvement in romantic, intimate, serious dating, or sexual relationships was

- 1__ Very Low
- 2__ Low
- 3__ Moderate
- 4__ High
- 5__ Very High

5-**CURRENTLY—especially in the PAST THREE MONTHS**—my level of involvement in romantic, intimate, serious dating, or sexual relationships has been

- 1__ Very Low
- 2__ Low
- 3__ Moderate
- 4__ High
- 5__ Very High

Part VI: Extent of Impact from the COVID-19 Pandemic on Romantic and Sexual Relationships (EI-COVID-19-P-RSR-1)

[This is a new scale created for this study by the Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the Research Group on Disparities in Health (RGDH)—and for use by the RGDH. It is based on the review of literature.]

1-Thinking about your freshman, sophomore, junior and senior years in college, to what extent did the COVID-19 pandemic have a **NEGATIVE IMPACT** on your developing, experiencing, or maintaining romantic, intimate, serious dating, or sexual relationships?

0 ___ *No impact at all* 1 ___ *Very low impact* 2 ___ *Low impact* 3 ___ *Moderate impact*
4 ___ *High impact* 5 ___ *Very high impact*

Part VII: Dose of Exposure to College-Based Sexual Assault Prevention Policies and Information (DECB-SAPPI-5)

[This is a new scale created for this study by the Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the Research Group on Disparities in Health (RGDH)—and for use by the RGDH. It is based on the publication, Dills, J., Fowler, D., & Payne, G. (2016). Sexual violence on campus: Strategies for prevention, Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Items 1-3 use a Likert scale ranging from 0-None at all to 5-Very High for level of exposure; and items 4 and 5 are scored 0-No and 1-Yes]

1-Please rate your level of exposure to and familiarity with the sexual assault policy of the college or university you attended:

- 0 ___ None at all
- 1 ___ Very Low
- 2 ___ Low
- 3 ___ Moderate
- 4 ___ High
- 5 ___ Very High

2-To what extent were you exposed to messages about sexual assault policy, sexual assault prevention, or reporting sexual assault on your college campus or at your college/university (e.g., posters, flyers, emails, text messages, etc.)?

- 0 ___ None at all
- 1 ___ Very Low
- 2 ___ Low
- 3 ___ Moderate
- 4 ___ High
- 5 ___ Very High

3-To what extent were you exposed to messages about sexual assault policy, sexual assault prevention, or reporting sexual assault on your college campus or at your college/university **MULTIPLE TIMES**, or many times?

- 0 ___ None at all
- 1 ___ Very Low
- 2 ___ Low
- 3 ___ Moderate
- 4 ___ High
- 5 ___ Very High

4-Did you participate in a class, workshop or training of some kind about sexual assault, sexual assault prevention, or reporting sexual assault on your college campus or at your college/ university?

- 0 ___ No

1__ Yes

5- Did your campus have a marketing campaign or media campaign about sexual assault, preventing sexual assault, reporting sexual assault, or healthy sexuality?

0__ No

1__ Yes

0__ Unsure

Part VIII: Extent of Impact from the COVID-19 Pandemic on College's Sexual Assault Educational Strategies (EI-COVID-19-P-CSAES-1)

[This is a new scale created for this study by the Principal Investigator, Yolanda Alvarez, and Dr. Barbara Wallace, Director of the Research Group on Disparities in Health (RGDH)—and for use by the RGDH.]

1-Thinking about your years in college and the responsibility of your college or university to expose students to MULTIPLE messages on the college's sexual assault policy, sexual assault prevention, and sexual assault reporting, to what extent did the COVID-19 pandemic have a **NEGATIVE IMPACT on how well the college met their responsibility?**

0__ *No impact at all* 1__ *Very low impact* 2__ *Low impact* 3__ *Moderate impact*
4__ *High impact* 5__ *Very high impact*

Part IX: Alcohol and Drug Use Screening (ADUS-2)

[The Alcohol and Drug Use Screening (ADUS-2) tool was developed for use by members of the RGDH by Professor Barbara Wallace. This scale has just two items and permitted ascertaining drug and alcohol use by subjects. It has been used in prior studies (e.g., See Bond, K. T. (2015). Diffusing the innovation of e-health on post-exposure prophylaxis (PEP) and pre-exposure prophylaxis (PrEP) using an avatar video targeting African American women: Predictors of a high rating of the video (Doctoral dissertation, Teachers College, Columbia University)]

1-Do you drink alcohol?

Yes _____ No _____ I used to, but I stopped _____

2-Do you ever use any kind of drug to get high (e.g., marijuana, cocaine, heroin, methamphetamine, ecstasy, prescription pills, club drugs, etc...)?

