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## Plan B Emergency Contraception: Sampled University Students' Knowledge, Attitudes, and Behaviors

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Plan B Emergency Contraception: Sampled University Students' Knowledge, Attitudes,  
and Behaviors

By  
Natalie Nicole Hazel

A Thesis Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Science  
In  
Community Health Education

Minnesota State University  
Mankato, Minnesota  
May 2014

April 4, 2014

Plan B Emergency Contraception: Sampled University Students' Knowledge, Attitudes,  
and Behaviors

Natalie N. Hazel

This thesis has been examined and approved by the following members of the thesis  
committee.

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Professor Dr. Judith Luebke, Advisor

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Professor Dr. Dawn Larsen

## **Abstract**

Plan B Emergency Contraception: Sampled University Students' Knowledge, Attitudes, and Behaviors

Natalie N. Hazel, M.S. Minnesota State University, Mankato, May 2014

The purpose of this research was to assess and evaluate sampled university students' knowledge, attitudes, perceptions, and behaviors related to the Plan B emergency contraceptive. To collect data, a 29 item survey was developed and administered to students in sampled classrooms at Minnesota State University, Mankato campus regarding their knowledge, attitudes, perceptions, and behaviors related to the Plan B emergency contraceptive; as well as demographic information. The findings of the study indicated there were some participants who have much knowledge about the Plan B emergency contraceptive. However, findings also showed that there were a number of participants who lacked knowledge about the Plan B emergency contraceptive pill. Despite lacking knowledge, many students had strong attitudes about when Plan B emergency contraception should be used. Recommendations for further study include conducting the study with students at other universities, and investigating if the use of Plan B has increased since it has become available over the counter for anyone at any age. Further, health education specialists can provide education on regular use of contraception and emergency contraception to students in high school so they have some knowledge before entering college.

## Acknowledgements

Dr. Judith Luebke, I cannot begin to thank you enough for all your hard work, patience, and support you gave me throughout the work of my thesis. You gave me so much encouragement and understanding throughout the last year I cannot put into words how appreciative I am of that. I am so lucky and blessed to have such an amazing advisor who kept me motivated through the ups and downs of this thesis. Thank you again for everything, Dr. Luebke.

I would like to thank my wonderful committee members Dr. Amy Hedman, and Dr. Dawn Larsen. I truly appreciate all the time, support, assistance, and encouragement throughout the course of my thesis work.

I would also like to thank Dr. Joseph Visker for all the time and help with my data analysis and helping me navigate through SPSS. Seminar class was very helpful and I really appreciate all your hard work you gave me.

To my amazing boyfriend, Andy Schuette, I can't tell you enough how much I appreciate all your patience and support throughout my work in graduate school and specifically on my thesis. Thank you so much for putting up with me over the last few years! I love you!

To my family and friends, both human and canine, thank you for always supporting me with the decisions I have made. Your love and encouragement means so much to me. Especially my mom, Jennifer, who has been the greatest role model anyone could ever have. Love you very much!

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## Chapter One: Introduction

### Introduction

According to the Centers for Disease Control and Prevention (CDC), Emergency contraception is a type of birth control that can be taken by females up to five days after unprotected sex in order to prevent pregnancy. Some emergency contraception options are only effective when taken 72 hours after unprotected sex. In any case, the sooner the emergency contraception is taken, the more effective it will be (CDC, 2013).

The World Health Organization states that there are two types of emergency contraceptives available: one or two pills (depending on the brand) taken orally and a copper-bearing intrauterine device (IUD) (WHO, 2012). Both the pill and the IUD keep a woman's ovaries from releasing the egg for a longer period of time than normal. If the sperm and the egg do not meet, there cannot be a pregnancy (Planned Parenthood, 2013a).

One of the emergency contraception pills, Plan B One Step (Plan B), is currently available over the counter at pharmacies or drugstores for females of any age (Planned Parenthood, 2013a). Prior to April 2013 this option was available only by prescription for females under the age of 17. Because there is no age restriction to purchasing the emergency contraception pill, there is a lot of controversy about the minimum age allowed to purchase Plan B without parental consent.

