

5-2022

# THE KNOWLEDGE, ATTITUDE, AND PRACTICES OF BIRTH CONTROL METHODS AMONGST UNDERGRADUATE COLLEGE STUDENTS

Andrea Galeas

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/etd>



Part of the [Education Commons](#), [Life Sciences Commons](#), and the [Medicine and Health Sciences Commons](#)

---

## Recommended Citation

Galeas, Andrea, "THE KNOWLEDGE, ATTITUDE, AND PRACTICES OF BIRTH CONTROL METHODS AMONGST UNDERGRADUATE COLLEGE STUDENTS" (2022). *Electronic Theses, Projects, and Dissertations*. 1461.

<https://scholarworks.lib.csusb.edu/etd/1461>

This Thesis is brought to you for free and open access by the Office of Graduate Studies at CSUSB ScholarWorks. It has been accepted for inclusion in Electronic Theses, Projects, and Dissertations by an authorized administrator of CSUSB ScholarWorks. For more information, please contact [scholarworks@csusb.edu](mailto:scholarworks@csusb.edu).

THE KNOWLEDGE, ATTITUDE, AND PRACTICES OF BIRTH CONTROL  
METHODS AMONGST UNDERGRADUATE COLLEGE STUDENTS

---

A Thesis  
Presented to the  
Faculty of  
California State University,  
San Bernardino

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Public Health

---

by  
Andrea Galeas

May 2022

THE KNOWLEDGE, ATTITUDE, AND PRACTICES OF BIRTH CONTROL  
METHODS AMONGST UNDERGRADUATE COLLEGE STUDENTS

---

A Thesis  
Presented to the  
Faculty of  
California State University,  
San Bernardino

---

by  
Andrea Galeas  
May 2022

Approved by:  
Salome Kapella-Mshigeni Ph.D., Committee Chair, Health Science,  
and Human Ecology

Kassandra Harding Ph.D., Committee Member

Regina Moore-Ude Dr.PH, Committee Member

© 2022 Andrea Galeas

## ABSTRACT

**Background:** The lack of proper Knowledge, Attitude, and Practice of birth control methods can put one at risk for a sexually transmitted disease or unplanned pregnancy when engaging in sexual activity. There are many factors as to why birth control often gets overlooked, such as lack of knowledge, cultural norms, and misinformation which can impact where and how one accesses birth control.

**Methods:** This study employed quantitative research methods. The emphasize of this study was to concentrate on the knowledge, attitude, and practice of birth control methods amongst college students. Data for this study was collected from three courses at the end of the Fall 2021 to Winter 2022 for a period of 6 weeks from a four-year public university.

**Results:** Results demonstrated that there were many attributes when it came to the Knowledge, Attitude, and Practice of birth control methods. The findings also demonstrated a gender and cultural difference regarding birth control methods. Most of the participants, 63.5%, were between the ages of 18-21, followed by 14.3% who were ages 22-25, then 9.5% who were ages 26-29, and only 12.7% were 30 years or older. Further, 69.8% of the participants identified as Hispanic or Latino, followed by 17.5% who identified as White or European American. In addition, 6.3% identified as Asian or Pacific Islander as well as Black or African American.

**Conclusion:** This study presented an assessment of birth control methods amongst undergraduate college students at a public university. Majority of participants are not fully knowledgeable of birth control methods or at least where to access that information. Evidence-based health education strategies should be used to reduce bias of birth control methods among college students.

## ACKNOWLEDGEMENTS

I owe my success to my parents, who immigrated to this country and scarified so much to provide me the opportunity to receive an education. To my sister and brother-in-law for helping me countless times and continue to help me through life. To my support system, thank you being part of this journey with me. Thank you, Dr. Salome Mshigeni for being the best guide and your sweet words of encouragement which is more than I could ever ask for. To my committee members Dr. Kassandra Harding and Dr. Regina Moore-Ude. To Karina and Joanna Clevenger for the countless of help and kindness. Also, thank Professor Erin Haugh for your support.

## TABLE OF CONTENTS

ABSTRACT .....	iii
ACKNOWLEDGEMENTS.....	v
LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
CHAPTER ONE: INTRODUCTION .....	1
Problem Statement .....	1
Purpose of Study .....	4
Research Questions.....	4
Significance to Public Health .....	5
CHAPTER TWO: LITERATURE REVIEW.....	6
Knowledge.....	6
Attitude.....	9
Practice.....	10
CHAPTER THREE: METHODS .....	14
Study Design .....	14
Data Source and Collection .....	14
Measures.....	15
Data Analysis.....	16
Ethics.....	17
CHAPTER FOUR: RESULTS.....	18
Demographics.....	19
CHAPTER FIVE: DISCUSSION .....	27

Limitations and Strengths .....	30
Recommendations for Research and Practice.....	31
Conclusion .....	33
APPENDIX A: QUALITATIVE QUESTIONS.....	35
APPENDIX B: INFORMED CONSENT .....	38
APPENDIX C: INSTITUTIONAL REVIEW BOARD APPROVAL.....	42
REFERENCES.....	44

## LIST OF TABLES

Table 1. Demographic Characteristics of the Respondents.....	19
Table 2. Current Knowledge Regarding Birth Control Methods in Terms of Age Distribution .....	20

## LIST OF GRAPHS

Graph 1. Reasons for Birth Control Usage .....	21
Graph 2. Assessing for Attitude of Birth Control Methods Among Different Genders.....	22
Graph 3. An Assessment of Birth Control Methods and Race.....	23
Graph 4. Gender Differences in The Practice of Birth Control Methods .....	25
Graph 5. Birth Control Access in The Community .....	26

## CHAPTER ONE

### INTRODUCTION

#### Problem Statement

There is a lack of knowledge and effective practices of birth control methods amongst undergraduate college students causing a myriad of health disparities amongst this population (Institute for Women's Policy Research, 2020). Reproductive health applies to everyone, and public health prevention efforts should be made to reduce negative health outcomes. However, more often than not, practices as well as the ability to obtain knowledge about birth control methods, fall under the responsibility of a woman (The American College of Obstetricians and Gynecologists, 2017).

According to The American College of Obstetricians and Gynecologists "more than half of young men and a quarter of young women received low scores on contraceptive knowledge, and six in ten underestimated the effectiveness of oral contraceptives" (Frost et al., 2012, p.110). Not having the proper knowledge, attitude, and practice of birth control methods can put many at risk for a sexually transmitted disease or unplanned pregnancy when engaging in sexual activity. For the purpose of this study, all references to Knowledge, Attitude, and Practice regarding birth control methods include the available social support and the amount of access, and awareness of knowledge and the utilization of birth control methods.

Reproductive health is a key area of the Healthy People 2030 goals, with understanding and being knowledgeable of the various choices of birth control methods specifically targeting family planning and effective birth control (Healthy People 2030, n.d.). Also, reproductive health is important as “it is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (World Health Organization [WHO], 2021). There are many factors as to why birth control often gets overlooked, such as lack of knowledge, cultural norms, and misinformation which can impact where and how one accesses birth control. One example is the association with the stigmatization of birth control methods and social norms (Travis, 2020). Oftentimes when a person is on birth control, many assume that this person is sexually active (Travis, 2020). However, there are other reasons as to why a person may be on birth control, such as to prevent acne, to regulate irregular menstrual cycles, and to treat health conditions such as endometriosis and ovarian cysts (Bedsider, 2018). Cysts are sac-like fluids that build up in the ovaries and can be painful (Yen, 2021). The hormones present in birth control can help with the symptoms of these previously listed health conditions. Though most birth control methods pertain to females, this study aims to discuss how this information is beneficial and also a reproductive health right for all genders.

