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Racial Differences in Hormonal Contraception Use and Accessibility Among University of South Carolina-Columbia Undergraduate Women

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Abstract

The objective of this study is to see if there are racial disparities in hormonal contraception use amongst UofSC Columbia undergraduate women, similar to nationwide trends noted in previous studies. This research is important as undesired pregnancies are more prevalent for Black and Hispanic women, and recent legislative changes throughout the nation - and specifically in South Carolina - are challenging abortion rights, thereby increasing the importance of birth control in preventing an undesired pregnancy. Increasing access to hormonal birth control serves to increase body autonomy and a woman's agency over reproduction, specifically in the face of these current challenges to reproductive rights. A survey of 273 undergraduate women was conducted to determine if a racial disparity existed on hormonal contraception use. Additionally, I investigated the common barriers to hormonal contraceptive access, how students are gaining information on hormonal contraception, and how many legal changes in South Carolina are affecting demand and accessibility of hormonal contraception among UofSC undergraduate women. Analysis of the data found that there was not a significant difference in hormonal contraception use amongst Black, Hispanic, and Asian students compared to their White peers. However, there were racial differences in how students were gaining information on hormonal contraception, which reveals different avenues for increasing the availability, accuracy, and reliability of resources on the topic. Other findings reveal that these students are open to the newly passed "Pharmacy Access Act" in South Carolina. Surveyed students also have a greater desire for hormonal birth control in the face of abortion restrictions and are concerned about changing legislation that impacts the accessibility of information on abortion, and indirectly birth control, online.

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Introduction

Hormonal Contraception Disparities

In the United States, around 5% of women that are of reproductive age will experience an unintended pregnancy each year (Frost, 2011), with around 45% of all pregnancies experienced over one's life being unintended (Sawhill & Guyot, 2017). Not only does this represent a general problem that can lead to greater stress, economic strains, and possible ill health effects for the mother (Chernick et al, 2015), but racial trends in unintended pregnancies indicate that some of the most marginalized minority communities are most at risk (Kim et al., 2016). Compared to White women, Black and Hispanic women have significantly higher rates of unintended pregnancy (Kim et. Al, 2016). This trend is present at all age ranges, from the teenage years to menopause, and is noted to be more prominent at younger ages (Dehlendorf et al., 2014). The racial disparity in unintended pregnancy significantly impacts minority women, making it more difficult to make social and economic gains (Kim et. Al, 2016).

One of the most effective methods of preventing unintended pregnancy is the use of contraceptive methods (Eisenberg et al., 2012). Hormonal contraception methods, such as oral contraception or "the pill", long-acting reversible contraception methods (IUD, IUS, and other implants), and contraceptive patches, are more than 99% effective at preventing pregnancy with perfect use (Chernick et al, 2015), and 91% to 93% effective with "typical use" (Britton et al., 2020). Using either estrogen and progestin, or solely progestin, these methods work by preventing ovulation, combatting sperm survival by increasing mucus thickness in the cervix, or decreasing chances of implantation by making the uterine lining thinner (Eisenberg et al., 2012).

These hormonal contraceptive methods represent an overall healthy and effective strategy for preventing pregnancy.

However, past research has noted racial-ethnic differences in contraceptive use (Dehlendorf et al., 2014; Grady et al., 2015). While most women use some form of contraception during sex (i.e., 90% women who want to avoid pregnancy use some form of contraception) (Dehlendorf et al., 2014), Black women are less likely than White women to use any form of contraception (Grady et al., 2015). Study of the 2006-2010 National Survey of Family Growth also revealed that Black and Hispanic women are less likely to use more effective contraceptive methods, such as hormonal birth control, instead electing to use less effective barrier birth control methods such as condoms and “the withdrawal method” (Grady et al., 2015). The racial discrepancy in use of hormonal birth control could further the disparity in unintended pregnancies for minority women and represents an obstacle for equal family planning outcomes.

Disparities in hormonal contraception use among minority women may also impact how these women access the non-contraceptive benefits of hormonal birth control. Past clinical studies have supported oral and IUD hormonal contraception use in decreasing the risks and effects of iron deficiency anemia (Fischer et al., 2021), breast, endometrial, and ovarian cancer (Michels et al., 2018), pelvic inflammatory disease (Rubin et al., 1982), and ectopic pregnancy (Edelman & Porter, 1987). Hormonal contraception is also commonly prescribed for treating menstrual pain and irregular menstrual cycles, acne, hormonal imbalance, and endometriosis (Britton et al., 2020). As a result, disparities in hormonal contraception use can lead to different health outcomes for different demographics of women, highlighting the need for increasing the accessibility of hormonal contraception.

Barriers to Hormonal Contraception

To expand the overall use of hormonal contraception, and reduce racial disparities in their use, it is necessary to note the barriers impacting hormonal contraception use among minority women. Past research has highlighted possible barriers to contraception access, such as a lack of knowledge on effectiveness of different contraception methods (Sangi-Haghpeykar et al., 2006; Dehlendorf et al., 2010; Borrero et al., 2011), fear of health impacts (Rocca & Harper, 2012; Chernick et al, 2015), financial constraints (Chernick et al, 2015), and medical mistrust, specifically in women's health (Armstrong et al., 2007; Kennedy et al., 2007) . In terms of knowledge on contraception, Hispanic women have been noted to be more likely than White women to “not know” both the contraceptive and non-contraceptive benefits of hormonal contraception (Sangi-Haghpeykar et al., 2006), and were more likely to believe misinformation about hormonal contraception, such that it causes birth defects (Sangi-Haghpeykar et al., 2006). These findings were independent of age, education, and marital status. It is hypothesized that this difference in knowledge on hormonal contraception among Hispanic women is the result of relying more on friends and family, as opposed to medical opinions, for information on birth control, specifically among younger Hispanic women (Gilliam et al., 2004). Another study found that while Black and White women were equally aware of several methods of hormonal contraception, Black women were less likely to have knowledge of IUDs, regardless of socioeconomic status (Borrero et al., 2011).

Regarding health concerns, hormonal contraceptives have been linked to increases in the risk of cardiovascular disease, such as venous thromboembolism, myocardial infarction, and stroke (Prentice & Thomas, 1987), issues that already more negatively impact Black women compared to other races (Balla et al., 2020). A national study of women aged 18-29 on the fear

of health concerns with hormonal contraception use cite side effect concerns are prevalent among Black, Hispanic, and White young adult women (Rocca & Harper, 2012). Overall, women of different races have concerns over the side effects of hormonal birth control, which can influence use.

However, a unique factor that may contribute to Black and Hispanic women's lower use of contraception may be higher rates of medical mistrust (Armstrong et al., 2007). It is noted that much of this mistrust is associated with government oversight of approval of medications. This mistrust is primarily focused on the methods by which clinical trials are conducted. This mistrust is rooted in the history of slave experimentation in approving medical interventions, the US Public Health Service's role in the Tuskegee Syphilis Study, and more generally with present day discrimination throughout the nation (Armstrong et al., 2007; Kennedy et al., 2007). This mistrust among African Americans has been correlated with age, as increased age and exposure to the healthcare system are correlated with greater trust, with younger individuals having lower trust in physicians (Boulware et al., 2003). For example, a study of young adults aged 18-29, analyzing attitudes of Black and Hispanic women towards contraceptives, found that they were more likely than White women to believe that the government was using birth control for eugenic purposes and that minority women were being disproportionally affected in clinical trials of birth control (Rocca & Harper, 2012). The results of this study also noted that skepticism of the government regarding the approval of birth control methods was associated with the choice of birth control methods (Rocca & Harper, 2012).

Hormonal Contraception Use in Young Adult College Women

While racial disparities are noted for women across different age classes (Grady et al., 2015), certain studies focusing specifically on hormonal contraception use among young college women have revealed similar and more alarming trends for this specific age class.

Undergraduates, ages 18-24, sampled in the 2007 American College Health Association-National College Health Assessment were found to have disparities in hormonal contraception use, with undergraduate Black women having lower use of hormonal contraception than undergraduate White women, as well as higher rates of unintended pregnancy, at a rate of more than one and a half times larger (Buhi et al., 2010). Further analysis of the 2006-2010 National Survey of Family Growth revealed that younger women, in the 15-19 and 20-29-years age ranges, were noted to have larger disparities in hormonal contraception use by racial-ethnic group, except for young Hispanic women aged 15-19 (Dehlendorf et al., 2014). As age increased, the disparity of hormonal contraception use by race-ethnicity decreased (Dehlendorf et al., 2014). As such, there is a noted intersection between age and race/ethnicity when it comes to hormonal contraception use, that is expected to influence greater disparity in hormonal contraception use rates with younger age classes, specifically age ranges that include most undergraduate women. This intersection increases the need for study of hormonal contraception use among young adult college women, to aid in decreasing this disparity and increasing access to contraception.

Changing Birth Control and Abortion Accessibility

The 2022 Supreme Court decision of *Dobbs v. Jackson Women's Health Organization*, the 1973 *Roe v. Wade* decision overturned a constitutional right to an abortion. As a result, many states, specifically in the Southeast and other states with Republican controlled state legislatures

have begun drafting and passing legislation aiming to restrict abortion rights. As abortion rights are being challenged, many women, especially minority women, will become more vulnerable to unintended pregnancies as abortion will no longer be an option in their states. This increases the importance of birth control access as preventing a pregnancy will be the only avenue for women in states banning abortion. However, current legislation recently passed or proposed are both increasing and decreasing access to birth control, specifically hormonal birth control. Within proposed legislation in Texas, Idaho, and Missouri, bans on abortion and emergency contraception could provide avenues for banning hormonal birth control methods, specifically IUDs, as they “prevent the implantation of an unborn child” (National Women’s Law Center, 2022).