Yes _____ No _____ I used to, but I stopped _____

Part X: Having Sex and Using Drugs/Alcohol (HSUDA-1)

[The Having Sex and Using Drugs/Alcohol (HSUDA-1) scale is a brief tool developed by Professor Barbara Wallace for use by the RGDH. It ascertains the frequency (i.e., percentage of time—on a Likert scale ranging from 0% to 100%) with which sexual acts were engaged in while also using drugs and alcohol. It has been used in prior studies (e.g., See Bond, K. T. (2015). Diffusing the innovation of e-health on post-exposure prophylaxis (PEP) and pre-exposure prophylaxis (PrEP) using an avatar video targeting African American women: Predictors of a high rating of the video (Doctoral dissertation, Teachers College, Columbia University)]

1-What percentage of the time do you have sex when you and/or your partner have also used drugs and/or alcohol?

__ 0% (never) __ 10% __ 20% __ 30% __ 40%

__ 50% __ 60% __ 70% __ 80% __ 90%

__ 100% (all the time)

NA __ I do not have sex

Part XI: Condom Use and Safer Sexual Behaviors Scale—With Stage of Change, Self-Efficacy, and Pandemic Impact Sub-Scales (CUSSBS-WSOC-SE-

PIS-12)

[This scale was originally created by Sheba King and Dr. Barbara Wallace, Director of the RGDH for first time use in King (2012) and ongoing use by the RGDH. The name of the scale in this study was changed from the **Condom Use and Sexual Behavior Empowerment Scale (CUSBES)**, as in King (2012) to the **Condom Use and Safer Sexual Behaviors Scale—With Stage of Change, Self-Efficacy, and Pandemic Impact Sub-Scales (CUSSBS-WSOC-SE-PIS-12)** in this study. **NOTE:** See King, S. (2012). An online investigation of young African American women's empowerment profiles for engagement in HIV/AIDS risk reduction behaviors: Stages of change, self-efficacy, social support, and role models (Doctoral dissertation, Teachers College, Columbia University). King (2012) explored 4 risk behaviors, while this study does the same, with some change in language—adding **or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves**). King (2012) assessed these 4 risk behaviors, using 4 subscale, while this study only uses the first 2 of 4 (and eliminating the adjective “empowerment” as the first word in each scale name: 1- **Stage of Change to perform the 4 risk reduction behaviors (SOC-4)**; and 2- **Self-Efficacy to perform the 4 risk reduction behaviors (SE-4)** [i.e. eliminating 3- **Empowerment Social Support to perform the 4 risk reduction behaviors (ESS-4)**; and **Empowerment Role Models to perform the 4 risk reduction behaviors (ERM-4)**]. **This study, instead, adds a new subscale (3), Impact of the COVID-19 Pandemic for performing the 4 risk reduction behaviors (EI-COVID-19-5).** King (2012) found the Condom Use and Sexual Behavior Empowerment Scale (CUSBES) had an overall Cronbach’s Alpha of .862, being very good, while the Empowerment Stage of Change Sub-Scale (ESOC-4) had Cronbach’s Alpha of .852 (very good), and the Empowerment Self-Efficacy Sub-Scale (ESE-4) had Cronbach’s Alpha of .720 (fair to good). Internal consistency will be investigated for all scales, including the 3rd new scale in the present study. The subscale # 2-**Self-Efficacy to perform the 4 risk reduction behaviors (SE-4)**—based on 4 items (2, 5, 8, 11)—is the study outcome variable to be predicted by backward stepwise regression.]

Subscale 1 Safer Sexual Behavior: Asking a partner to use condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)

1) When it comes to the behavior of ***asking my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)***, check the following that most applies to you:

- I am not thinking of doing this behavior at all.
- I am thinking about doing this behavior.
- I am preparing to do this behavior.
- I have been doing this behavior for less than six (6) months.
- I have been doing this behavior for more than six (6) months.

2.) When it comes to the behavior of ***asking my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)***, how confident are you in performing this behavior?

- | | | |
|--|--|---|
| <input type="checkbox"/> 0% confident | <input type="checkbox"/> 20% confident | <input type="checkbox"/> 40% confident |
| <input type="checkbox"/> 60% confident | <input type="checkbox"/> 80% confident | <input type="checkbox"/> 100% confident |

3.) To what extent, if any, did the COVID-19 pandemic impact your learning how to or actually performing the behavior of ***asking my sexual partner(s) to use a condom (or a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)***?

- | | | | |
|--|--|--|---|
| <input type="checkbox"/> <i>No impact at all</i> | <input type="checkbox"/> <i>Very low impact</i> | <input type="checkbox"/> <i>Low impact</i> | <input type="checkbox"/> <i>Moderate impact</i> |
| <input type="checkbox"/> <i>High impact</i> | <input type="checkbox"/> <i>Very high impact</i> | | |

Subscale 2 Safer Sexual Behavior: Negotiating condom use (use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)

4.) When it comes to the behavior of ***negotiating with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)***, check the following that most applies to you:

- I am not thinking of doing this behavior at all.
- I am thinking about doing this behavior.
- I am preparing to do this behavior.
- I have been doing this behavior for less than six (6) months.
- I have been doing this behavior for more than six (6) months.