There are various factors that may influence one’s knowledge when it comes to birth control such as culture, religion, and misinformation. According to Srikanthan & Reid (2008), “religious and cultural factors have the potential to

influence the acceptance and use of contraception by couples. Within religions, different sects may interpret religious teachings on this subject.” Oftentimes, this commonly forgotten topic, due to cultural and religious reasons amongst undergraduate college students, results in being unaware of the knowledge and practices of the various birth control methods. Additionally, misinformation plays a factor in the perspective and attitude one has about birth control methods. Lack of knowledge due to misinformation impacts people’s attitudes towards education on birth control. One of the most common myths is that “a person could not get pregnant if it is their first time engaging in sex” (Cleveland, 2021, para. 9). Such myths are typically perpetuated in social circles, communities, and families and can mislead others. This misinformation may result in unplanned pregnancies or potentially expose individuals to a sexually transmitted infection (STI), previously known as “sexually transmitted diseases” (STD).

In this study, I will use the term “sexually transmitted infections” instead of “sexually transmitted diseases” due to the negative stigma associated with the terminology of the latter (State urgent care clinic, 2021). This misinformation can lead individuals to believe that they are not at risk for an STI if it is their first time engaging in sexual activity.

Providing college students with proper education on the available resources of birth control methods can allow them to be knowledgeable that unprotected sex can result in unplanned pregnancies or the transmission of STIs, whether it is their first time engaging in sexual activities or not. Also external and

internal condoms and abstinence are two birth control methods that help prevent pregnancy and sexually transmitted infections (OBGYN University of Colorado, 2021). Currently, STI rates are currently on the rise in some parts of Southern California (CDC,2018). According to the Centers for Disease Control and Prevention (CDC), roughly half of STIs occur among young people ages 15-24 years old. By providing this education to college undergraduate students, it leads to STI and unwanted pregnancy prevention.

### Purpose of Study

The purpose of this study is to assess birth control knowledge amongst college students and present existing disparities in terms of knowledge, attitude, and practice.

### Research Questions

1. What is the current knowledge regarding birth control methods among college students ages 18+?
2. Among college students, are there gender differences in attitude regarding birth control methods?
3. Among college students, does one's cultural background play a role in their understanding of birth control methods?
4. Among college students, are there gender differences in the practice of birth control methods?

## Significance to Public Health

The current practices of birth control methods result in significant health disparities within undergraduate college-students as there is a lack of knowledge and practice in birth control. Birth control knowledge and attitude should apply to college students regardless of those who are consensually participating in unprotected sexual activity. The knowledge and practices of birth control methods among undergraduate college students is a relevant topic. While many students desire to prevent pregnancies, their lack of information on suitable birth control methods could result in pregnancy. In addition, using an adequate birth control method, such as a condom, can protect undergraduate college students against STIs.

This study will assess knowledge, attitude, and practices of birth control methods among undergraduate college students by collecting quantitative data. Understanding the barriers could allow the design of effective communication materials or appropriate interventions for undergraduate college students created through miseducation, which is why this study intends to bring to light the importance of reproductive health knowledge. This thesis research will address what prevention looks like from an unbiased perspective. Knowledge and the availability of birth control methods should be accessible to everyone.

## CHAPTER TWO

### LITERATURE REVIEW

#### Knowledge

This chapter presents an assessment of Knowledge, Attitudes, and the Practices (KAP model) of birth control methods among undergraduate college students. According to a study that was conducted by Frost et al. (2012), titled “Young Adults’ Contraceptive Knowledge, Norms, and Attitudes: Associations with Risk of Unintended Pregnancy”, “women aged 18–29 have higher rates of unintended pregnancy than any other age group; it is necessary to understand what characteristics are associated with risky contraceptive use practices among this population” (p.107). The authors have also suggested new educational techniques are needed to reduce women’s risk of unintended pregnancy.

Frost et al.’s (2012) findings are an example of how there is a lack of information regarding birth control methods among college-aged students. College aged students lack an overall knowledge of the availability of various birth control options. By having the proper knowledge of birth control methods, one can decide what method works best for them and fits their lifestyle. As there are various methods, one needs to talk to their healthcare provider about their questions and concerns. Some of these methods include hormonal methods such as the pill, patch, IUD, etc. Nonhormonal methods which include male or female condoms can be used to also prevent STIs and pregnancy. Choosing to not engage in any sexual activity also known as abstinence is another method

one can utilize. A permanent method would be by getting a surgery known as vasectomy or tubal ligation. However, the survey indicates that not many college students had knowledge of this information. Frost et al. (2012) conducted a survey to measure the knowledge of young adults regarding facts about contraceptive methods. This survey consisted of 23 true or false questions regarding birth control methods. Out of the participants who took their survey, only 10% answered 19-23 questions correctly, while 20% answered 16-18 questions correctly.

The purpose of this study was to measure four different aspects of birth control knowledge. The study was broken down into four categories:

The first one assessed whether respondents reported that it was likely (either very or somewhat) that they would have unprotected sex in the next three months. Another measured whether respondents reported that they (or their partner) were currently using a hormonal or long-acting reversible contraceptive method (the pill, injectable, patch, vaginal ring, IUD, or implant). The third variable measured whether respondents in a relationship reported that they were not using any medical method to prevent pregnancy (either using no method at all or depending only on withdrawal or natural family planning). The last variable measured whether female contraceptive users reported inconsistent use in the past three months; inconsistent use included missing any pills, not using a condom

each time, getting an injection late, and relying on withdrawal or natural family planning (Frost et al., 2012).

Breaking down the study into different components allows for researchers to focus on different aspects of the data. One of the discoveries that were made through the breakdown of this study was that male participants had lower knowledge of birth control methods. Between men and women, women demonstrated more knowledge regarding birth control methods and scored higher on the survey conducted in comparison to men.

It is very important to understand and address the barriers that prevent young adults from gaining complete and accurate information about the various birth control methods. For example, lack of birth control knowledge among college students is of particular concern because lack of knowledge contributes to the likelihood of engaging in sexually risky behavior. According to the Institute for Women's Policy Research (2020), "young people are at greater risk for unintended pregnancies and sexual risk behaviors, with many lacking adequate knowledge of pregnancy risk and contraceptive options" (p. 3). This statement highlights the importance of how young students are at a greater risk for risky sexual behavior. At the same time, their knowledge of available birth control methods is very low. This can put someone at risk for unintended pregnancy or STI.

Another study assessed the importance of knowledge of birth control methods amongst college students and young adults and found out that

participants' "awareness of actual pregnancy risk and contraceptive knowledge were low, with many holding fears and negative beliefs about contraception" (Cabral et al., 2018, p. 4). Three-quarters of undergraduate college students reported that avoiding pregnancy was a high priority to them, with 80% of those students felt that having a child while in school would make it harder to accomplish their academic goals, yet the undergraduate college students knew very little about the many contraceptive methods available to them (Prentice et al., 2012). "These findings demonstrate a discrepancy between young people's desire to avoid pregnancy and the knowledge and ability to successfully do so" (Prentice et al., 2012, p. 4). Having the proper knowledge can result in putting an end to false information and stereotypes. Having the correct knowledge can also lead to better resources and utilization of birth control methods. Findings from these studies are a small portion of many examples of how there is a gap of knowledge regarding birth control knowledge in young adults and college students.