The state of South Carolina, being of particular interest in this study, has a series of passed and proposed bills that address abortion and hormonal contraception accessibility. The SC Senate passed 2023-2024 S.240, banning abortion in the state after fetal cardiac activity is detected, typically six weeks after conception (Garrett, 2023). The SC House passed 2023-2024 H.3774 banning abortion following conception except in the cases of rape, incest, fatal fetal abnormalities, and to save the mother’s life (McCravy, 2023). While the bills have not currently gone into effect as both chambers need to reach an agreement on their exceptions, abortion rights in the state are being challenged and will continue to be. With both medical providers and patients at risk of legal consequences with these bills, the medical relationship between both parties can be affected to avoid legal risks while also attempting to provide or receive appropriate medical care. During the 2021-2022 SC legislative session, bill S.1373, which aimed to ban abortion throughout the state, also called for the banning of information on abortion services online in SC which would directly limit the accessibility of abortion information

throughout the state (Cash et al., 2022). It is possible that given the ambiguity around some forms of hormonal birth control that can stop implantation, this proposed ban could be extended towards information on these forms of birth control.

While the state has made significant strides towards abortion bans, a recently enacted law, the “Pharmacy Access Act”, will help expand birth control access. Under the new law, pharmacists can prescribe self-administered birth control, such as hormonal birth control pills, without the need of a prescription from a physician (Davis, 2021). If access to a prescription through a doctor or other healthcare professional is a significant barrier to hormonal birth control as previous studies have hypothesized (Eisenberg et al., 2012; Dehlendorf et al., 2014; Chernick et al, 2015), the bill has potential to help expand hormonal birth control access in the state.

Current Study

Given the increasing need to address previously noted disparities in hormonal contraception use among minority women, and specifically younger women, it is necessary to conduct studies to analyze the possible presence of these disparities within specific communities. Thus, the point of this study is to conduct an analysis of hormonal contraception use and access among a particular population of interest, undergraduate women at the University of South Carolina-Columbia campus. In doing so, it is possible to discern whether there are disparities in hormonal contraception use among different racial demographics of students at UofSC, reasons for hormonal contraception use, self-identified barriers to hormonal contraception, how students gain access to hormonal contraception counseling and information, and how current legislative changes in the state concerning abortion and birth control are affecting students’ desire for and access to hormonal contraception. If disparities in use and barriers to access are identified, it can

provide an avenue for local and university health officials to target specific needs for increasing hormonal contraception access at UofSC. This can allow the university to make note of specific problems that can be addressed through targeted new policy to help increase contraception use on campus and help combat the high rates of unintended pregnancy in the United States (Sawhill & Guyot, 2017). Given the drastic impacts that unintended pregnancies can have on women, and especially marginalized minority women (Kim et al., 2016), it is vital that policy is implemented to increase effective contraception use and actively eliminate barriers to birth control. It is also important to analyze hormonal contraception access within the lens of the post-Roe climate, as restrictions on abortion access threaten women's bodily autonomy.

Methodology

For this study, a survey was conducted amongst undergraduate students at the University of South Carolina Columbia campus who self-identified as cis-gender women. To distribute the survey, Google Forms was used to provide anonymity and allow for a greater distribution network. To access respondents, the survey link was shared amongst different classes and clubs on campus, and respondents were encouraged to share the survey with their friends and classmates. There was an attempt to reach students from a variety of majors, ages, and backgrounds. Following agreement to participate in the study, the survey collected information on the respondents' demographics including racial identity, gender identity, age, student classification, GPA, relationship status, religious identity, and in-state/out-of-state status. For the questions on the respondent's use, access to, and knowledge of hormonal contraception, there were three sections. The first section "Contraception Use" contained questions on whether a respondent uses a form of hormonal birth control, reason(s) for using hormonal contraception,

and the reason they believe is most influential on why women would refuse hormonal contraception. The second section of the survey “Access to Hormonal Contraception Information” contained questions on how respondents accessed information on hormonal contraception, including which, if any, healthcare professionals respondents have discussed hormonal contraception with. These questions included perceived access to the UofSC Student Health Services, the medium for the dialogue with providers, alternative resources utilized to gain information on hormonal contraception, and the respondent’s trust in informational resources. The final section “South Carolina Legislative Changes” contained questions on the respondent’s attitudes on receiving hormonal contraception from a pharmacist under the SC “Pharmacy Access Act,” how abortion restrictions in the state under potential bills 2023-2024 S.240 and 2023-2024 H.3774 affected their desire for hormonal birth control and their comfort in discussing contraception with healthcare professionals, and how the passing of SC 2021-2022 Bill S.1373 would impact their trust of abortion and contraception information online. Questions in this section were answered using a 4-point Likert scale to determine respondents’ attitudes towards how recent South Carolina legislative proposals and newly enacted laws will impact respondents’ views on Hormonal Birth Control accessibility and information. In all there were a total of 23 questions, and the survey took approximately 10-15 minutes to complete. See Appendix A for all survey questions.

To submit any responses to the survey, respondents had to complete the survey in its entirety. Since there is an underrepresentation of Black and Hispanic students at UofSC, Black and Hispanic students were deliberately oversampled to provide an adequate sample size for comparison. To do this, club organizations that focus on specific aspects of identity, such as race,

ethnicity, and gender, were contacted to aid in survey distribution to targeted groups, leading to a overall sample size of 273 individuals.

Analytical Strategy

The data analysis proceeded in the following ways: First, I separated the responses from each respondent by self-reported race/ethnicity. For all sections of the survey, White respondents were utilized as the reference group for comparison to the Black, Hispanic, and Asian respondents individually. Secondly, I conducted a bivariate analysis for the “Contraception Use” and “Access to Hormonal Contraception” responses, comparing the percentage of respondents who selected each answer for the questions. To test significance for the “Contraception Use” and “Access to Hormonal Contraception” section data, I utilized Welch’s unpaired t-tests due to the unequal sample size and variation differences calculated from each group’s responses. A p value of less than 0.05 was used for significance between the responses for the specific group of interest and the reference group. For the final section, “South Carolina Legislative Changes”, I conducted analysis of the 4-point Likert scale responses by quantifying the responses to be used for parametric analysis. I assigned values for Strongly Agree (1), Agree (0.75), Disagree (0.25), and Strongly Disagree (0), to weigh the strength in responses and to calculate an average sentiment towards each question, both overall for all respondents and for each racial group. I compared the average sentiments of the Black, Hispanic, and Asian respondents to the reference group through bivariate analysis using a Welch’s unpaired t-test to determine significance, which was represented with a p value of less than 0.05. All analysis was conducted using R version 4.13 (The R Foundation, Indianapolis, IN).

Results

Demographic Information

Table 1 contains the demographics of the 273 respondents to the survey. Of the 273, 51.28% identified as White, 27.47% as Black, 8.43% as Hispanic, and 12.82% as Asian. Ages ranged from 18 to 22 years old, with a mean age of 20.06 years old. Of the respondents, 43.96% respondents were classified as Seniors, 19.41% as Juniors, 21.25% as Sophomores, and 15.38% as Freshmen. The majority (75.46%) of the respondents' GPA was 3.5-4.0, followed by 24.18% with a GPA of "3.0-3.49", and 0.37% with a GPA of "2.5-2.99." A total of 56.04% of the respondents had a relationship status of "dating" and 43.96% reported being "single". Religious identifications were predominantly Catholic, Atheist, or Protestant, with other religions represented in smaller numbers. In-state students were the majority of the sample at 71.06% versus 28.94% being out of state students.

Contraception Use

Table 2 denotes the responses for the first section of the survey, "Contraception Use." 64.29% of White respondents were using a form of hormonal birth control, compared to 57.33% of Black respondents, 56.52% of Hispanic respondents, and 51.43% of Asian respondents. In comparison to the reference group of White respondents, none of the minority groups had a significantly different usage rate of hormonal birth control.

Most respondents selected multiple reasons for using hormonal birth control. Preventing unwanted pregnancy was the most popular option (84.15%), followed by menstrual regulation (66.46%), menstrual pain treatment (50%), acne treatment (35.98%), hormonal imbalance

treatment (19.51%), and endometriosis treatment (3.05%). Differences in reasons for taking hormonal birth control were also found to be non-significant among racial demographics. Black students were statistically more likely to be taking hormonal contraception to prevent a pregnancy compared to White Women (100% versus 83.33%), while also being less likely to cite menstrual regulation (48.84% vs 83.33%) and acne (23.26% vs 44.44%), hormonal imbalance (11.63% vs 27.78%), or endometriosis treatment (5.56% vs 0%) as a reason for taking hormonal birth control. Hispanic students were statistically less likely than White students to use hormonal birth control for menstrual regulation (46.15% vs 83.33%) and acne (15.38% vs 44.44%) or endometriosis treatment (5.56% vs 0%). Asian students reported use of hormonal birth control for menstrual regulation (38.89%), menstrual pain treatment (0%), and hormonal imbalance (0%) and endometriosis treatments (0%), at a statistically lower rate than White students.

Among the responses to the question on the most influential barriers to birth control, the most popular responses overall were economic barriers/cost (38.46%), health concerns (29.30%), religious reasons (9.89%), opposition from others (7.69%), lack of knowledge (7.33%), and lack of a prescription (5.49%). The responses displayed in figure 1 reveal that the most popular response for each racial demographic was “economic barriers/cost” and differences across racial demographics were not significant. The second most popular choice regardless of racial identity was “health concerns,” without a significant racial-ethnic difference. Hispanic students were less likely to report “opposition from others” as a reason to not take hormonal contraception (0% vs 3.57%), while Asian students were statistically more likely to report this choice (25.71% vs 3.57%). Hispanic and Asian students were both statistically less likely to report “lack of a prescription” (0% and 0% vs 3.67%) and “lack of knowledge” (0% and 0% vs 10.71%) as primary barriers to hormonal contraception use compared to White students.