There are many reasons emergency contraceptive pills are utilized. One reason women would take an emergency contraceptive pill is because they have had unprotected sex and did not want to get pregnant. Because people are having sex at a younger age

today than in the past, and there is no restriction on the emergency contraceptive pill, it is predicted that Plan B will be relied upon too heavily (Roni, 2013, para. 14). Unrestricted access is the main concern of those who oppose the availability of the drug. Dr. Mary Davenport, President of the American Association of Pro-Life Obstetricians and Gynecologists, states: “When you introduce something like this, it changes people’s behaviors, and they have more risky sex. Teens will be counting on this morning-after pill to bail them out, and they’ll have more casual encounters” (Roni, 2013, para. 14).

While some people are very opposed to the emergency contraception pill being available to those of any age, others are very supportive of this change. Planned Parenthood President Cecile Richards states “This decision will eliminate some of the biggest barriers and hurdles that women face in getting emergency contraception when they need it, which means many more women will be able to prevent unintended pregnancy” (Szabo, 2013, para. 23).

### **Statement of the Problem**

In the United States, one out of three females has an abortion by age 45 (Planned Parenthood, 2013a). In 2012, over 4,300 of the more than 10,700 total abortions in Minnesota were performed on women aged 18-24 years old (Minnesota Department of Health, 2013). There are numerous reasons females get abortions which include: contraceptive method failure, inability to support a child at that time in their life, termination of an unwanted pregnancy, and prevention of a physical or medical condition that might endanger either the mother or the baby (Web MD, 2011). In addition to this list of reasons for choosing abortion, there is also a lack of knowledge in regards to emergency contraception. For university students particularly, there is lack of

understanding about emergency contraceptives and their purpose (Vahratian, Divya, Wolff, Xu, 2008). By utilizing an emergency contraceptive within the appropriate time frame, unintended pregnancies can be almost completely prevented. This is a significant problem because responsible use of emergency contraception to prevent an unintended pregnancy could avoid a lifetime of undesirable consequences for the mother and/or the baby.

### **Significance of the Problem**

The purpose of this study was to assess university students' knowledge and perceptions of the emergency contraceptive pill, Plan B. Increasing university students' knowledge of emergency contraceptives may reduce the number of abortions and unintended pregnancies that occur each year. Furthermore, reducing the number of abortions each year may also lead to a decrease in sexual violence, and improved women's health.

“Sexual, physical and psychological violence may contribute directly or indirectly to unwanted pregnancy. Women who suffered sexual abuse during their youth may more often have unplanned and/or unwanted pregnancies. There are often many reasons for this: abuse has been associated with loss of control, anxiety, fear and substance abuse — all of which can contribute to risky sexual behavior such as unprotected sex, impair a woman's ability to use contraceptives consistently, or make it difficult for her to negotiate contraceptive use with a partner. For women whose partners are opposed to contraception, fear of violence can stop a woman from using birth control methods” (Ipas, 2013, para. 2).

Younger females who give birth have lower education levels and lower socioeconomic status than mothers who graduated from high school (Minnesota Department of Health, 2013). The number of abortions performed in Minnesota in 2013

was 4,376 among college aged students aged 18-24 years, which is the highest number for Minnesota females (Minnesota Department of Health, 2013). Because of the high number of abortions that take place among university females, there needs to be better understanding about what exactly emergency contraceptives are, where they can be accessed, who can buy them, and how much they cost. With a better understanding of emergency contraception, increased options for family planning will be available which could result in a decrease in unintended pregnancies.

### **Research Questions**

1. What are sampled university students' knowledge of the Plan B emergency contraceptive pill?
2. What are sampled university students' attitudes and perceptions about the Plan B emergency contraceptive pill?
3. What are sampled university students' behaviors related to the Plan B emergency contraceptive pill?

### **Limitations**

1. Participants may not be aware of the Plan B emergency contraceptive.
2. Because the age restriction for purchasing Plan B emergency contraception was removed in April 2013, there is very limited research on the topic.

### **Delimitations**

1. This study was delimited to university students aged 18-24 years enrolled at Minnesota State University, Mankato in Spring Semester 2014.

2. Data was collected by printed survey that contains questions that focus on Plan B emergency contraception.

### **Assumptions**

1. It was assumed that all participants read and honestly answered the survey instrument questions.
2. It was assumed that all participants would ask any questions they may have had about the survey instrument.
3. It was assumed that all participants had some knowledge of the Plan B emergency contraceptive prior to taking the survey.

### **Definition of Terms**

The following terms were defined for this study.

**Emergency contraception.** Birth control that can be taken up to five days (120 hours) following unprotected sexual intercourse to prevent an unintended pregnancy (Planned Parenthood, 2013a).