### Attitude

Many studies break down the correlation between knowledge and attitude as they pertain to birth control methods. It is common for those who have a lack of knowledge to also have a negative attitude toward safe sex practices. A negative attitude toward safe sex practices can be influenced by cultural background, religion, or lack of education in regard to birth control methods (Heisler & Van Eron, 2012). A study done by Heisler & Van Eron (2012) identified

a significant difference in attitude and how that makes the practice of birth control methods a challenge to many. The purpose of their study was to focus on undergraduate college students and their attitudes regarding birth control methods with the intention of helping them prevent unintended pregnancies and STIs. The results from the research indicated that 80% of sexually active college females were not seeking to become pregnant, and of the participants, more than 60 out of 120 women had a positive attitude regarding contraceptives and those with higher scores were more likely to be consistent in contraceptive use (Heisler & Van Eron, 2012). Men had a different attitude than women, which could affect women's patterns of behavior (Heisler & Van Eron, 2012). This is important because even if a woman has a positive attitude regarding birth control, it could still be influenced by a partner not wanting to use a certain form of birth control method which can lead to an unplanned pregnancy or an STI.

As these studies concluded, attitudes about birth control play an important role when it comes to contraceptive usage for both men and women. It is therefore of great importance to ensure the education of young people as it pertains to safe sex practices. This could increase the likelihood of maintaining a positive attitude toward birth control.

### Practice

Previous studies have demonstrated how the knowledge of, and attitude toward contraceptives either negatively or positively influence the use of available birth control. A descriptive study conducted among undergraduate

students at the University of New Hampshire with regards to their contraceptive attitudes has shown how practice is influenced by attitude (Frost et al., 2012).

The most popular primary contraceptive among participating students surveyed was oral contraceptives with 58.4% of students using this method. Other notable methods included male condoms (24.7%) and abstinence (7%), and 3.7 % of students surveyed reported being sexually active, and using no method of contraceptive. Compared to the 2008 national reports from the Guttmacher Institute, the primary contraceptive method among women in the U.S said to be birth control pills, used by 10.7 million women. This finding correlated to their results that the pill is the most commonly used contraceptive method. This was reassuring because they had originally thought that the birth control pill was the most widely used simply because their participants were mainly female. Further, national data reported that tubal sterilization was the second most popular choice with 10.4 million women electing this service (Heisler & Van Eron, 2012)

Heisler & Van Eron (2012) found that women also felt that men should be responsible for birth control practices. While 89% of women felt that contraceptive responsibility should be shared between men and women, only 51.8% reported responsibility was shared between male and female partnerships. In further, in assessing the attitude of participants, 24% of women thought they should be responsible for attaining oral contraceptives and men should be responsible for providing condoms. Also, younger women in the study

who were in their first year of college had lower odds of reporting shared responsibility in practice as compared to older ones (Heisler & Van Eron, 2012). Hence, this supports Heisler and Van Eron's (2012) findings that men had a more negative attitude towards birth control, and this negatively impacted their interest to effectively utilize them.

The use of birth control should be the responsibility of anyone who chooses to engage in sex and wishes to avoid unplanned pregnancy. Research shows that teenagers and adult women who reported conflicted attitudes toward pregnancy or low motivation to avoid pregnancy had an elevated likelihood of engaging in risky contraceptive practices such as no or inconsistent use of a birth control method (Heisler & Van Eron, 2012,). Factors that may affect the use of and practice of contraceptives include miseducation, cultural or religious backgrounds, lack of knowledge, race, ethnicity, and nativity. For example, participants with minority or immigrant backgrounds had a higher possibility of using unsafe contraceptive practices (Heisler & Van Eron, 2012). There were many other influential factors such as school or employment status, age, and education. For example, women in relationships who were in school and not working had reduced odds of using contraceptives, older women had reduced odds of being inconsistent users, and more educated women in relationships had decreased odds of being nonusers (Heisler & Van Eron, 2012). Heisler and Van Eron (2012) highlighted the many influences that affect one choice of using birth control methods such as normative influences from a partner, worry, STI and

pregnancy preventions, and social stigma. The lack of knowledge or negative attitude on birth control methods could be the reason one does not use birth control methods.

According to research and data of Heisler and Van Eron (2012), accurate knowledge on birth control methods appears to be a barrier many undergraduate college students face. As previously mentioned, there are many gaps between undergraduate college men and women on knowledge, attitude, and practice (KAP) regarding birth control methods. With the correct knowledge, college students can be empowered to make the best decisions that will influence their attitude with regards to healthy sex practices.

Other studies have done great work at analyzing the correlation between KAP and how they each play a huge role towards birth control utilization. This study is important as it acknowledges the many barriers that need to be broken, gaps of knowledge to be filled, and negative stereotypes that need to be overcome. What is missing in the current literature are studies that elucidate the knowledge about birth control among undergraduate college students from a Minority Serving Institution (MSI) with a majority of first-generation college students.

## CHAPTER THREE

### METHODS

#### Study Design

This study employed quantitative research methods to assess undergraduate college student's Knowledge, Attitude, and Practice of birth control methods. An online cross-sectional survey using Google forms was created with questions to identify the barriers of education that exist regarding birth control methods for college students (Appendix A – Survey).

In addition, an educational 5-minute video was created for this study and distributed to those who completed the survey as a resource. The presentational video emphasized the importance of Knowledge, Attitude, and Practice regarding birth control methods among the study population. The video also provided resources that one can seek if needed. The video highlighted the surface of the study to help bring awareness of birth control methods among undergraduate college students. For the purpose of this study, the concept of school learning refers to birth control knowledge that was received in a School incorporated Sexual Health Education curriculum.

#### Data Source and Collection

Data for this study was collected from one general education introductory course at the end of the Fall 2021 semester from a four-year university. The distribution of the survey was later extended to two additional undergraduate

courses offered in the Winter Intersession 2021-2022 in order to capture more data. Upon the Institutional Review Board (IRB) approval, the instructors of these three courses were contacted through email soliciting their consent to assist with data collection that only encompasses the distribution of the survey and the voice-recorded PowerPoint presentation to their students. Once the instructors gave their consent, an additional email was sent out with further instructions on how to introduce the study to the participants followed by the link to the Google survey.

A five-minute voice-recorded educational PowerPoint presentation was then distributed after the participants completed the survey as a resource for the study participants with the intention of bringing awareness on the topic of birth control methods amongst undergraduate college students. After the Informed Consent instructions (Appendix B) were provided, the survey was taken anonymously and willingly. A total of 63 students participated in the survey.

### Measures

A rigorous literature review was done, along with the survey consisting of in-depth questions to better understand the gap in knowledge between undergraduate college students and their understanding of birth control methods. A total of 11 questions were created and were broken down by Demographic characteristics, Attitudes, Knowledge, and Practices of birth control methods. The purpose of this survey was to capture participants' reflections and their own experiences regarding the education or miseducation surrounding the topic.

Also, another highlight of the survey was to shed light on the many barriers and responsibilities undergraduate college students face regarding birth control. The survey questions were specifically designed to answer the questions that were not found within other literature reviews. Specifically, questions on the survey were based on a 5-point Likert scale with options such as [*Strongly Agree, Agree, Neutral, Disagree, or Strongly disagree*] & [*Not concerned, A little concerned, Neutral, Somewhat concerned, or Very Concerned*]. The Likert scale was purposefully done in order to better understand the participant's concerns on Knowledge, Attitude, and Practices of birth control methods between men and women participants.

#### Data Analysis

Data analysis was conducted using SPSS version 29.0 and Microsoft Excel software to assess for Knowledge, Attitude, and Practice of birth control methods amongst undergraduate college students. Descriptive statistics, using an excel table and chart was performed to address research question 1 that assessed student knowledge of birth control methods in terms of age distribution. Descriptive statistics, using an excel table and chart was performed to address research question 2 that assessed gender differences in attitude regarding birth control methods. Descriptive statistics, using an excel table and chart was performed to address research question 3 that assessed student knowledge of birth control methods due to their cultural background. Descriptive statistics,

using an excel table and chart was performed to address research question 4 that assessed gender differences in the practice of birth control methods.

#### Ethics

Institutional Review Board (IRB) approval was secured from the university committee IRB-FY2022-110.