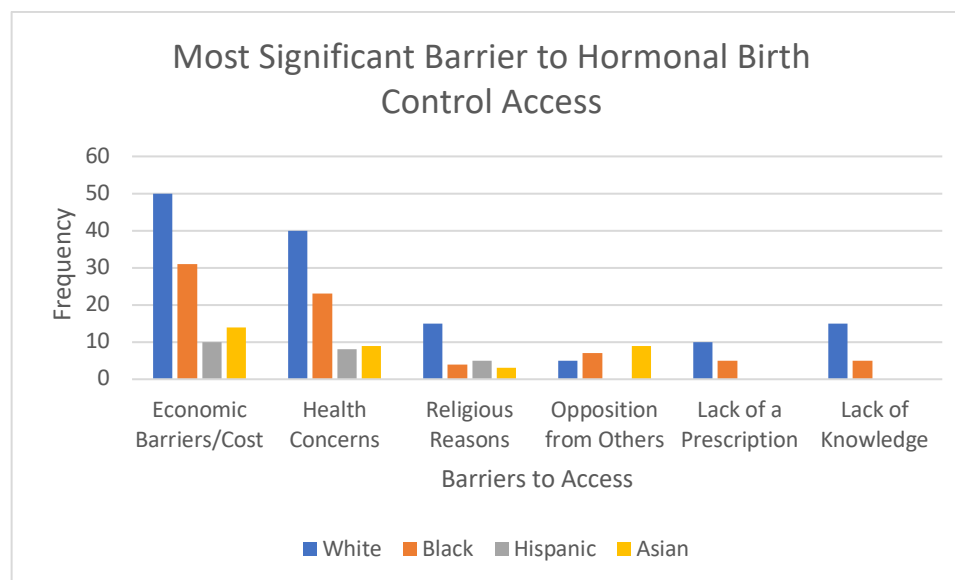


Figure 1: Results for the question on the most influential barriers to hormonal birth control use (Question 4)

Access to Hormonal Contraception Information

Table 3 illustrates the responses for the second section of the survey, “Access to Hormonal Contraception Information”. Most respondents, 90.85%, have had a discussion on hormonal birth control with a healthcare professional electing to take (63.74%), or not take (27.11%) hormonal birth control. However, Black (57.33%) and Asian (56.52%) students were statistically less likely to have had a discussion with a healthcare provider about birth control, and then elect to use hormonal birth control compared to White students (71.43%). Asian students were also more likely than White students to elect out of using hormonal birth control following the discussion, at 48.57% versus 21.43%. While Hispanic and Asian respondents were more likely than White women to have received any information on hormonal birth control from a healthcare provider, Black respondents were less likely than White respondents to receive any

form of information, with 20% of Black respondents noting that they have not received this information from a healthcare provider. Respondents predominantly discussed hormonal birth control with a primary care physician (78.63%) or gynecologist (66.13%), a relationship that held over the different racial demographics. However, Black (100%) and Asian students (82.86%) were statistically more likely than White students (69.23%) to have spoken with a primary care physician on the topic. Both Black (70%) and Asian (28.57%) students were also statistically less likely to have spoken to a gynecologist about birth control compared to White students (76.92%). Black, Hispanic, and Asian respondents were less likely to speak to a pharmacist as well at rates of 0% for these minority groups vs 3.85% for White respondents. Hispanic women spoke with physician assistants less than white women (0% vs 3.85%), while Asian women were less likely to speak with a physician assistant (0% vs 3.85%) or nurse practitioner (0% vs 15.38%) compared to white women. Most respondents in each racial category spoke with medical providers outside of the UofSC Student Health Services (78.23%) and the majority also did so in-person as opposed to online (94.35% vs 5.65%). Hispanic and Asian were statistically more likely to do so in-person compared to their White peers.

For sources of information on hormonal birth control, healthcare professionals (89.29%), the internet (83.52%), friends/classmates (77.66%), and family members (70.70%) were used by most respondents in each racial category. Results by racial/ethnic background are recorded in Figure 2. Hispanic and Asian students were statistically more likely to use healthcare professionals as a resource compared to White students at rates of 100% vs 89.29%. Compared to the reference group, Black students used former “sex-ed” teachings less at 9.33% compared to 25% but were more reliant on the internet for hormonal birth control information, with 93.33% of Black respondents using it as a resource compared to 79.29% for White respondents. Hispanic

respondents were also statistically more likely to use the internet (100%) compared to White respondents (79.29%). Black and Hispanic students used friends and classmates as a resource statistically more often than White students (90.67% and 91.30% vs 67.86%).

Regarding which sources of information on hormonal birth control are most trustworthy overall, healthcare professionals were trusted by 93.04% of respondents, followed by the internet (73.26%), friends/classmates (66.30%), and family members (28.94%). Sex-ed was not trusted by any respondents. Healthcare professionals were trusted by most respondents regardless of race. Hispanic and Asian students were statistically more trusting of healthcare professionals than White students (100% vs 92.86%). Black respondents were statistically more likely to trust the internet (100% vs 67.14%), while Hispanics were less likely (30.43% vs 67.14%), compared to White respondents. Asian and Black students also had more trust in their friends and classmates for hormonal birth control information than White students at 88.57% and 100% vs 46.43% respectively. Black (25.33%), Hispanic (0%), and Asian (14.29%) respondents were statistically less likely to trust their family members for hormonal birth control information compared to White respondents (39.29%).

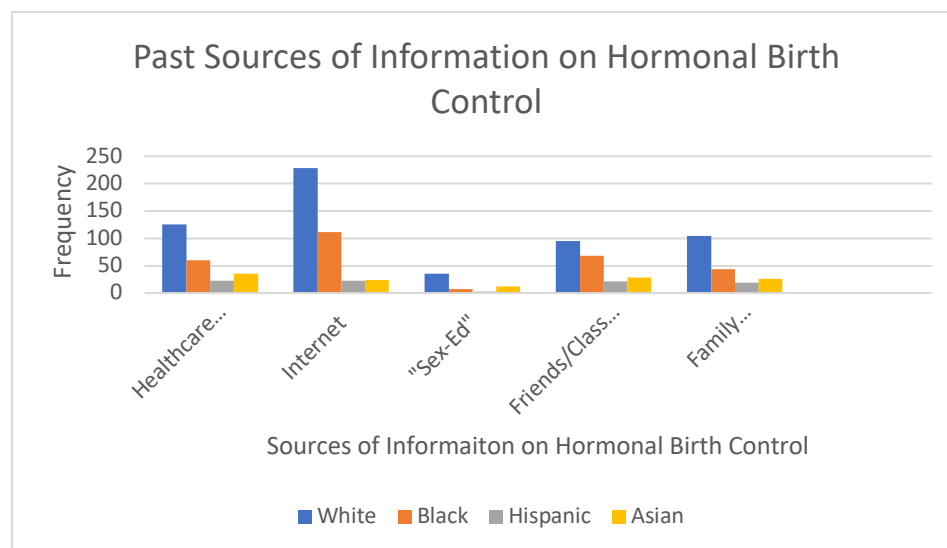


Figure 2: Results for the question on past sources of information on hormonal birth control (Question 9)

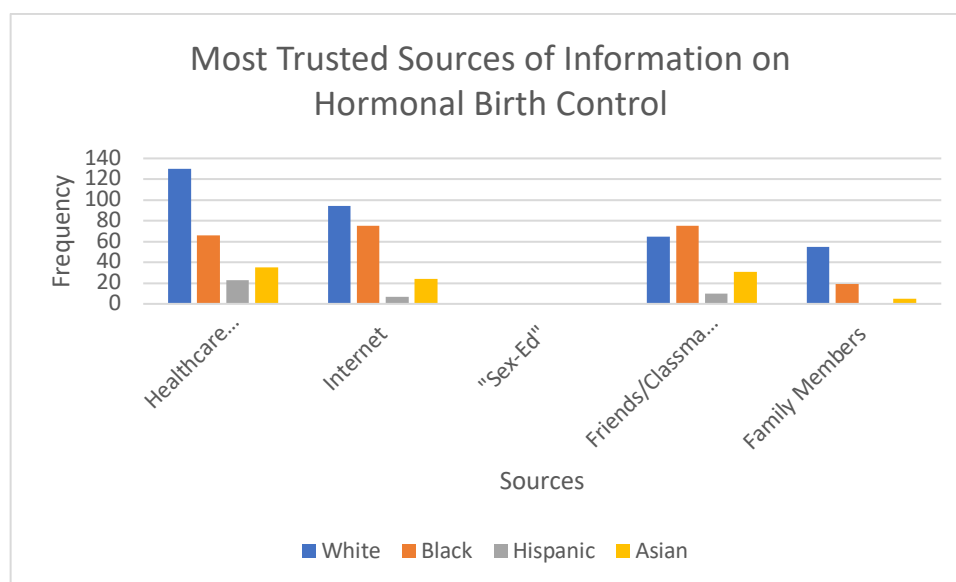


Figure 3: Results for the question on the most trusted sources of information on hormonal birth control (Question 10)

South Carolina Legislative Changes

Table 4 contains the responses to the questions from the “South Carolina Legislative Changes” section of the survey. Concerning the “Pharmacy Access Act,” most respondents, regardless of racial identity, agreed (39.19%) or strongly agreed (45.05%) that they would be comfortable discussing hormonal birth control with a pharmacist, with an average sentiment of 0.7839 (SA: 123, A:107, D:43, SD:0). Strongly agree was the most popular opinion followed by agree. However, Hispanic women were statistically less likely than White women to be comfortable with this at an average sentiment of 0.6739 (SA:7, A:9, D:7, SD:0) compared to 0.8125 (SA:65, A:60, D:15, SD:0). White women were agreeing more strongly than Hispanic women, who were also more likely to hold a “disagree” opinion. The spread in responses for this

question is presented in Figure 4. The majority of respondents, regardless of racial identity, also agreed (24.18%) or strongly agreed (60.44%), with an average sentiment of 0.8196, (SA:165, A:66, D:37, SD:5), that they would be encouraged to take hormonal birth control to avoid unwanted pregnancy if abortion restrictions through SC bills 2023-2024 S.240 and 2023-2024 H.3774 were passed. Most students strongly agreed with this statement. There was no statistically significant variation between racial demographics for this response and is represented in Figure 5. A slight majority of individuals disagreed (47.25%) or strongly disagreed (14.65%), with an average sentiment of 0.4670, (SA:60, A:44, D:129, SD:40), with the idea that abortion right restrictions in South Carolina would make them less comfortable discussing hormonal birth control with a medical professional. Asian women were statistically more likely to have a “disagreeing” opinion than White women with an average sentiment of 0.3571 (SA:5, A:0, D:30, SD:0) compared to 0.4821 (SA:35, A:25, D:55, SD:25). The comparison in results for this question are presented in Figure 6. Upon being presented with information on SC bill 2021-2022 S.1373, indicating that it would ban information online on abortion services in South Carolina, most respondents in each racial demographic agreed (45.79%) or strongly agreed (38.46%), with an overall sentiment of 0.767 (SA:105, A:125, D:43, SD:0), that if the bill passed, they would not trust information online in SC on abortion access, with no statistical variation by race, as presented in Figure 7. However, in the same scenario, a slight majority of respondents regardless of race agreed (28.21%) or strongly agreed (26.01%), with an average sentiment of 0.5778 (SA:71, A:77, D:119, SD:7), that they would not trust information on hormonal birth control online in SC with no statistical significance by race, as presented in Figure 5. Overall, 43.59% of respondents “disagreed” with this statement.