**Plan B.** A pill that is taken within 72 hours of unprotected sex in order to prevent unintended pregnancy. The dose totals 1.5mg of levonorgestrel that is taken by the female. Levonorgestrel is a hormone used in birth control to prevent fertilization from occurring (World Health Organization, 2012).

## **Chapter Two: Literature Review**

### **Introduction**

The purpose of my research was to identify knowledge, attitudes, perceptions, and behaviors among selected students at Minnesota State University, Mankato (MSU, M) related to the Plan B emergency contraceptive pill. This chapter reviews related literature including an overview of emergency contraception, availability and accessibility; university students' knowledge of Plan B, their attitudes and perceptions about Plan B, their behavior related to contraceptive use, advantages and disadvantages of emergency contraceptives for women and their partners, and the application of this topic to the social cognitive theory.

### **Emergency Contraception Overview**

For over 30 years, emergency contraceptives have existed in the United States (Miller, 2011). There are two types of emergency contraceptives; pills and an intrauterine device. The pills are comprised of two different regimens: progestin only, and combination estrogen-progestin pills. The progestin only method has been shown to be the preferred method of emergency contraception because it is generally more effective and has fewer side effects (Miller, 2011).

For more than a decade, the common dosage of progestin only emergency contraceptive pills has been two doses of 0.75mg of levonorgestrel taken 12 hours apart (Miller, 2011). Recently, it has been discovered that one single dose of 1.5mg of levonorgestrel is just as effective as the two doses of 0.75mg with no increase in side effects (Miller, 2011). The sooner the emergency contraceptive pill is taken, the more effective it is at preventing an unintended pregnancy. All of the emergency contraceptive



pills that are available in the United States (Plan B, Plan B One Step, and Next Choice) are effective when taken within 72 hours of unprotected sex (Miller, 2011).

While emergency contraceptives differ in appearance, they all have the same purpose: to prevent pregnancy. However, pregnancy prevention only takes place when the emergency contraceptive is taken within the recommended timeframe to be effective. If the pills are taken at the right time, then fertilization of the ovum does not occur (Rafie, 2013). Plan B is the two pill regimen that has 0.75mg of levonorgestrel taken 12 hours apart. Next Choice emergency contraceptive pills are the generic version of Plan B and have the same regimen. Plan B One Step is a one pill regimen that has 1.5mg of levonorgestrel and should be taken within 72 hours of unprotected sex (Miller, 2011). The copper intrauterine device needs to be inserted by a physician within five days (120 hours) of unprotected sex in order to be effective in preventing pregnancy. The ions in the copper have a toxic effect on sperm and they make it difficult for fertilization to take place and can make the endometrium a poor environment for implantation (Dalby, 2012).

Emergency contraceptives are used for a variety of reasons. Two common reasons are lack of contraceptive use during intercourse and the woman's perception that her method of contraception had failed to protect her from an unintended pregnancy (Daniels, Jones & Abma, 2011). Almost one fourth (23%) of American women aged 20-24 who have had sex have used an emergency contraceptive of some sort (Daniels, et al., 2011).

### **Availability and Accessibility**

In 1999 the Food and Drug Administration (FDA) approved the Plan B two dose regimen to be used as a prescription drug. Nearly a decade later, in 2009, a judge ordered

that Plan B be available over the counter for women aged 17 years and older. In April of 2013, Plan B became available over the counter for women aged 15 and older. That same day in April, Judge Edward Korman ordered the FDA to lift any age restriction that the Plan B emergency contraceptive pill may have had within 30 days thereby removing any age restriction to purchase (Belluck, 2013). Currently, Plan B is available at most drug stores and pharmacies over the counter for anyone of any age.

### **Knowledge about Plan B**

Unintended pregnancies account for more than half of the total pregnancies in the United States, which suggests that it continues to be a concern for reproductive health (Vahratian, et al., 2008). Consequently, increased awareness of emergency contraceptives may provide options for preventing unintended pregnancies. Even though the rates of adolescent pregnancies have steadily decreased over the last decade, the United States still continues to report the highest rate of adolescent pregnancy among the industrialized nations (Sawyer, 2003). College women aged 18-24 have the highest rate of unintended pregnancies in the United States and they are also the age group with the highest rate of abortions (Sawyer, 2003). Anjel Vahratian states that approximately 60% of pregnancies among females aged 20-24 are unintended, while 79% of pregnancies among females aged 18-19 years old are unintended (Vahratian, et al., 2008).