## CHAPTER FOUR

### RESULTS

In this chapter, the results of the data collected regarding the Knowledge, Attitude, and Practice of birth control methods amongst college students is discussed.

The demographics are displayed below as shown in Table 1. Sixty-three undergraduate students responded to the survey. The data was collected from three undergraduate courses electronically via Google survey. Eighty-seven percent of the participants were female, and the remaining 13% were male. This allowed the study to identify the difference of Knowledge between the two populations, females, and males. Most of the participants (63.5%) were between the ages of 18-21, followed by (14.3%) who were ages 22-25, then (9.5%) who were ages 26-29, and only 12.7% were 30 years or older. In terms of race distribution, 69.8% of the participants identified as Hispanic or Latino, followed by 17.5% who identified as White or European American. In addition, 6.3% identified as Asian or Pacific Islander as well as Black or African American. When it came to academic standing distribution, findings shows that the majority of the participants were in their third year of college (39.7%), followed by those who are first-year students (20.6%). Further, findings shows that there was a tie between the first year and fourth year at 15.9% each. Finally, those who identified as fifth or more years of attending college were 7.9%. The demographic characteristics

results collected from the undergraduate students mirrors the population within the university.

## Demographics

**Table 1.** Demographic Characteristics of the Respondents

Variable	Overall (N = 63)	
	N	%
<b>Gender</b>		
Female	55	87.3
Male	8	12.7
<b>Age</b>		
18-21	40	63.5
22-25	9	14.3
26-29	6	9.5
30+	8	12.7
<b>Race</b>		
Asian or Pacific Islander	4	6.3
Black or African American	4	6.3
Hispanic or Latino	44	69.8
Native American	0	0
White or European American	11	17.6
<b>Academic standing</b>		
First Year	13	20.6
Second Year	10	15.9
Third Year	25	39.7
Fourth Year	10	15.9
Fifth Year or more	5	7.9
Graduate student	0	0

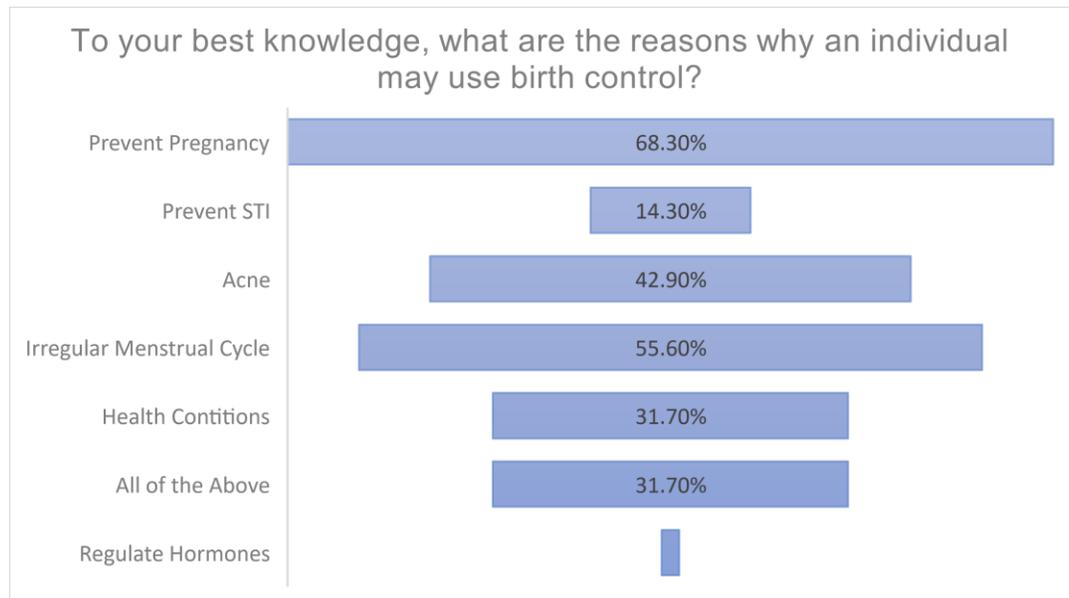
Research Question 1

*What is the current knowledge regarding birth control methods among college students in terms of age distribution?*

**Table 2.** Current Knowledge Regarding Birth Control Methods in Terms of Age Distribution

Age	Home	School	Friends	Doctors	Religion	Other	No
18-21 (n=40)	2.50%	47.50%	12.50%	25.00%	0.00%	2.50%	10.00%
22-25 (n=9)	0	22.22%	44.45%	22.22%	0.00%	11.11%	0.00%
26-29 (n=6)	16.67%	16.67%	33.33%	33.33%	0.00%	0.00%	0.00%
30+ (n=8)	11.11%	33.34%	22.22%	22.22%	0.00%	0.00%	11.11%

Table 2 above summarized the source of information regarding birth control methods reported amongst undergraduate college students by their age distribution. Each participant was able to select one of the following options or fill in their response under “other” source of information regarding birth control. Based on the data shown, 47.50% of the students between the ages of 18-21 received knowledge on birth control methods from a school setting. Among 22–25-year-olds, the majority of them (44.45%) received information from their friends. In addition, students ages 26-29 tied at 33.33% in receiving knowledge through friends or doctors. Lastly, 33.34% of those who were 30+ mostly received their education on birth control methods through their school systems.

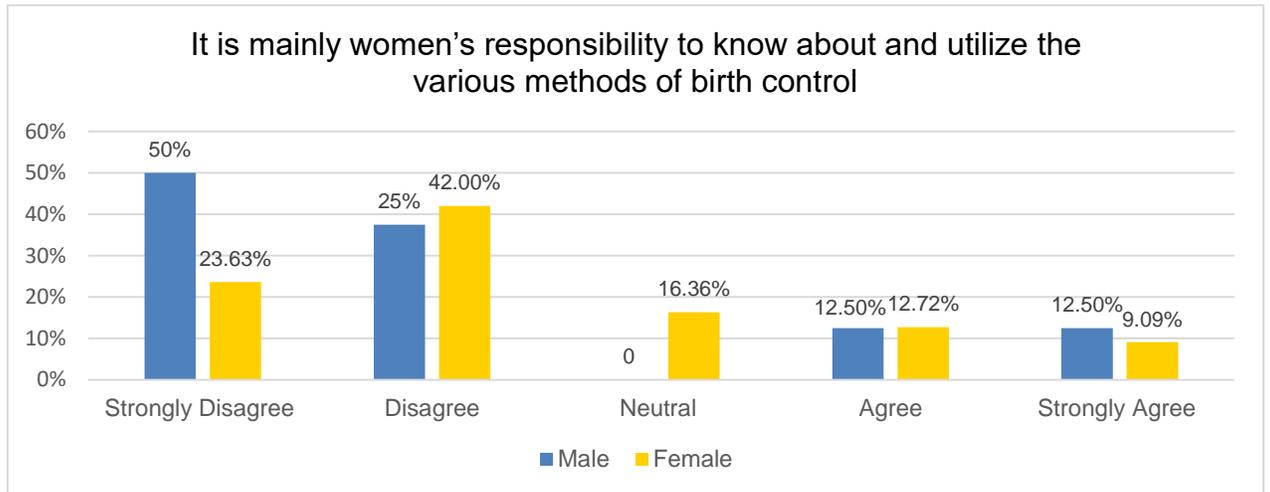


**Graph 1. Reasons for Birth Control Usage**

Graph 1 above demonstrates the knowledge regarding the various reasons one may utilize a birth control method. Participants could select multiple reasons. Among study participants, 68.30% answered that the reason why one may utilize birth control is to prevent pregnancy, followed by 55.60% who may use them to regulate an irregular menstrual cycle. Further, a sample of 42.60% of participants may use birth control to help with acne. In addition, there was a tie between those who chose all of the above or health conditions at 31.70%. Finally, 14.30% of the participants use birth control to prevent STIs.