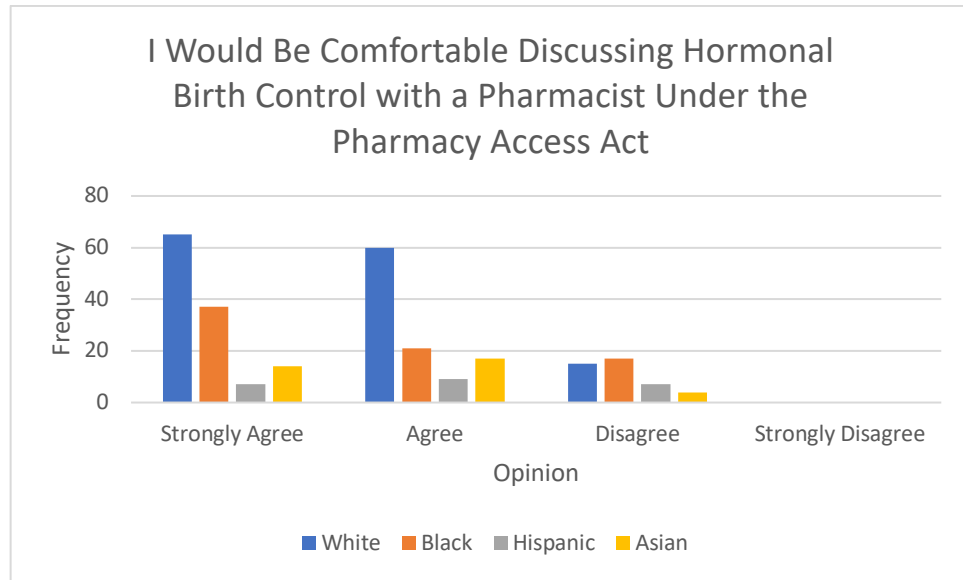


Figure 4: Results for the “Pharmacy Access Act” question (Question 11).

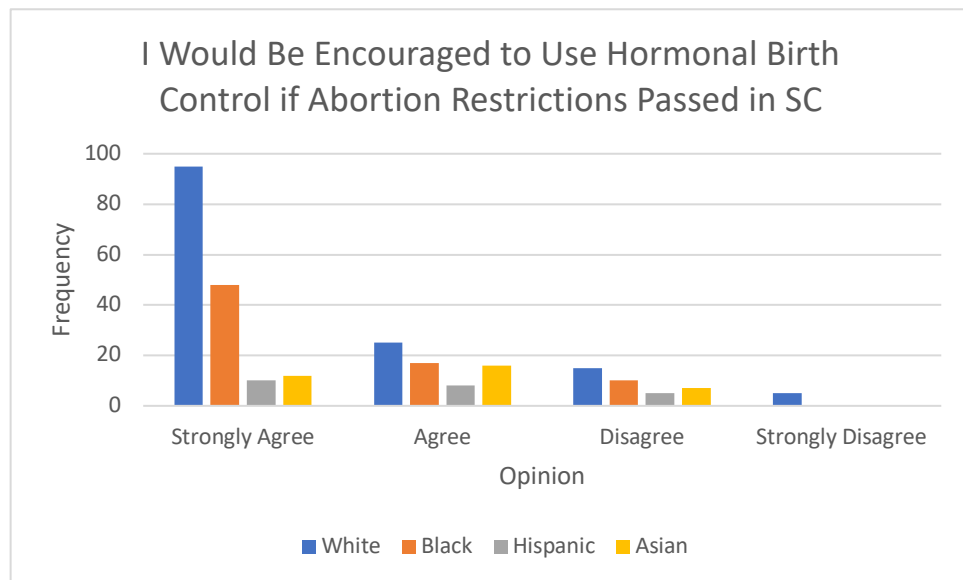


Figure 5: Results for the influence of abortion bans on hormonal birth control demand question (Question 12)

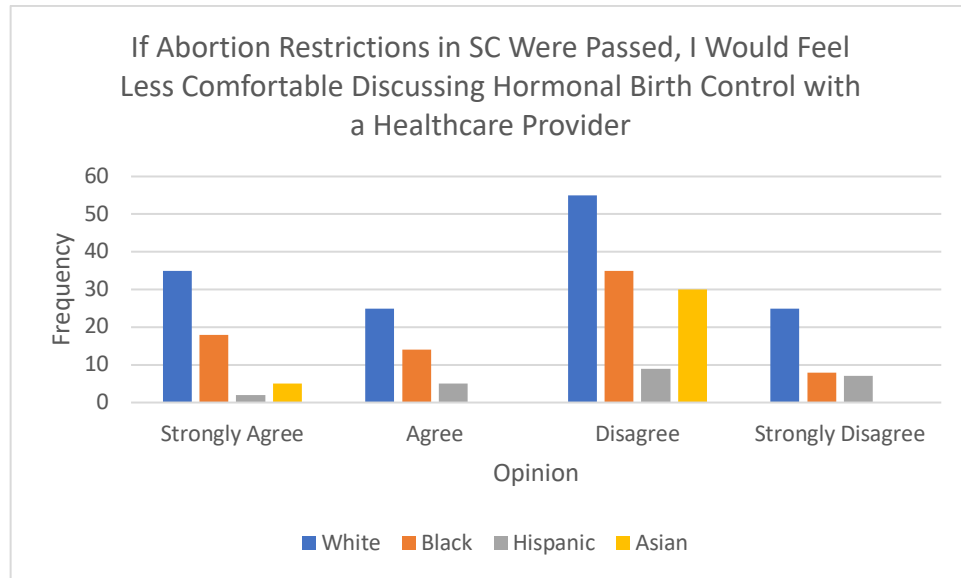


Figure 6: Results for the influence of abortion bans on comfort in discussing hormonal birth control with a healthcare provider question (Question 13)

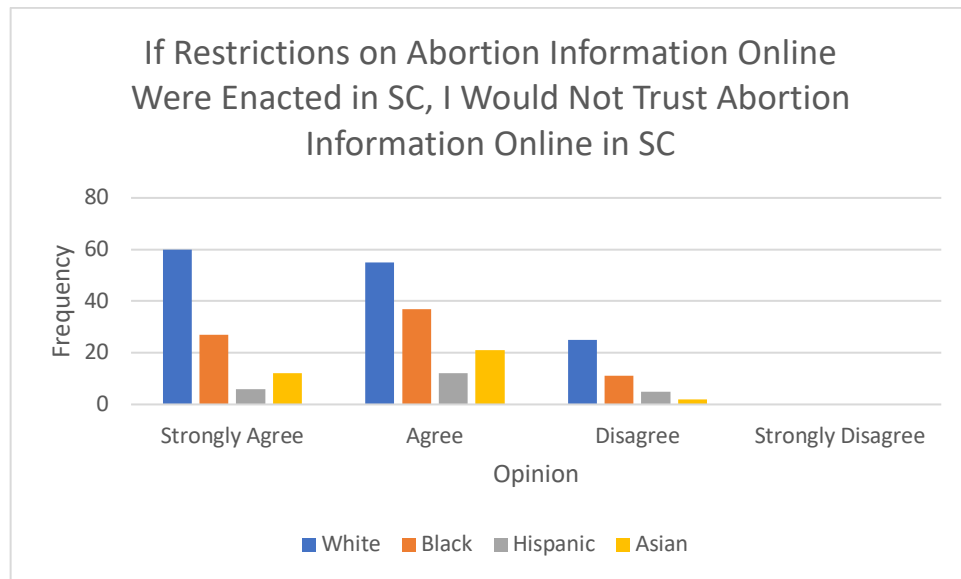


Figure 7: Results for the influence of bans on abortion information online on trust in online abortion resources question (Question 14)