Emergency contraceptives are a safe and potentially very effective way to prevent unintended pregnancies when taken within the proper timeframe, which varies by each method (Vahratian, et al., 2008). When emergency contraceptives are taken within 72 hours, they can reduce the risk of an unintended pregnancy by at least 75-89% (Vahratian, et al., 2008). Because these emergency contraceptives are so effective and

recently became accessible to all ages it would seem likely that they would be very widely used by females, however, it appears use is limited. In a study conducted in England on women 16-25 years old, it was determined that women perceived that their providers were judgmental when they asked for emergency contraception, especially after they had asked for it a second time (Corbett, Mitchell, Taylor & Kemppainen, 2006). Because the fear of being embarrassed and judged was greater than their fear of becoming pregnant, women did not utilize their available resources to prevent unintended pregnancies (Corbett et al., 2006).

In a study conducted in California by the Kaiser Family Foundation (2004), more than 1100 males and females aged 15-44 were surveyed. It was found that almost half of the females surveyed confused emergency contraceptive pills with the abortion pill (RU-486) (Corbett, et al., 2006). In addition, almost 40% were not even aware that emergency contraceptives were available in the United States. Corbett discovered that most of the participants said that they get most of their information about emergency contraception from television (Corbett, et al., 2006).

Researchers Corbett, Mitchell, Taylor, and Kemppainen (2006) hypothesized that having an advanced prescription of emergency contraceptives “on hand” would reduce the number of females who used birth control on a regular basis. They found that having an advanced prescription increased its use and did not affect the use of regular birth control. Results showed that the group that received the advanced prescription of emergency contraceptives was three times more likely to use it than the group that was just educated on it and did not receive an advanced prescription. There was no difference

between the two groups in regards to the frequency of unprotected sex or how often a condom was used in the four month trial period (Corbett, et al., 2006).

### **Attitudes about Plan B**

Since more than half of the pregnancies that take place in the United States are unintended, it appears that there are gaps in understanding sexual health. Even though college students may think they know all there is to know about safe sex and contraception, whether or not they make rational choices is greatly influenced by their attitude. According to a study done by the Kaiser Family Foundation in 2005 of 97 college students at the University of North Carolina, approximately 67% considered unintended pregnancy to be a major problem (Corbett, et al., 2006). In this study, 78% of respondents stated they were actively affiliated with their religion. However, 68% said they did not have a moral or religious objection to emergency contraception (Corbett, et al., 2006).

In recent research it has been shown that approximately 80% of college students in the United States have experienced sexual intercourse sometime in their lives (Miller, 2011). Of that 80%, more than half thought themselves or their partner were pregnant at one time or another (Miller, 2011). Literature reviewed suggests there is a clear need for emergency contraceptives in order to prevent unintended pregnancies, but there is a very low number of college students who have actually used them. While 95% of surveyed college students had heard of emergency contraceptives, only 12-28% have reported actually using them (Miller, 2011).

### **Perception.**

In a study published in the *British Medical Journal*, researchers found that college students did not seek emergency contraceptives for a variety of reasons. Some reasons included: lack of awareness, misunderstanding of the appropriate timeframe of when to take the emergency contraceptive, confusion with the “abortion pill” (RU-486), and embarrassment, guilt or shame when obtaining emergency contraceptives (Free, Lee & Ogden, 2002).

The World Health Organization published an article about the myths and misperceptions people have about emergency contraception. The authors stated that there was already substantial misinformation among females about contraceptive pills and about the risk of pregnancy. Media coverage in the United States, as well as Europe, has provided incorrect information that may frighten women about using emergency contraception. The British Broadcasting Corporation (BBC) published a story in Europe that stated, “Besides side effects, like nausea, heavy bleeding and cramps, regular use of emergency contraception may cause infertility and in some instances increase the risk of cancer” (Westley & Glasier, 2010, p. 243). Similarly, a mainstream newspaper in the United States declared that “Emergency contraceptives come with an increased risk for things like blood clots and hormone-related cancers, like many traditional forms of birth control” (Westley & Glasier, 2010, p. 243). When incorrect information like this gets published, it may keep women from using emergency contraceptives and unable to make informed decisions.