## Research Question 2

*Among college students, are there gender differences in attitude regarding birth control methods?*



**Graph 2.** Assessing for Attitude of Birth Control Methods Among Different Genders

Graph 2 above illustrates the attitude of birth control methods amongst undergraduate college students of those who identified as male or female. Graph 2 indicates that 50% of males and 23.63% of females answered strongly disagree while 25% of males and 42.00% of females disagree that this responsibility should only fall on women. Interestingly, 16.36% of females felt neutral on the matter. On the other hand, results show that 12.50% of males and 12.72% of females agreed that women are responsible for Birth Control methods; however, 12.50% of men and 9.09% of females strongly agreed that it is mainly

the woman’s responsibility to know about and utilize the various methods of birth control.

Research Question 3

*Among college students, does one’s cultural background plays a role in their knowledge of birth control methods?*

**How often was the issue of birth control methods discussed in your family home \* Race Crosstabulation**

			Race				
			Hispanic/Latinx	White/European	Black/African American	Asian/Pacific Islander	Total
How often was the issue of birth control methods discussed in your family home	Never	Count	18	3	3	4	28
		% within How often was the issue of birth control methods discussed in your family home	64.3%	10.7%	10.7%	14.3%	100.0%
	Rarely	Count	17	5	1	0	23
		% within How often was the issue of birth control methods discussed in your family home	73.9%	21.7%	4.3%	0.0%	100.0%
	Don't Remember	Count	2	0	0	0	2
		% within How often was the issue of birth control methods discussed in your family home	100.0%	0.0%	0.0%	0.0%	100.0%
	Sometimes	Count	2	3	0	0	5
		% within How often was the issue of birth control methods discussed in your family home	40.0%	60.0%	0.0%	0.0%	100.0%
	Often	Count	5	0	0	0	5
		% within How often was the issue of birth control methods discussed in your family home	100.0%	0.0%	0.0%	0.0%	100.0%
Total		Count	44	11	4	4	63
		% within How often was the issue of birth control methods discussed in your family home	69.8%	17.5%	6.3%	6.3%	100.0%

**Graph 3. An Assessment of Birth Control Methods and Race**

Graph 3 above assess for cultural practices among different racial and ethnic groups. Two survey questions “*What best describes your race/ethnicity?*” and “*How often was the issue of birth control methods discussed in your family home?*” were used. Results demonstrate that, overall, 80.9% of the participants never or rarely discussed birth control methods in their family homes. Only two

participants did not remember discussing birth control methods at home. Five of the participants responded that birth control methods were sometimes or often discussed in their family home.

As the participant's race and ethnicity were further taken into consideration, those who identified as Hispanic/Latinx (64.3%) responded that there were never discussions about birth control methods in their homes. Furthermore, (73.9%) of the Hispanic/Latinx said that the topic of birth control methods was rarely discussed at home. However, five of the Hispanic/Latinx participants answered that the topic of birth control methods was often discussed in their family home.

White/European participants, (10.7%) responded that they had never talked about birth control methods in their family home, (21.7%) rarely talked about it, and only (60%) of the participants said that the discussion of birth control methods was sometimes done within their family home.

In addition, participants who identified as Black/African American, (10.7%) response indicated never, (4.3%) indicated rarely discussed to the topic of birth control methods being discussed at their homes. Last but not least, (14.3%) of Asian/Pacific Islanders participants answered that birth control methods topic was never discussed in their family home.

## Research Question 4

*Among college students, are there gender differences in the practice of birth control methods?*

**Gender \* BCMethods Crosstabulation**

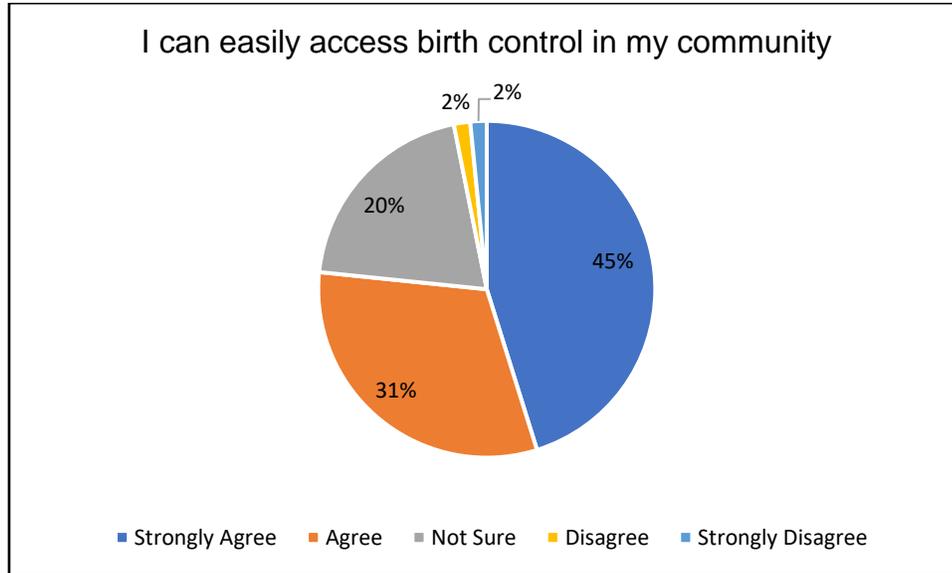
		BCMethods							
		Hormonal	NonHormonal	Abstinence	Longterm	None	Other	Total	
Gender	Male	Count	5	1	1	0	0	1	8
		% within Gender	62.5%	12.5%	12.5%	0.0%	0.0%	12.5%	100.0%
	Female	Count	27	15	7	2	3	1	55
		% within Gender	49.1%	27.3%	12.7%	3.6%	5.5%	1.8%	100.0%
Total		Count	32	16	8	2	3	2	63
		% within Gender	50.8%	25.4%	12.7%	3.2%	4.8%	3.2%	100.0%

### **Graph 4. Gender Differences in The Practice of Birth Control Methods**

In Graph 4 above, descriptive statistics were conducted on the two survey questions “*What is your gender?*” and “*When engaging in sexual intercourse what is your preferred method of birth control?*”. Findings indicate that, among female participants, the most popular birth control method used was hormonal (49.1%), and among male participants, their preference of their partners birth control method was hormonal (62.5%). Nonhormonal methods were popular among females (27.3%) in comparison to males (12.5%).

Further, 2.7% of female participants disclosed practicing Abstinence (12.7%) in comparison to males (12.5%). Participants who have secured Long-term solutions such as surgery/tubal ligation was found among a small sample of females (3.6%) with no male respondents to this option. Further, females (5.5%) responded to not using any birth control methods. When asked to provide *Other* options used, there was a small number of females (1.8%) who are practicing the

natural calendar methods while the remaining (12.5%) males are leaving that decision to their female partners to decide.



**Graph 5.** Birth Control Access in The Community

Graph 5 shown above, displays the percentages of those who felt that they can easily access the utilization of birth control methods in their community. As presented above, 45% strongly agreed that they can easily access a birth control method that best fits them while 31% strongly felt that they had the resources easily available to them in their community. Concluding 76% reported they thought it is easy to access birth control in their communities. However, 20% of the respondents were not sure if the resources were easy to reach in their community when utilizing birth control.

## CHAPTER FIVE

### DISCUSSION

This study assessed the Knowledge, Attitude, and Practices of birth control methods amongst undergraduate college students. Most of the participants were in their third year of college, the majority identified as females, Hispanic/ Latinx, and between the ages of 18-21. These findings are consistent with the university's demographic characteristics of its student population body.