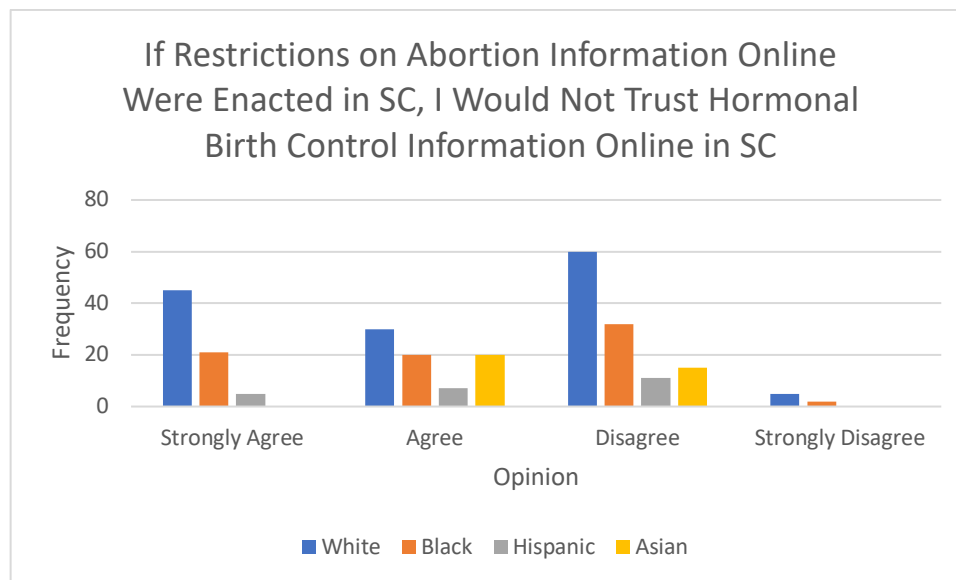


Figure 5: Results for the influence of bans on abortion information online on trust in online hormonal birth control resources question (Question 15)

Discussion

The primary goal of this thesis was to determine if there is a race-ethnic disparity in hormonal contraception among women at the University of South Carolina Columbia campus, while also noting influential barriers to hormonal contraception access, avenues for the distribution of information on hormonal contraception, and the impact of recent legislation in South Carolina on hormonal contraception access for students in the state. Results suggest no statistical difference in hormonal contraception use for minority women in comparison to their White peers. Contrary to other surveys using nationally representative samples, I find in my sample of UofSC undergraduates that there was not a significant racial disparity in hormonal contraception use. These differences may be explained by students having similar levels of education, being undergraduate students, as education level has previously been hypothesized to impact hormonal contraception use (Dehlendorf et al., 2014). It is also possible that equal access

resources available on campus through the Student Health Center aid in expanding hormonal contraception access, decreasing the effect of disproportionate access to off-campus resources, thus decreasing disparities among students. The use of a convenience sample may also influence the results, as those who are educated on or currently taking hormonal birth control may be more inclined to participate in the study. Nevertheless, this finding is reassuring, as there is a similar level of hormonal contraceptive use among sampled students which can help to prevent unwanted pregnancy for students, while also helping treat a variety of other conditions. However, it is important that there is not complacency with this finding, as other findings noted in this survey leave avenues open for future disparities and must be addressed.

Regarding reasons for taking hormonal birth control there was some variation based on race-ethnicity. While the desire to avoid unwanted pregnancy was the most popular reason for taking hormonal birth control regardless of race, Black respondents were significantly more likely to be taking hormonal birth control for this purpose compared to White women. They were also less likely to cite menstrual regulation and acne, hormonal imbalance, or endometriosis treatment as a reason for taking hormonal birth control compared to White women. Hispanic students were statistically less likely than White students to using hormonal birth control for menstrual regulation and acne or endometriosis treatment. Asian students reported use of hormonal birth control for menstrual regulation, menstrual pain treatment, and hormonal imbalance and endometriosis treatments at a statistically lower rate than White students. This variation indicates a clear difference in the goals of using hormonal birth control between students of different race-ethnicities, supporting the conclusion that minority students are more likely to use hormonal birth control for its more direct purpose, preventing pregnancy, while White students are more likely to be looking for the secondary benefits, such as acne and

hormonal imbalance treatment, on top of preventing pregnancy. Whether this difference in intended use is because of greater need for a particular benefit, such as a desire to avoid higher rates of unwanted pregnancy present in Black and Hispanic women, differences in knowledge of secondary benefits, or other factors is an option for future study as it is important that women are informed on the many benefits of hormonal birth control.

Economic barriers and cost were the most popular obstacle to hormonal birth control use, a concern that was represented in each racial demographic. The popularity in this response indicates that UofSC students, regardless of race-ethnicity, are concerned about the cost of birth control options, which is a general nationwide trend in regard to contraception access (Chernick et al, 2015). As such, previous challenges to coverage of birth control in health insurance plans by the Trump administration and state legislatures that was previously enforced with the Affordable Care Act could contribute to more women losing access to hormonal birth control due to cost (Behn et al., 2019). Ensuring that the student health insurance plans provided at UofSC cover contraceptive options is an important part of addressing this concern and mirrors the recommendations of the American College of Obstetricians and Gynecologists (ACOG, 2015). There is also the indication that developing programs to help reduce the cost of hormonal contraception could be influential in increasing accessibility beyond campus, because most students use off campus resources for contraceptive counseling. Health concerns was the second most popular option, which indicates that many students are aware of some of the health concerns noted previously (Prentice & Thomas, 1987), and factor them into their decisions regarding birth control. The importance of health concerns was independent of race-ethnicity, which mirrors previous research (Rocca & Harper, 2012). This overarching concern displays the need for further study on these noted health issues, to see how changes in birth control products

can help reduce risks, while also confirming if a previously noted risk occurs in newly developed contraceptive methods or not. It also reveals the need for healthcare providers to have discussions of these health concerns with their patients, to help create an informative choice that weighs the benefits and risks of use, which has been shown to be effective (Gaudet et al., 2003; Pazol et al., 2015).

Lastly, Hispanic women, were less likely than their white peers to report “opposition from others” as a barrier to contraceptive use, which counters the lower rates of contraceptive use support by family and friends noted in previous studies (Sangi-Haghpeykar et al., 2006). In contrast, Asian students were more likely to select this choice. This may indicate the role that other individuals play in the healthcare choices of Asian students, whether it be friends, family, or classmates; however, there is a lack of previous research to support this claim. Hispanic and Asian respondents were both statistically less likely to report “lack of a prescription” and “lack of knowledge” as primary barriers, which may indicate that Hispanic and Asian respondents in this survey felt they had an adequate understanding of hormonal birth control and access to a provider if they wished to use it.

When analyzing respondents’ discussions of hormonal birth control with a healthcare provider, there were two important findings. First, Hispanic and Asian students were more likely than White students to have received any information on hormonal birth control from a healthcare provider. This relationship supports the previous finding where Hispanic and Asian students felt lack of knowledge and lack of a prescription were less of a barrier to birth control, as they have had discussion about such at a higher rate than White women.

Second, Black students were less likely than White students to receive any form of information from a healthcare provider, as 20% of Black respondents noted that they have not

received this information directly from a healthcare provider. This finding is alarming as a large portion of this group are not having any form of healthcare-provider-based discussion on the issue. Past studies have noted that Black patients receive lower-quality healthcare than White patients, even when controlling for class, health behaviors, and access to health insurance (Bridges, 2015). However, these studies were focusing on cardiovascular, cancer, and AIDS treatment, not contraceptive care, but it is likely that implicit bias from providers expands past these specific care needs. Whether the data seen in this thesis with contraceptive counseling is because healthcare providers are not discussing the issue, Black students are having less visits with healthcare professionals, or another issue, this trend is a possible source for future disparities in hormonal contraception access. As such, it is imperative that there is a note of this racial disparity in information on hormonal contraceptives and changes are made to help increase the number of Black students that are provided with information on birth control from healthcare providers, either through providers on-campus or off-campus.

While there is a disparity in whether one is speaking to a healthcare provider about hormonal birth control, there are also differences in who exactly students were speaking to. While primary care physicians and gynecologists were the most popular source regardless of race, Black and Asian students were statistically more likely than White students to have spoken with a primary care physician on the topic, and both Black and Asian students were statistically less likely to have spoken to a gynecologist as well. Black, Hispanic, and Asian respondents were also less likely to speak to a pharmacist. Hispanic students spoke with physician assistants less than White students, while Asian students were less likely to speak with a physician assistant or nurse practitioner compared to White students. While there is a lack of prior research to compare the data from the survey to, these differences highlight a possible trend that minority

students, especially Black and Asian women, are more heavily relying on primary care physicians for their contraceptive information compared to White women. These findings highlight the need for primary care physicians to continue discussions of hormonal birth control with their patients, while also increasing the presence of these discussions to help decrease the disparity in Black women, who are missing out on such dialogue, as contraceptive counseling from physicians has been noted to be beneficial (Gaudet et al., 2003; Pazol et al., 2015).

Most respondents in each racial category spoke with medical providers outside of the UofSC Student Health Services and the majority also did so in-person as opposed to online. Hispanic and Asian students were statistically more likely to do so in-person compared to White women, which may be connected to their increased discussions on contraception with their healthcare providers as previously noted. These results reveal that changes in information distribution and contraceptive counseling cannot be focused solely on the Student Health Services, as off-campus providers, either in Columbia or in students' hometowns are the more influential source of information on birth control. As a result, campaigns to increase hormonal birth control accessibility and information dispersal cannot be solely centered around campus but they need to be statewide or nationwide.

For sources of information on hormonal birth control, healthcare professionals, the internet, friends/classmates, and family members were used by most respondents in each racial category, however there were statistical differences in the amount of use. Hispanic and Asian students were statistically more likely to use healthcare professionals as a resource compared to White students. Compared to White women, Black students used former "sex-ed" teachings less but were more reliant on the internet for hormonal birth control information. The need to rely on the internet may stem from the lower rate of direct discussions with healthcare providers

previously noted. Hispanic respondents were also statistically more likely to use the internet compared to White respondents. Black and Hispanic students used friend and classmates as a resource statistically more often than White students. This finding correlates with previous findings that Hispanic women often rely on friends and family for contraception information (Sangi-Haghpeykar et al., 2006).

These findings reveal that there is a multitude of ways to distribute accurate and effective information on hormonal birth control. Whether it be through healthcare providers, the internet, or word of mouth, having a dialogue that contains important and scientifically valid information on hormonal birth control is vital. Using the different distribution networks already in place, there are many avenues to distribute information on hormonal birth control, which can even be specific focused on certain racial demographics. For example, with the importance of online information noted for Black students, increased information online through the University or a public health institution could help reach a greater audience within this demographic to counteract the lower rates of direct information from healthcare providers previously noted.