### **Behaviors Related to Contraceptive Use**

Emergency contraceptives are an effective and safe method for preventing unplanned pregnancies postcoitally (Planned Parenthood, 2013a). Females aged 20-24 account for 60% of unplanned pregnancies, while 18-19 year olds account for 79% of unplanned pregnancies (Vahratian, et al., 2008). Emergency contraceptives are most effective when taken right after unprotected sex or contraceptive failure has taken place. However, there is a timeframe of 120 hours (five days) after intercourse where some emergency contraceptives are most effective, specifically the Copper IUD. Plan B One Step pill is most effective when taken within 72 hours of unprotected sex (Vahratian, et al., 2008). The rates of all emergency contraceptive effectiveness range from 72- 87% (Ellerton, 2003).

Although emergency contraception is available to anyone of any age without parental consent, the use of regular contraception is still very high. Unplanned pregnancies still continue to be an issue among sexually active heterosexual women despite the increased use in regular contraceptive methods. In a study by Mosher and Jones from 1998-2008, approximately 89% of women use some sort of a birth control method as cited in Phares, Cui & Baldwin, 2012. Although a large number of women use some sort of birth control, they are not being taken on a regular basis which decreases the level of effectiveness (Phares, et al., 2012).

### **Advantages of Emergency Contraception**

With the large number of sexually active college students and the widespread availability and accessibility of emergency contraceptives, there are alternatives to

unintentional pregnancies. There are many programs and resources available for both men and women of any age so they can plan pregnancies more effectively (Dalby, 2012).

Emergency contraceptive pills can be obtained in advance before any sexual activity has taken place. This allows the female to take the pills with minimal wait time between unprotected sex and fertilization which will increase the probability that the emergency contraceptive pills will be effective. Although the female has a 72 hour window to take the pills, the sooner she takes it the more effective it will be (Dalby, 2012).

Since emergency contraceptive pills became available over the counter in 2013, they are accessible at many drug stores and pharmacies. At MSU, M in the Student Health Services office, Plan B is available to students for \$30 in the pharmacy. With more than 20,000 students, faculty, and staff at MSU, M, Plan B can be easily accessed by the University community (Minnesota State University, Mankato, 2013).

### **Disadvantages of Emergency Contraception**

While there are many advantages to emergency contraception, there are also some disadvantages as well. Emergency contraceptives will not work if a woman is already pregnant at the time she takes the pills or has the copper IUD inserted (Family Planning Council, 2013). Women are required to get the copper IUD inserted by a physician, because it is considered a medical procedure which might limit accessibility (Dalby, 2012). Further, there is a limited time frame that the female has to use the oral emergency contraceptive. If it is not taken within that time frame, the likelihood of effectiveness the emergency contraceptive decreases substantially. If a female is not comfortable seeking

help in obtaining emergency contraceptives, may delay taking the measure and consequently reduce effectiveness.

Emergency contraceptives cannot be used as an ongoing method of birth control as they may cause some adverse health effects in women. These include nausea, vomiting, and a possible change in the menstrual cycle if the estrogen-progestin pill is used (Family Planning Council, 2013). There is no protection against sexually transmitted infections when taking emergency contraceptives. Therefore, regular use of condoms is still required in order to prevent sexually transmitted infections through sexual intercourse (Family Planning Council, 2013).

Another potential disadvantage of emergency contraceptives may be the potential of limited accessibility in some retail outlets due to confusion of morning after pills (abortion pills) with emergency contraceptives. Some store managers may erroneously believe emergency contraceptives are abortifacients and due to religious beliefs, refuse to sell them (Mencimer, 2014).

### **Application of Social Cognitive Theory to College Students' Knowledge, Perceptions, and Attitudes of Plan B Emergency Contraception.**

The Social Learning Theory was developed in 1977 by Alfred Bandura. This theory was thought to have increased an interest in social learning and psychological modeling in the psychology field (Bell, 2007). As Bandura continued to research the origin of human thought and interaction, his findings were what developed the social cognitive theory. The term "social learning" had been adopted by many theories that did



not have the same constructs as Bandura had, so he opted to change the name of his theory to social cognitive theory.

The “social” component of the theory reflects the origins of human thoughts and interaction. The “cognitive” component of the theory reflects the influential contribution of cognitive processes to human motivation, affect and action. The social cognitive theory encompasses three major factors: person, behavior, and environment (Bell, 2007).