Findings from **Research Question 1** which is "*What is the current knowledge regarding birth control methods among college students in terms of age distribution*" inferred that there is a lack of education regarding birth control methods in a school setting for those ages 22-29 (38.89%). Although many participants received this knowledge from a variety of setting (i.e., home, school, friends, doctors), this knowledge is not evenly distributed. Further, nearly 8% of all participants indicated not receiving any information about birth control methods from any source. This is consistent with existing literature displayed in chapter two by Frost et al. (2012) findings stating that there is a lack of information regarding birth control methods among college-aged students. Further, Cabral et al. (2018) findings also demonstrated a lack of awareness of actual pregnancy risk and contraceptive knowledge, with many participants holding fears and negative beliefs about contraception. Based on Cabral et al.'s (2018) findings and the survey conducted from this study; one can conclude that there is a gap of knowledge regarding birth control methods among

undergraduate college students without a nuanced focus on a particular age group.

Findings related to **Research Question 2** which is “*Among college students, are there gender differences in attitude regarding birth control methods*” and the findings related to previous studies’ existing literature displayed in chapter two by Heisler & Van Eron (2012) identified a significant difference in attitude and how that makes the practice of birth control methods a challenge for any. Based on the survey findings from this study, 42% of those who identified as females disagreed that it is mainly the female’s responsibility to learn and utilize birth control, whereas 37.50% of males disagreed. Results show that more women disagreed with this statement in comparison to male participants. Based on the presented literature in chapter two, it is possible to examine how gender attitude has a huge influence on the practice of birth control among college students. This was also presented in one of the studies from the literature review that found that men had a negative attitude compared to women, which can lead women to abstain from birth control use (Heisler & Van Eron, 2012). This is important because even if a woman has a positive attitude regarding birth control, it could still be influenced by a male partner not wanting to use a certain form of birth control method which can lead to an unplanned pregnancy or an STI.

The findings from **Research Question 3** regarding “*College student’s cultural background and how it influences their knowledge of birth control*”

*methods*” are presented below. Due to the relationship between research question 3 and the survey question it is shown that more than half of the participants who identified as minority never or rarely discussed the topic of birth control method at home. These findings are similar to Heisler & Van Eron (2012) whose study concluded that there is a cultural influence between undergrad college students and their knowledge of birth control methods. Some of those factors that may affect the use of, and practice of contraceptives include miseducation, cultural or religious backgrounds, lack of knowledge, race, ethnicity, and nativity (Heisler & Van Eron, 2012). For example, respondents with minority or immigrant backgrounds had a higher risk of engaging in risky contraceptive use practices (Heisler & Van Eron, 2012). The results and demographics from this survey supports Heisler & Van Eron, (2012) as the college campus where the survey was conducted is primarily a first-generation minority serving institution. An article by Kimberly A Griffin (2020) titled “Institutional Barriers, Strategies, and Benefits to Increasing the Representation of Women and Men of Color in the Professoriate” discusses the barriers that minorities students face, and as a result of this, it has a negative impact on their education.

Furthermore, studies from **Research Question 4** assessed if “*there are any gender differences in the practice of birth control methods among college students*”. Findings suggest that, for many participants, when engaging in sexual intercourse, 49.1% women tend to utilize hormonal birth control whereas 62.5%

of men prefer that method for their female partners. Further, nonhormonal methods were popular among females (27.3%) in comparison to males (12.5%). Hence, findings from this research study and the literature review by Heisler & Van Eron, (2012) found that while 89% of women felt that contraceptive responsibility should be shared between men and women, only 51.8% reported responsibility was shared between males and female's partnerships. Based on the results from the survey that was provided, it is seen that hormonal birth control is the preferred method among female and male participants. Overall, findings correlate with the literature provided in chapter two that most of the responsibility is placed on the woman which creates a gender difference regarding the knowledge, attitude, and practice of birth control methods (Heisler & Van Eron, 2012).

#### Limitations and Strengths

There were several limitations that were observed during this study. First, the data collection within a short time frame at the end of the Fall semester. Hence a modified IRB was completed in order to secure permission to recruit participants from two additional course sessions offered in the winter session. Second, the method used to solicit participation was strictly online since classes were conducted virtually. An email was used to engage the participants rather than going to each class in person making it less engaging to motivate survey completion. Third, online data collection and a small study time frame of six weeks resulted in a small sample size which impacts data generatability. Also, because

there were no incentives provided to participants it is possible that a comprehensive sample size was not collected. If incentives were provided it is possible that more students would have participated which would have led to a more representative sample. Last but not least, the small sample size did lack diversity in such a way that it is hard to generalize the study to a larger population. For example, having a limited sample size in some of the subgroups such as n=8 males, n=4 Black/African America, n=4 Asian.

Despite the limitations of this study, there were several strengths. One of the strengths is the use of quantitative research method and hence the results can be easily visualized to the audience through tables and graphs. Secondly, this study is a part of reproductive health topic which applies to everyone and sheds light on a topic that can often be seen as taboo. Third, the study collected primary data that was specifically relevant in fulfilling the study purpose and answering its associated research questions.

### Recommendations for Research and Practice

Some recommendations for research include: First, future research is highly encouraged that would further dissect and analyze the factors that are associated with having conversations regarding birth control methods. As presented in this research, it suggests that there is a lack of knowledge regarding birth control methods amongst undergraduate college students. In order to address this gap, the implementation of evidence-based approaches in educating youth on birth control methods is essential, i.e., whether it is at home, school,

peers, and/or other resources. Study shows that “awareness of actual pregnancy risk and contraceptive knowledge were low, with many holding fears and negative beliefs about contraception” (Cabral et al., 2018, p. 4). Providing accurate education regarding birth control methods can also reduce the negative attitude a person may have regarding birth control methods. Also, assessing how accurate the information that one receives regarding birth control methods from a source that is not related to an educational institution is recommended. A second recommendation is to conduct more research using the Knowledge, Attitude, and Practice model on the topic of birth control methods amongst undergraduate college students for a longer duration of time with the goal of producing a larger sample size. This study’s findings and the current literature suggest that there is a gap in Knowledge, Attitude, and Practice of birth control methods among undergraduate college students. There are a few suggestions to help shorten this gap, and some of these suggestions include: providing accurate education and awareness regarding the various birth control methods. According to research and data of Heisler and Van Eron (2012), accurate knowledge on birth control methods appears to be a barrier many undergraduate college students face. Also, increasing access to local resources that provide reproductive health services is one of the best approaches in addressing this topic (Ranji et al.,2019). These suggestions could help change the negative attitudes of those who have received inaccurate information regarding birth control methods or those who may have not received any dues to negative

stigma surrounding the topic. A negative attitude toward safe sex practices can be influenced by cultural background, religion, or lack of education in regard to birth control methods (Heisler & Van Eron, 2012). Providing local resources that will help those who may be seeking interest in a birth control method is also a good strategy.

### Conclusion

The purpose of this study was to examine the Knowledge, Attitude, and Practice of birth control methods amongst undergraduate college students at a public university. Since there are many factors that may influence a person's decision when it comes to birth control methods, it is important to have accurate and unbiased knowledge which can impact one's attitude and practices of birth control usage. Frost et al.'s (2012) findings are an example of how there is a lack of information regarding birth control methods among college-aged students. College-aged students lack an overall knowledge of the availability of various birth control options. Hence more studies need to be done in order to identify the gap of knowledge amongst different age groups of college students with the goal of preventing unwanted pregnancies or the spread of STIs. As previously mentioned, there are various factors that may influence one's knowledge when it comes to birth control such as culture, religion, and misinformation (Srikanthan & Reid, 2008). Navigating the difference of cultural identity yet being well informed on reproductive topics while reducing negative stigma on birth control methods is important to help bring awareness to those who were neither well informed nor

made aware. More studies should be conducted using evidence-based strategies that will reduce negative perception surrounding the topic of birth control, as it is a topic that is not limited by one's age, gender, race/ethnicity, culture, and education.