Regarding which sources of information on hormonal birth control are most trustworthy, healthcare professionals were trusted by most respondents, regardless of race. Hispanic and Asian students were statistically more trusting of healthcare professionals than White students, which is consistent with their greater reliance on healthcare professionals as a source of information on contraceptives. However, Hispanic students being more trusting of healthcare professionals counters previous findings that they are generally more skeptical due to medical mistrust (Rocca & Harper, 2012). Black students having similar levels of trust as White students also demonstrates that medical mistrust may not be as pressing of an issue for students concerning choosing what type of contraception to use, which is supported by previous research

(Rocca & Harper, 2012), or may be impacted by similar levels of education. Since every demographic widely trusted healthcare providers, information on birth control should be continued to be distributed by these professionals, as there is a sense of trust that this information will be accurate, which can lead women to having more confidence behind their decisions of whether to use hormonal contraception or not. Contraceptive counseling from healthcare professionals has been shown to increase patient trust and receptiveness of hormonal birth control information and help to increase the confidence in women in making their choice (Gaudet et al., 2003; Pazol et al., 2015)

In contrast to general trust for healthcare providers among respondents, it was found that sex-ed was not trusted by any respondents for information on hormonal birth control. This illustrates the need for a great change in the sex education curriculum as students are weary of the teachings and may be less likely to follow guidelines taught in the course. Sex-ed curriculums, especially in more conservative states such as South Carolina, stress abstinence and often lack standardized and medically accurate information (SIECUS, 2021). Past surveys have found that most South Carolinians support a more comprehensive sex education that teaches on contraceptive methods (Kershner et al., 2017), which indicates that positive changes to the curriculum surrounding hormonal contraception may be supported by the population.

Trusting the internet for contraception information revealed racial-ethnic differences. Black respondents were statistically more likely to trust the internet compared to White respondents. This finding falls in line with the previous question, where Black students were more likely to use the internet for contraceptive information, and previous studies showing that Black and Hispanic students relied on physical or online media for contraceptive information as opposed to healthcare providers (Sangi-Haghpeykar et al., 2006). As a result, there is greater

support for the increase in scientifically supported online information to help reach this population and increase the number of Black students who can access accurate information on hormonal contraceptives.

Lastly, Black, Hispanic, and Asian respondents were statistically less likely to trust their family members for hormonal birth control information compared to White respondents. This finding may indicate that there is some level of familial pressure regarding hormonal birth control from family members. Young Hispanic women have previously been noted to have low levels of support from family for using contraception, which could explain this lack of trust (Sangi-Haghpeykar et al., 2006). Asian and Black students had more trust in their friends and classmates for hormonal birth control information. A future study that looks to further analyze what exactly makes a source trustworthy for an individual would be influential to see why there are significant differences in trust of family and friends for contraceptive information by race-ethnicity, and what changes could be made to increase general contraceptive knowledge to facilitate more accurate conversations amongst family and peers.

For the final section of the survey, attitudes of students on different legislative bills proposed or recently passed in South Carolina revealed how the changing political climate is impacting hormonal birth control demand and accessibility. This section is increasingly impactful in the lens of a post Roe nation, specifically in South Carolina where abortion restrictions are being currently proposed, threatening the bodily autonomy of women. This data should be reflected with this context in mind, as women face the pressure of new restrictions on their reproductive rights that will impact not only how they perceive their desire for hormonal birth control, but also how the access information and prescriptions for it.

In general, students were supportive of the Pharmacy Access Act recently enacted in South Carolina, which allows pharmacists to fill hormonal birth control orders without a prescription. Most respondents, regardless of racial identity, agreed (39.19%) or strongly agreed (45.05%) that they would be comfortable discussing hormonal birth control with a pharmacist. This sentiment mirrors prior research, which found that most women nationwide support a similar proposal (Landau et al., 2006). These findings also indicate that many women feel open to this new legislative change, which can help remove some of the barriers to hormonal birth control access, such as costs of doctor's visits or the need for a prescription. Health outcomes from states with similar laws have shown increased long-term contraceptive use because of similar policy (Jones, 2023). However, since it provides an avenue for individuals to gain hormonal birth control without previously consulting a healthcare provider, there is an increased importance in the available presence of publicly available accurate information on hormonal birth control, with its effectiveness, purposes for use, and health concerns.

Most respondents, regardless of racial identity, also agreed (24.18%) or strongly agreed (60.44%) that they would be encouraged to take hormonal birth control to avoid unwanted pregnancy if abortion restrictions through SC bills 2023-2024 S.240 and 2023-2024 H.3774 were passed. There was no statistically significant variation between racial demographics for this response. Students of all races appear concerned with abortion restrictions in SC following the Dobbs decision, as lower body autonomy and reproductive control when deciding what action to take with an undesired pregnancy puts greater pressure on women to avoid pregnancy with preventative measures such as birth control. Greater demand for birth control associated with current abortion restrictions could put strains on women, such as through cost burdens and lack of access, especially on minority women (Redd et al., 2021). This needs to be addressed with

greater birth control informational campaigns both with the University and state-level that have been shown to be effective at increasing access (Gaudet et al., 2003; Pazol et al., 2015), while also implementing programs, such as cost assistance programs, that can help alleviate some of these burdens (ACOG, 2015) as a greater number of women look to use hormonal birth control.

A slight majority of individuals disagreed (47.25%) or strongly disagreed (14.65%) with the idea that abortion rights restrictions in South Carolina would make them less comfortable discussing hormonal birth control with a medical professional. The responses to this question are reassuring as women will still be willing to seek out hormonal birth control from their healthcare providers to avoid unwanted pregnancy and see other benefits, even with abortion restrictions in place. However, it is likely that restrictions on reproductive rights are still a concern, as seen with the responses to other questions and the fact that students were not disagreeing strongly. It is important to reassure women that even with abortion restrictions, their rights to many forms of contraception are protected to increase confidence in having these necessary discussions.

Upon being presented with information on SC bill 2021-2022 S.1373, which includes the banning of information online on abortion services in South Carolina, most respondents in each racial demographic agreed (45.79%) or strongly agreed (38.46%) that they would not trust information online in SC on abortion access if this law was enacted, with no statistical variation by race. However, in the same scenario, a slight majority of students regardless of race agreed (28.21%) or strongly agreed (26.01%) that they would not trust information on hormonal birth control online in SC with no statistical significance for any minority demographic compared to White respondents. However, 43.59% of respondents disagreed to this statement, indicating there is still a large portion of the student body who would still feel somewhat comfortable with information online in the context of abortion restrictions. However, since only 2.56% strongly

disagreed, it is likely that these disagreeing respondents still may harbor some concern. The responses to these questions are still concerning, as many women, especially Black students, indicated in the survey that the internet was a vital source of trusted contraceptive information. Taking away online information on abortion, and possibly hormonal birth control methods that prevent implantation, will create a greater burden on women, especially Black women. With the previous finding that Black students were less likely to have discussions with healthcare providers on hormonal contraception, there is an increased importance in online resources which are directly threatened by this bill, as many women would begin to not only not trust abortion information online, but also information on birth control, leaving many women without an accessible trustworthy source.

Overall, the findings of this study indicate that while there is an indication of a current disparity in hormonal contraception use amongst UofSC undergraduate women, it is important to develop programs that alleviate the economic burdens that can prevent access, while also continuing to study and acknowledge the health concerns that people have about hormonal contraception. Doing so can help expand access and allow for more informed decisions. Additionally, the way that hormonal contraception information is being dispersed is of concern, revealing the need for increased exposure to healthcare provider-led contraceptive counseling, specifically with Black students, while also highlighting the reliance on and demand for more online resources on the topic, either from the University or public health institutions. While the findings regarding the Pharmacy Access Act are reassuring, changes to abortion legislation in South Carolina are making students concerned about prospects of an unwanted pregnancy and bodily autonomy, which will increase demand for hormonal contraception, making increased access to counseling, information, and the methods themselves much more vital.

One of the limitations of this study that can be addressed through future research was the fact that there was a lack of an extended answer dialogue on many of the questions with respondents. Due to the nature of this work as a senior thesis, a survey method with a selection of answer choices was most feasible for conducting this study with a large sample size. However, in the future, interviews with respondents to gain more detailed responses on why they take or do not take hormonal birth control, what makes a source on birth control trustworthy for them, and how barriers in their personal life have restricted access to hormonal contraception would be insightful. Another limitation in this study is that while care was taken to recruit participants from a variety of majors, ages, and backgrounds, it was difficult to try to ensure that those sampled were a broad representation of the UofSC undergraduate population as it was still necessary to conduct a convenience study. While there was a diverse sample for this study, future studies could try to assure that those sampled are as accurate a depiction of the student body as possible, and not just those who feel interested enough in the topic to take the survey. A future study could also focus on how differences in education level impact hormonal contraception accessibility. While students at UofSC were the population of interest in this thesis, further study comparing how hormonal contraception access compares between UofSC students, and young adult women who are not enrolled in or have not previously been enrolled in an undergraduate level education, could reveal the importance of education level in hormonal contraception access.