5.) When it comes to the behavior of ***negotiating with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)***, how confident are you in performing this behavior:

___ 0% confident ___ 20% confident ___ 40% confident
___ 60% confident ___ 80% confident ___ 100% confident

6.) To what extent, if any, did the COVID-19 pandemic impact your learning how to or actually performing the behavior of ***negotiating with my partner(s) regarding condom use (or use of a condom on a sex toy, or internal condom, or dental dam, or latex or nitrile gloves)***

0 ___ No impact at all 1 ___ Very low impact 2 ___ Low impact 3 ___ Moderate impact
4 ___ High impact 5 ___ Very high impact

Subscale 3 Safer Sexual Behavior: Refusing unprotected sex

7.) When it comes to the behavior of ***refusing to have unprotected sex***, check the following that most applies to you:

___ I am not thinking of doing this behavior at all.
___ I am thinking about doing this behavior.
___ I am preparing to do this behavior.
___ I have been doing this behavior for less than six (6) months.
___ I have been doing this behavior for more than six (6) months.

8.) When it comes to the behavior of ***refusing to have unprotected sex***, how confident are you in performing this behavior:

___ 0% confident ___ 20% confident ___ 40% confident
___ 60% confident ___ 80% confident ___ 100% confident

9.) To what extent, if any, did the COVID-19 pandemic impact your learning how to or actually performing the behavior of ***refusing to have unprotected sex***

0 ___ No impact at all 1 ___ Very low impact 2 ___ Low impact 3 ___ Moderate impact
4 ___ High impact 5 ___ Very high impact

Subscale 4 Safer Sexual Behavior: Having a supply of condoms (or dental dams, or latex or nitrile gloves)

10.) When it comes to the behavior of ***having my own supply of condoms (or dental dams, or latex or nitrile gloves)***, check the following that most applies to you:

___ I am not thinking of doing this behavior at all.
___ I am thinking about doing this behavior.
___ I am preparing to do this behavior.
___ I have been doing this behavior for less than six (6) months.
___ I have been doing this behavior for more than six (6) months.

11.) When it comes to the behavior of ***having my own supply of condoms (or dental dams, or latex or nitrile gloves)***, how confident are you in performing this behavior:

___ 0% confident ___ 20% confident ___ 40% confident
___ 60% confident ___ 80% confident ___ 100% confident

12.) To what extent, if any, did the COVID-19 pandemic impact your learning how to or actually performing the behavior of ***having my own supply of condoms (or dental dams, or latex or nitrile gloves)***

0 ___ No impact at all 1 ___ Very low impact 2 ___ Low impact 3 ___ Moderate impact

4 ___ *High impact* 5 ___ *Very high impact*

-----END OF SURVEY-----

THANK YOU!

SHARE WITH OTHERS THE LINK THAT LED YOU TO THIS STUDY!

** Inviting May & June 2022 college graduates to take a 15-minute survey on their romantic, dating, and sexual relationships before & during the pandemic, & currently, by clicking on [PandemicImpactOnLoveLife](#) for a 3 in 250 chance of winning 1 of 3 \$100 Amazon gift cards.*

COUNSELING RESOURCES

If you need immediate assistance, please refer to the following contact information.

You can download this page with contact information for counseling resources, OR SKIP TO THE LINK, BELOW, FOR ENTERING YOUR EMAIL INTO THE LOTTERY DRAWING FOR A CHANCE TO RECEIVE A PRIZE (i.e., 1 of 3 bar coded Amazon gift certificates for \$100).

1-For Free Texting Crisis Help:

You text 741741 when in crisis as a service available 24 hours a day, 7 days a week. You will reach a live trained Crisis Counselor who will respond quickly. The Crisis Counselor helps to move you from a hot moment to a cool calm and safe state, using effective active listening and suggested referrals—all using the Crisis Text Live’s secure platform. If you have a phone plan with AT&T, T-Mobile, Sprint, or Verizon, texting to 741741 is free of charge.

2-Contact a Crisis Intervention Hotline for Immediate Help and Referrals:

https://www.allaboutcounseling.com/crisis_hotlines.htm

Examples of Crisis Intervention Hotlines: If you are in immediate danger, call 911

The Lifeline and 988: **988** has been designated as the new three-digit dialing code that will route callers to the National Suicide Prevention Lifeline. The Grief Recovery Helpline: 1-800-445-4808.

3-Seek Out Top Rated, Low-Cost Online Counseling Services List:

<https://www.e-counseling.com/tlp/therapy-1/?imt=1>

Please see a list of the top-rated online counseling services—for a “low flat fee”

4-Seek Out Affordable Online Counseling: <https://www.betterhelp.com/about/>

Access affordable and convenient online counseling with professionals.

5-Seek Help from the Study Sponsor by E-Mail or Phone: **bcw3@tc.columbia.edu** or 267-269-7411 (i.e., the study contact number). You may contact the study sponsor, Dr. Barbara Wallace, receiving help with referrals. Dr. Wallace is a licensed psychologist with experience working with the study population.

**Inviting May & June 2022 college graduates to take a 15-minute survey on their romantic, dating, and sexual relationships before & during the pandemic, & currently, by clicking on [PandemicImpactOnLoveLife](#) for a 3 in 250 chance of winning 1 of 3 \$100 Amazon gift cards.*