APPENDIX A  
QUALITATIVE QUESTIONS

1. What is your age range?
  - 18-21
  - 22-25
  - 26-29
  - 30+
  
2. What is your gender?
  - Male
  - Female
  - Other
  
3. What best describes your race/ethnicity?
  - White/European American
  - Black/African American
  - Hispanic/ Latinx
  - Native American
  - Asian/ Pacific Islander
  
4. What is your current academic standing level?
  - First Year
  - Second Year
  - Third Year
  - Fourth Year
  - Fifth or More
  - Graduate Student
  
5. To your best knowledge, what are the reasons why an individual may use birth control?
  - Prevent Pregnancy
  - Prevent STI
  - Acne
  - Irregular Menstrual Cycle
  - Health Conditions
  - All the above
  - Regulate hormones
  
6. What is your level of interest in the various methods of birth control?
  - Not Concerned
  - A Little Concerned
  - Neutral
  - Somewhat Concerned
  - Very Concerned

7. It is mainly women's responsibility to know about and utilize the various methods of birth control?
  - Strongly Agree
  - Agree
  - Neutral
  - Disagree
  - Strongly Disagree
8. When engaging in sexual intercourse what is your preferred method of birth control?
  - Hormonal (ex: pills, patch, IUD, Etc.)
  - Non-hormonal (condoms, Etc.)
  - Abstinence
  - Long Term (Surgery)
  - None
  - Let female spouse decide her preferred method
  - I have not engaged in intercourse
  - Natural family planning (tracking ovulation)
  - Not engage with a male
9. How often was the issue of birth control methods discussed in your family home?
  - Often
  - Sometimes
  - Don't Remember
  - Rarely
  - Never
10. Have you received any knowledge on birth control methods before entering college, If so from where?
  - Home
  - School
  - Friends
  - Doctors
  - Church/ Religion
  - No
  - My sister, (it was a normal conversation between us)
  - Social media
  - A combination of friends and doctors

APPENDIX B  
INFORMED CONSENT

## INFORMED CONSENT

Birth Control Knowledge, Attitude, and Practices Among College Students:

The study in which you are being asked to participate is designed to investigate your knowledge, attitude, and practices regarding required birth control methods as a student here at California State University San Bernardino (CSUSB). This study is being conducted by Professor: Salome Kapella Mshigeni and Graduate Student: Andrea Galeas from the College of Natural Sciences – Department of Health Sciences and Human Ecology, from California State University, San Bernardino. This study has been approved by the Institutional Review Board, California State University, San Bernardino.

**PURPOSE:** This study examines the views of college students about their knowledge on birth control methods. A major goal of the Center for Disease Control and Prevention (CDC) is to reduce the prevalence rate of premature pregnancy as a result of lack of proper education regarding birth control methods. The purpose of this study is to bring awareness to birth control methods, understand how they are meant to work and their purpose. I also aim to highlight the importance of this topic regarding reproductive health amongst college students. With this study, I would also be able to bring to light how this particular responsibility is left to a certain population. We hope to gain an understanding of how college students perceive birth control practice.

**DESCRIPTION:** We use survey questions to study whether students view birth control as important and useful for their overall health. Our study will provide some knowledge that help us understand how university students view birth controls.

**PARTICIPATION:** Your participation is completely voluntary, and you do not have to answer any questions you do not wish to answer. There is no right or wrong answer. You may skip or not answer any questions and can freely withdraw from participation at any time. Specifically, it will have no effect on your enrollment here at CSUSB. Only students who agree to participate will be included.

**CONFIDENTIAL OR ANONYMOUS:** You do not need to provide any personal information as the goal of this study is to make sure you always remain anonymous.

**DURATION:** The expected duration of this study is 6 to 10 minutes of your time.

**RISKS:** There are no risks or any expected discomforts as a result of your participation.

**BENEFITS:** Benefits to you as a study participant is to gain information regarding birth control practices and how they can help your overall health and those around you while on campus and at home thereafter.

**VIDEO/AUDIO/PHOTOGRAPH:** Not applicable.

CONTACT: If you have any pertinent questions about the research and research subjects' rights, and whom to contact in the event of a research-related concern, please reach out to the following study advisor(s):

Salome Mshigeni

Salome.mshigeni@csusb.edu

909-537-4337

RESULTS: The results of this study can be obtained from the College of Natural Science: Department of Health Science and Human Ecology: 5500 University Parkway, San Bernardino CA 92407.

CONFIRMATION STATEMENT: I understand that I must be 18 years of age or older to participate in your study, have read and understand the consent document and agree to participate in your study

APPENDIX C  
INSTITUTIONAL REVIEW BOARD APPROVAL

# INSTITUTIONAL REVIEW BOARD APPROVAL

December 10, 2021

## CSUSB INSTITUTIONAL REVIEW BOARD

Protocol Change/Modification

IRB-FY2022-110

Status: **Approved**

Prof. Salome Mshigeni and Andrea Galeas  
CNS - Health Science  
California State University, San Bernardino  
5500 University Parkway  
San Bernardino, California 92407

Dear Professor Salome Mshigeni and Andrea Galeas:

The protocol change/modification to your application to use human subjects, titled "Assessing Knowledge, Attitude, and Practice of birth control methods amongst undergraduate college students" has been reviewed and **approved** by the Chair of the Institutional Review Board (IRB). A change in your informed consent requires resubmission of your protocol as amended. Please ensure your CITI Human Subjects Training is kept up-to-date and current throughout the study. A lapse in your **approval** may result in your not being able to use the data collected during the lapse in your **approval**.

This **approval** notice does not replace any departmental or additional campus **approvals** which may be required including access to CSUSB campus facilities and affiliate campuses. Investigators should consider the changing COVID-19 circumstances based on current CDC, California Department of Public Health, and campus guidance and submit appropriate protocol modifications to the **IRB** as needed. CSUSB campus and affiliate health screenings should be completed for all campus human research related activities. Human research activities conducted at off-campus sites should follow CDC, California Department of Public Health, and local guidance. See CSUSB's [COVID-19 Prevention Plan](#) for more information regarding campus requirements.

You are required to notify the **IRB** of the following by submitting the appropriate form (modification, unanticipated/adverse event, renewal, study closure) through the online Cayuse **IRB** Submission System.

1. If you need to make any changes/modifications to your protocol submit a modification form as the **IRB** must review all changes before implementing them in your study to ensure the degree of risk has not changed.
2. If any unanticipated adverse events are experienced by subjects during your research study or project.
3. If your study has not been completed submit a renewal to the **IRB**.
4. If you are no longer conducting the study or project submit a study closure.

You are required to keep copies of the informed consent forms and data for at least three years.

You are required to keep copies of the informed consent forms and data for at least three years.

If you have any questions regarding the **IRB** decision, please contact Michael Gillespie, Research Compliance Officer. Mr. Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at [mjillesp@csusb.edu](mailto:mjillesp@csusb.edu). Please include your application **approval** number **IRB-FY2022-110** in all correspondence.

Best of luck with your research.