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Table 1
Demographic Characteristics of Sample, by Race/Ethnicity

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Socio-demographic characteristic	Category	n (%)	n (%)	n (%)	n (%)	n (%)
Age	18	34 (12.45%)	13 (9.29%)	17 (22.67%)	2 (8.70%)	2 (5.71%)
	19	42 (15.38%)	13 (4.76%)	21 (28%)	3 (13.04%)	5 (14.29%)
	20	87 (31.87%)	44 (16.12%)	22 (29.33%)	10 (43.48%)	11 (31.43%)
	21	94 (34.43%)	56 (40%)	15 (20%)	8 (34.78%)	15 (42.86%)
	22	16 (5.86%)	14 (10%)	0 (0%)	0 (0%)	2 (5.71%)
Student Classification	Freshman	42 (15.38%)	22 (15.71%)	17 (22.67%)	1 (4.35%)	2 (5.71%)
	Sophomore	58 (21.25%)	26 (18.57%)	22 (29.33%)	4 (17.39%)	6 (26.09%)
	Junior	53 (19.41%)	17 (12.14%)	21 (28%)	9 (39.13%)	6 (26.09%)
	Senior	120 (43.96%)	75 (53.57%)	15 (20%)	9 (39.13%)	21 (60%)

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Socio-demographic characteristic	Category	n (%)	n (%)	n (%)	n (%)	n (%)
Estimated GPA	4.0-3.5	206 (75.46%)	121 (86.42%)	43 (57.33%)	14 (60.87%)	28 (80%)
	3.0-3.49	66 (24.18%)	19 (13.57%)	31 (41.33%)	9 (39.13%)	7 (20%)
	2.5-2.99	1 (0.37%)	0 (0%)	1 (1.33%)	0 (0%)	0 (0%)
Relationship Status	Single	120 (43.96%)	50 (35.71%)	32 (42.67%)	13 (56.52%)	25 (71.43%)
	Dating	153 (56.04%)	90 (32.97%)	43 (57.33%)	10 (43.48%)	10 (28.57%)
Religion	Agnostic	11 (4.03%)	5 (3.57%)	3 (4%)	0 (0%)	3 (8.57%)
	Atheist	61 (22.34%)	45 (32.14%)	11 (14.67%)	4 (17.39%)	1 (2.86%)
	Buddhist	1 (0.37%)	0 (0%)	0 (0%)	0 (0%)	1 (2.86%)
	Catholic	67 (24.54%)	25 (17.86%)	17 (22.67%)	14 (60.87%)	11 (31.43%)
	Christian	44 (16.12%)	15 (10.71%)	22 (29.33%)	5 (21.74%)	2 (5.71%)
	Evangelical Protestant	15 (5.49%)	15 (10.71%)	0 (0%)	0 (0%)	0 (0%)
	Hindu	13 (4.76%)	0 (0%)	0 (0%)	0 (0%)	13 (37.14%)
	Jewish	5 (1.83%)	5 (3.57%)	0 (0%)	0 (0%)	0 (0%)
	Muslim	2 (0.73%)	0 (0%)	2 (2.67%)	0 (0%)	0 (0%)
	No Affiliation	20 (7.33%)	15 (10.71%)	2 (2.67%)	0 (0%)	3 (8.57%)
	Non- Evangelical Protestant	29 (10.62%)	10 (7.14%)	18 (24%)	0 (0%)	1 (2.86%)
	Orthodox Christian	5 (1.83%)	5 (3.57%)	0 (0%)	0 (0%)	0 (0%)

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Socio-demographic characteristic	Category	n (%)	n (%)	n (%)	n (%)	n (%)
In-State vs Out-of- State Student	In-State	194 (71.06%)	95 (67.86%)	54 (72%)	17 (73.91%)	28 (80%)
	Out-of-State	79 (28.94%)	45 (32.14%)	21 (28%)	6 (26.09%)	7 (20%)

Table 2

Responses to the “Contraception Use” Section by Race

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Question	Response	n (%)	n (%)	n (%) [P value]	n (%) [P value]	n (%) [P value]
Are you currently using Hormonal Contraception	Yes	164 (60.07%)	90 (64.29%)	43 (57.33%) [0.3251]	13 (56.52%) [0.4986]	18 (51.43%) [0.1814]
	No	109 (39.93%)	50 (35.71%)	32 (42.67%)	10 (43.48%)	17 (48.57%)
Reason(s) for Using Hormonal Contraception (If Currently Used)	To Prevent an Unwanted Pregnancy	138 (84.15%)	75 (83.33%)	43 (100%) [0.0042]	9 (69.23%) [0.3274]	11 (61.11%) [0.1467]
	Menstrual Regulation	109 (66.46%)	75 (83.33%)	21 (48.84%) [0.0002]	6 (46.15%) [0.0270]	7 (38.89%) [0.0083]
	Menstrual Pain Treatment	82 (50%)	55 (61.11%)	21 (48.84%) [0.153]	6 (46.15%) [0.3435]	0 (0%) [<0.0001]
	Acne Treatment	59 (35.98%)	40 (44.44%)	10 (23.26%) [0.0131]	2 (15.38%) [0.0228]	7 (38.89%) [0.6716]
	Hormonal Imbalance Treatment	32 (19.51%)	25 (27.78%)	5 (11.63%) [0.0203]	2 (15.38%) [0.2941]	0 (0%) [<0.0001]
	Endometriosis Treatment	5 (3.05%)	5 (5.56%)	0 (0%) [0.0245]	0 (0%) [0.0245]	0 (0%) [0.0245]
Most Influential Reason Someone May Not Use Hormonal Birth Control	Economic Barriers/Cost	105 (38.46%)	50 (35.71%)	31 (41.33%) [0.4248]	10 (43.48%) [0.4986]	14 (40%) [0.7031]
	Religious Reasons	27 (9.89%)	15 (10.71%)	4 (5.48%) [0.1477]	5 (21.74%) [0.2404]	3 (8.57%) [0.6968]

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Question	Response	n (%)	n (%)	n (%) [P value]	n (%) [P value]	n (%) [P value]
	Health Concerns	80 (29.30%)	40 (28.57%)	23 (30.67%) [0.7509]	8 (34.78%) [0.5717]	9 (25.71%) [0.7356]
	Opposition from Others	21 (7.69%)	5 (3.57%)	7 (9.33%) [0.1254]	0 (0%) [0.0248]	9 (25.71%) [0.0064]
	Lack of a Prescription	15 (5.49%)	10 (3.67%)	5 (6.67%) [0.8958]	0 (0%) [0.0014]	0 (0%) [0.0014]
	Lack of Knowledge	20 (7.33%)	15 (10.71%)	5 (6.67%) [0.3020]	0 (0%) [<0.0001]	0 (0%) [<0.0001]

Table 3

Responses to the “Access to Hormonal Contraception Information” Section by Race

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Question	Response	n (%)	n (%)	n (%) [p value]	n (%) [p value]	n (%) [p value]
Have you ever discussed using, currently or previously, hormonal birth control with a medical professional?	Yes, and I choose to take Hormonal Birth Control.	174 (63.74%)	100 (71.43%)	43 (57.33%) [0.0432]	13 (56.52%) [0.1956]	18 (51.43%) [0.0383]
	Yes, and I choose NOT to take Hormonal Birth Control.	74 (27.11%)	30 (21.43%)	17 (22.67%) [0.8660]	10 (43.48%) [0.0582]	17 (48.57%) [0.0052]
	No, Hormonal Birth Control has not been mentioned to me by a medical professional.	25 (9.16%)	10 (7.14%)	15 (20%) [0.0138]	0 (0%) [0.0014]	0 (0%) [0.0014]
Which medical professional(s) did you speak to regarding Hormonal Birth Control?	Primary Care Physician	195 (78.63%)	90 (69.23%)	60 (100%) [0.0056]	15 (65.22%) [0.9327]	29 (82.86%) [0.0179]
	Gynecologist	164 (66.13%)	100 (76.92%)	42 (70%) [0.0275]	12 (52.17%) [0.1004]	10 (28.57%) [0.0470]
	Pharmacist	5 (2.02%)	5 (3.85%)	0 (0%) [0.0248]	0 (0%) [0.0248]	0 (0%) [0.0248]
	Physician Assistant	10 (6.05%)	5 (3.85%)	5 (8.33%) [0.3501]	0 (0%) [0.0248]	0 (0%) [0.0248]

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Question	Response	n (%)	n (%)	n (%) [p value]	n (%) [p value]	n (%) [p value]
	Nurse Practitioner	31 (12.5%)	20 (15.38%)	10 (16.67%) [0.8474]	1 (4.35%) [0.0655]	0 (0%) [<0.0001]
Was this medical professional associated with UofSC Student Health Services	Yes	55 (22.18%)	30 (23.08%)	12 (20%) [0.4665]	4 (30.77%) [0.6496]	8 (34.78%) [0.8590]
	No	194 (78.23%)	100 (76.92%)	48 (80%)	19 (82.61%)	27 (77.14%)
What was the medium of communication?	In-person	234 (94.35%)	118 (90.77%)	58 (96.67%) [0.1439]	23 (100%) [<0.0001]	35 (100%) [<0.0001]
	Online/Telehealth	14 (5.65%)	12 (9.23%)	2 (3.33%)	0 (0%)	0 (0%)
What are past source(s) you have used for Hormonal Birth Control information?	Healthcare Professionals	243 (89.01%)	125 (89.29%)	60 (80%) [0.0845]	23 (100%) [<0.0001]	35 (100%) [<0.0001]
	“Sex-Ed”	57 (20.88%)	35 (25%)	7 (9.33%) [0.0020]	3 (13.04%) [0.1474]	12 (34.29%) [0.3037]
	The Internet	228 (83.52%)	111 (79.29%)	70 (93.33%) [0.0020]	23 (100%) [<0.0001]	24 (68.57%) [0.2228]
	Friends/Classmates	212 (77.66%)	95 (67.86%)	68 (90.67%) [<0.0001]	21 (91.30%) [0.0022]	28 (80%) [0.1307]
	Family Members	193 (70.70%)	105 (75%)	43 (57.33%) [0.0604]	19 (82.61%) [0.3979]	26 (74.29%) [0.9321]
What are the sources of Hormonal Birth Control information	Healthcare Professionals	254 (93.04%)	130 (92.86%)	66 (88%) [0.2678]	23 (100%) [0.0014]	35 (100%) [0.0014]

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Question	Response	n (%)	n (%)	n (%) [p value]	n (%) [p value]	n (%) [p value]
(Up to three choices) that you see as most reliable?						
	“Sex-Ed”	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	The Internet	200 (73.26%)	94 (67.14%)	75 (100%) [<0.0001]	7 (30.43%) [<0.0001]	24 (68.57%) [0.8731]
	Friends/Classmates	181 (66.30%)	65 (46.43%)	75 (100%) [<0.0001]	10 (43.48%) [0.7973]	31 (88.57%) [<0.0001]
	Family Members	79 (28.94%)	55 (39.29%)	19 (25.33%) [0.0343]	0 (0%) [<0.0001]	5 (14.29%) [0.0010]