Sincerely,

*Nicole Dabbs*

Nicole Dabbs, Ph.D, **IRB** Chair  
CSUSB Institutional Review Board

ND/MG

## REFERENCES

- American College of Obstetricians and Gynecologists . (2015, December). *Access to contraception*. ACOG. Retrieved April 25, 2022, from <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2015/01/access-to-contraception>
- Boskey, E. (2021, October 19). *What is the worst that could happen if I don't get tested for stis?* Verywell Health. Retrieved April 25, 2022, from <https://www.verywellhealth.com/what-could-happen-if-i-dont-get-tested-for-stds-3132741>
- California Family PACT. (n.d.). *What services are covered by family pact? What Services are Covered by Family PACT?* Retrieved April 25, 2022, from <https://familypact.org/services-covered/>
- Centers for Disease Control and Prevention. (1997, September). *Wonder std document*. Centers for Disease Control and Prevention. Retrieved April 25, 2022, from <https://wonder.cdc.gov/wonder/std/STDD000.PCW.html>
- Cleveland Clinic. (2018, September 28). *Contraception myths*. Contraception Myths21. Retrieved April 25, 2022, from <https://my.clevelandclinic.org/health/articles/9137-contraception-myths>
- Endometriosis Medical Treatment - Brigham and Women's Hospital. (2021, November 11). *Medical treatments for endometriosis*. Medical Treatments

for Endometriosis. Retrieved April 25, 2022, from <https://www.brighamandwomens.org/obgyn/infertility-reproductive-surgery/endometriosis/medical-treatment-for-endometriosis>

Frost, J. J., Duberstein-Lindberg, L., & Finer, L. B. (2012, June). *Young adults' contraceptive ... - guttmacher institute*. Young Adults' Contraceptive Knowledge, Norms and Attitudes: Associations with Risk Of Unintended Pregnancy. Retrieved April 25, 2022, from [https://www.guttmacher.org/sites/default/files/article\\_files/4410712.pdf](https://www.guttmacher.org/sites/default/files/article_files/4410712.pdf)

Gordon, L. P. (Ed.). (2022, January). *Birth control methods: How well do they work? (for teens) - nemours kidshealth*. KidsHealth. Retrieved April 25, 2022, from <https://kidshealth.org/en/teens/bc-chart.html>

Griffin, K. A. (n.d.). *Diversity, equity & inclusion*. Institutional Barriers, Strategies, and Benefits to Increasing the Representation of Women and Men of Color in the Professoriate. Retrieved April 25, 2022, from <https://diversity.ucdavis.edu/sites/g/files/dgvnsk731/files/inline-files/InstitutionalBarriersStrategies2020.pdf>

Heisler, K., & Van Eron, D. M. (2012). *University of New Hampshire Scholars' repository ... A descriptive study of undergraduate contraceptive attitudes among students at the University of New Hampshire*. Retrieved April 25,

2022, from

<https://scholars.unh.edu/cgi/viewcontent.cgi?article=1007&context=honors>

Institute for Women's Policy Research . (2020, January). *Improving success in*

*higher education through increased ...*Improving Success in Higher

Education through Increased Access to Reproductive Health Services.

Retrieved April 25, 2022, from [https://iwpr.org/wp-](https://iwpr.org/wp-content/uploads/2020/07/CERH-Higher-Ed-brief.pdf)

[content/uploads/2020/07/CERH-Higher-Ed-brief.pdf](https://iwpr.org/wp-content/uploads/2020/07/CERH-Higher-Ed-brief.pdf)

Kaiser Family Foundation . (2019, November 14). *Beyond the numbers: Access*

*to reproductive health care for low-income women in five communities.*

Beyond the Numbers: Access to Reproductive Health Care for Low-Income

Women in Five Communities. Retrieved April 25, 2022, from

[https://www.kff.org/womens-health-policy/report/beyond-the-numbers-](https://www.kff.org/womens-health-policy/report/beyond-the-numbers-access-to-reproductive-health-care-for-low-income-women-in-five-communities/)

[access-to-reproductive-health-care-for-low-income-women-in-five-](https://www.kff.org/womens-health-policy/report/beyond-the-numbers-access-to-reproductive-health-care-for-low-income-women-in-five-communities/)

[communities/](https://www.kff.org/womens-health-policy/report/beyond-the-numbers-access-to-reproductive-health-care-for-low-income-women-in-five-communities/)

Kernan, L. (2018, November 13). *5 reasons people use (and love) birth control.*

Bedsider. Retrieved April 25, 2022, from

[https://www.bedsider.org/features/1180-5-reasons-people-use-and-love-](https://www.bedsider.org/features/1180-5-reasons-people-use-and-love-birth-control)

[birth-control](https://www.bedsider.org/features/1180-5-reasons-people-use-and-love-birth-control)

Pandia Health . (2022, April 22). *Lowering risk of ovarian cysts using birth*

*control.* Lowering Risk of Ovarian Cysts Using Birth Control. Retrieved April

25, 2022, from <https://www.pandiahealth.com/resources/lowering-risk-of-ovarian-cysts-using-birth-control/>

Parenthood, P. (n.d.). *7 facts you need to know about birth control and costs*. 7 Facts You Need to Know About Birth Control and Costs. Retrieved April 25, 2022, from <https://www.plannedparenthoodaction.org/issues/birth-control/facts-birth-control-coverage>

Planned Parenthood Federation of America. (2015, June). *The birth control pill a history - planned parenthood*. The Birth Control Pill. Retrieved April 25, 2022, from [https://www.plannedparenthood.org/files/1514/3518/7100/Pill\\_History\\_Fact\\_Sheet.pdf](https://www.plannedparenthood.org/files/1514/3518/7100/Pill_History_Fact_Sheet.pdf)

Planned Parenthood of Northern New England. (n.d.). *Sexually transmitted infections (stds)*. Sexually Transmitted Infections (STDs). Retrieved April 25, 2022, from <https://www.plannedparenthood.org/planned-parenthood-northern-new-england/for-patients/health-services/sexually-transmitted-infections-stis>

San Bernardino County. (n.d.). *Sexually transmitted diseases*. San Bernardino County Community Indicators. Retrieved April 25, 2022, from <https://indicators.sbcounty.gov/wellness/sexually-transmitted-disease/>

- Srikanthan, A., & Reid, R. L. (2009, November). Religious and Cultural Influences on Contraception. Retrieved April 25, 2022, from [https://www.jogc.com/article/S1701-2163\(16\)32736-0/pdf](https://www.jogc.com/article/S1701-2163(16)32736-0/pdf)
- State Urgent Care. (2019, June 25). *Std vs STI: What's the difference?* STD vs STI: Common Types, Symptoms, and Treatment. Retrieved April 25, 2022, from <https://starkvilleurgentcareclinic.com/std-vs-sti-common-types-symptoms-and-treatment/>
- Travis, K. (2020, January 29). *Three stigmas about contraceptives that you should cancel in 2020.* THREE STIGMAS ABOUT CONTRACEPTIVES THAT YOU SHOULD CANCEL IN 2020. Retrieved April 25, 2022, from <https://teenhealthms.org/blog/three-stigmas-about-contraceptives-that-you-should-cancel-in-2020/>
- U.S. National Library of Medicine. (2022, April 15). *Birth control | contraception | contraceptives.* MedlinePlus. Retrieved April 25, 2022, from <https://medlineplus.gov/birthcontrol.html>
- University of Colorado . (2017, May 3). *Abstinence: Safe sex: University of colorado OB.* OBGYN-Colorado Womens Health. Retrieved April 25, 2022, from <https://obgyn.coloradowomenshealth.com/health-info/teens/abstinence-safe-sex>.

University of San Francisco . (n.d.). *Beyond the Pill research finds community college students need better birth control education*. Beyond the Pill .

Retrieved April 25, 2022, from <https://beyondthepill.ucsf.edu/news/beyond-pill-research-finds-community-college-students-need-better-birth-control-education>

Womens Health. (2019, February 14). *Birth control methods*. Birth control methods | Office on Women's Health. Retrieved April 25, 2022, from <https://www.womenshealth.gov/a-z-topics/birth-control-methods>

Woodsong, C., & Koo, H. P. (1999, September). *Two good reasons: Women's and men's perspectives on dual contraceptive use*. *Social science & medicine* (1982). Retrieved April 25, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3150867/>