Table 4

Responses to the “South Carolina Legislative Changes” Section by Race

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Question	Response	n (%)	n (%)	n (%) [p value]	n (%) [p value]	n (%) [p value]
Under the “Pharmacy Access Act”, allowing Pharmacists in SC to distribute Hormonal Birth Control without a prescription, I would feel comfortable discussing Hormonal Birth Control use with a pharmacist.	Strongly Agree	123 (45.05%)	65 (46.43%)	37 (49.33%)	7 (30.43%)	14 (40%)
	Agree	107 (39.19%)	60 (42.86%)	21 (28%)	9 (39.13%)	17 (48.57%)
	Disagree	43 (15.75%)	15 (10.71%)	17 (22.67%)	7 (30.43%)	4 (11.43%)
	Strongly Disagree	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Average Sentiment		0.7839	0.8125	0.76 [0.1855]	0.6739 [0.0474]	0.7929 [0.6537]
If SC bills 2023-2024 S.240 and 2023-2024 H.3774 banning abortion in SC were passed, I would be encouraged to use Hormonal Birth Control to avoid unwanted pregnancy.	Strongly Agree	165 (60.44%)	95 (67.86%)	48 (64%)	10 (43.48%)	12 (34.29%)
	Agree	66 (24.18%)	25 (17.86%)	17 (22.67%)	8 (34.78%)	16 (45.71%)
	Disagree	37 (13.55%)	15 (10.71%)	10 (13.33%)	5 (21.74%)	7 (20%)
	Strongly Disagree	5 (1.83%)	5 (3.57%)	0 (0%)	0 (0%)	0 (0%)

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Question	Response	n (%)	n (%)	n (%) [p value]	n (%) [p value]	n (%) [p value]
Average Sentiment		0.8196	0.8393	0.8433 [0.9157]	0.75 [0.1833]	0.7357 [0.0505]
If the SC Legislature passed abortion rights restrictions, I would feel less comfortable discussing Hormonal Birth Control with a medical provider.	Strongly Agree	60 (21.98%)	35 (25%)	18 (24%)	2 (8.70%)	5 (14.29%)
	Agree	44 (16.12%)	25 (17.86%)	14 (18.67%)	5 (21.74%)	0 (0%)
	Disagree	129 (47.25%)	55 (39.29%)	35 (46.67%)	9 (39.13%)	30 (85.71%)
	Strongly Disagree	40 (14.65%)	25 (17.86%)	8 (10.67%)	7 (30.43%)	0 (0%)
Average Sentiment		0.4670	0.4821	0.4967 [0.7821]	0.3478 [0.0967]	0.3571 [0.0267]
If SC bill 2021-2022 S.1373 passed banning information on abortion services online in SC, I would not trust information on SC abortion access and services online.	Strongly Agree	105 (38.46%)	60 (42.86%)	27 (36%)	6 (26.01%)	12 (34.29%)
	Agree	125 (45.79%)	55 (39.29%)	37 (49.33%)	12 (52.17%)	21 (60%)
	Disagree	43 (15.75%)	25 (17.88%)	11 (14.67%)	5 (21.74%)	2 (5.71%)
	Strongly Disagree	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Average Sentiment		0.7674	0.7679	0.7667 [0.9738]	0.7065 [0.3176]	0.8071 [0.3082]
If SC bill 2021-2022 S.1373 passed banning information on abortion services	Strongly Agree	71 (26.01%)	45 (32.14%)	21 (28%)	5 (21.74%)	0 (0%)

		Overall (N=273)	White (n=140)	Black (n=75)	Hispanic (n=23)	Asian (n=35)
Question	Response	n (%)	n (%)	n (%) [p value]	n (%) [p value]	n (%) [p value]
online in SC, I would not trust information on Hormonal Birth Control found online.						
	Agree	77 (28.21%)	30 (21.43%)	20 (26.67%)	7 (30.34%)	20 (57.14%)
	Disagree	119 (43.59%)	60 (42.86%)	32 (42.67%)	11 (30.43%)	15 (42.86%)
	Strongly Disagree	7 (2.56%)	5 (3.57%)	2 (2.67%)	0 (0%)	0 (0%)
Average Sentiment		0.5778	0.5893	0.5867 [0.9574]	0.5652 [0.7449]	0.5357 [0.3038]

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Appendix

A. Survey Questions

1. Are you a current female undergraduate student at the University of South Carolina Columbia?

- Yes
- No

Contraception Use Questions

2. Do you currently use a form of Hormonal Birth Control? Examples of Hormonal Birth Control include: The Pill, IUD, IUS, Ring, Implant, Patch, and the Shot.

- • Yes
- • No
- • Unsure. I use _____ (Please List What You Use if You Are Not Sure If It is Hormonal)

If Question 2 is answered with a yes, respondents will be presented with question 3.

3. What is your purpose for using Hormonal Birth Control? Please select all that apply

- • To prevent an unwanted pregnancy
- • Menstrual regulation
- • Menstrual pain treatment
- • Acne treatment
- • Hormonal imbalance treatment
- • Endometriosis treatment

4. What Do You Believe is the Most Influential Reason Someone May Not Use Hormonal Birth Control? (Word Cap: 10 words)

- • Economic Barriers/Cost
- • Religious Reasons
- • Health Concerns
- • Opposition from Others
- • Lack of a Prescription
- • Lack of Knowledge
- • Other: _____ (open response)

Access to Hormonal Contraception Information

5. Have you ever discussed using hormonal birth control with a medical professional?

- • Yes, and I chose to use a form of Hormonal Birth Control.
- • Yes, and I chose NOT to use a form of Hormonal Birth Control.
- • No, Hormonal Birth Control use has not been mentioned to me by a medical professional.

If yes is answered on question 5, the respondent will be presented with the following questions 6, 7, and 8.

6. Which medical professional did you speak with regarding a hormonal birth control prescription? Please select all that apply

- • Primary Care Physician/Doctor
- • Gynecologist
- • Pharmacist
- • Physician Assistant
- • Nurse Practitioner
- • Other: _____ (open response)

7. Was this healthcare professional working with Student Health Services at UofSC?

- Yes
- No
- I have discussed the hormonal birth control with someone at the Student Health Services and someone not associated with the University

8. How did you meet with your healthcare provider to discuss using hormonal birth control? Please select all that apply.

- • In-person
- • Online (Telehealth)
- • Another method: _____ (Open Response)

9. From what sources have you gained information on the availability and effectiveness of Hormonal Birth Control methods? Please select all that apply.

- • From my physician/doctor
- • From university health officials

- • “Sex-Ed” in middle or high school
- • The Internet
- • From friends/classmates
- • From family members
- • Another source. Please list: _____ (Open Response)
- • I have not received information on hormonal birth control

10. What sources would you trust the MOST to provide you with accurate information on the availability and effectiveness of Hormonal Birth Control methods? Please rank your top 3 sources.

- • A physician/doctor/healthcare professional
- • “Sex-Ed” in middle or high school
- • The Internet
- • Friends/classmates
- • Family members
- • Another source. Please list: _____ (Open Response)

Current South Carolina Legislative Changes

11. With the passing of the “Pharmacy Access Act” by the South Carolina Legislature, women in SC will be able to receive birth control pills from a pharmacist without a doctor’s prescription starting as early as December 2022. Do you feel comfortable discussing hormonal birth control use with your pharmacist?

- • Strongly Agree
- • Agree
- • Disagree
- • Strongly Disagree

12. Following the overturning of Roe v. Wade, bills such as *2021-2022 Bill S.1373* have been proposed by the South Carolina Legislature to restrict abortion access in SC. Would the passing of abortion restrictions in SC encourage you to use hormonal birth control to avoid unwanted pregnancy?

- • Strongly Agree
- • Agree
- • Disagree
- • Strongly Disagree

For each of the the following statements, please tell us whether you agree or disagree:

13. If the South Carolina Legislature were to pass abortion and reproductive rights restrictions I would feel less comfortable discussing hormonal birth control use with a healthcare provider.

- • Strongly Agree
- • Agree
- • Disagree
- • Strongly Disagree

14 & 15. 2021-2022 Bill S.1373, proposed by the South Carolina Legislature, would ban the presence of online information on abortion access and services in SC.

Please tell us whether you agree or disagree with the following statements:

14. If Bill S.1373 were to pass I would not trust information on SC abortion access and services found online.

- • Strongly Agree
- • Agree
- • Disagree
- • Strongly Disagree

15. If Bill S.1373 were to pass I would not trust information on hormonal birth control methods found online.

- • Strongly Agree
- • Agree
- • Disagree
- • Strongly Disagree

Demographic Questions

16. What is your racial identity?

- White
- African American
- Native American
- Asian
- Hispanic
- Hawaiian/Pacific Islander
- Two or More Races
- Other: _____ (open response)

17. What is your gender identity?

- cis-gender Woman

- • cis-gender Man
- • Transgender Woman
- • Transgender Man
- • Non-binary/non-conforming
- • Prefer not to respond
- • Other: _____(open response)

18. What is your current age?

- Open Response

19. What is your current student classification?

- Freshman
- Sophomore
- Junior
- Senior

20. What is your estimated GPA?

- 4.0-3.5
- 3.0-3.49
- 2.5-2.99
- 2.0-2.49
- < 2.0

21. What is your current relationship status?

- Single
- Dating
- Cohabiting
- Married

22. What is your religious identity?

- • Evangelical Protestant
- • Non-Evangelical Protestant
- • Orthodox Christian

- • Catholic
- • Church of Latter Day Saints (Mormon)
- • Jehovah's Witness
- • Jewish
- • Muslim
- • Buddhist

- • Hindu
- • Atheist
- • Other Religion: _____ Open Response

23. Are you an instate student from South Carolina?

- • Yes
- • No