The social cognitive theory is based on how humans’ experiences influence their behavior. Individuals’ attitudes and values are the basis of how they represent themselves or their environment. Attitudes and values are certain classes of cognition according to Bandura who believes cognitions affect the behaviors of individuals (Bell, 2007).

In this study, this theory can, in many ways, be beneficial to help explain college students’ knowledge, perceptions, and attitudes of the Plan B emergency contraceptive. As many studies have demonstrated, teens and college students are greatly influenced by their peers and the media (Shelat, Hihoriya & Kumbar, 2012). For example, researchers Brindis & Davis (1998) stated that theories can contribute greatly to understanding teens and their behavior. “These theories maintain that teens change their behavior when they acquire knowledge, skills, beliefs, and confidence through interaction with others in their environment” (Brindis & Davis, 1998, p. 9).

## **Summary**

Literature regarding university students’ knowledge, attitudes, perceptions and behaviors related to the Plan B emergency contraceptive pill along with the advantages and disadvantages was reviewed and explained in this chapter. Literature reviewed

included research regarding an overview on what emergency contraceptives are and how they work, availability and accessibility. Also, in this chapter, the social cognitive theory was reviewed to help better understand and identify university students' attitudes and perception of the Plan B emergency contraceptive.

## **Chapter Three: Methodology**

### **Introduction**

The purpose of this research was to assess sampled university students' knowledge, attitudes, perceptions & behaviors related to the Plan B emergency contraceptive. This chapter describes this study's research design and rationale for choice, participant selection, data collection instrumentation, pilot test, data collection procedures, and data processing and analysis.

### **Research Questions**

1. What are sampled university students' knowledge of the Plan B emergency contraceptive pill?
2. What are sampled university students' attitudes and perceptions of the Plan B emergency contraceptive pill?
3. What are sampled university students' behaviors related to the Plan B emergency contraceptive pill?

### **Description of Research Design and Rationale for Choice**

This quantitative descriptive research study was designed to identify sampled university students' knowledge, attitudes, and perceptions of the Plan B emergency contraceptive. In this research, data were collected from students at Minnesota State University, Mankato by a written survey instrument in order to gain answers for the three research questions about the Plan B emergency contraceptive. The independent variables studied include: age, year of college, gender, marital status, race, and sexual orientation. Dependent variables included: knowledge, attitudes, perceptions and behaviors related to the Plan B emergency contraceptive.

## **Participant Selection**

Participants in this research were sampled male and female students aged 18-24 from Minnesota State University, Mankato. Participation was voluntary and was not related to their course grade or requirements. I surveyed nine general education classes offered for undergraduate students in the spring semester of 2014. I looked at E-Services Registration page on the MSU, M website to determine which courses would have a large enrollment size and which would give me the most diversity in my participant population. I obtained permission from the instructors of the selected courses in which I distributed my survey. Participation was voluntary and four hundred and thirteen subjects were surveyed.

## **Instrumentation**

I developed a survey instrument to collect data. The instrument covered a variety of university students' knowledge, attitude, and perceptions of the Plan B emergency contraceptive pill. The survey instrument included instructions for the participants and a cover letter which I read aloud for informed consent for participants who chose to participate. A five page printed survey was voluntarily completed by 413 undergraduate university students at MSU, M.

Some of the survey questions I used came from other published research. These included: Laura Miller (2011), and Anjel Vahratian (2008). Questions obtained from Laura Miller's (2011) survey instrument included:

1. How many types of emergency contraceptives are currently available in the US? (Question 6).

2. Emergency contraceptives reduce the risk of contracting a sexually transmitted infection. (Question 8).

Questions obtained from Anjel Vahratian's survey (2008) published in the

*Journal of Women's Health* include:

1. How did you first learn about emergency contraception? (Question 1).
2. Although emergency contraception works best immediately after unprotected sexual intercourse or contraceptive failure, what is the longest window of time that this option can effectively be used to prevent pregnancy? (Question 9).
3. In general, do you think students are aware that emergency contraception is an option for preventing a pregnancy after unprotected sexual intercourse or contraceptive failure? (Question 16.)
4. What do you think would be the most effective way to inform other students and the general public about emergency contraception? (Question 19).
5. People have a variety of views about the use of emergency contraception. In your opinion, do you approve of its use in the following situations: If a woman was raped. If a couple used a condom but it broke during sex. If a couple did not use any protection during sex. (Question 13).
6. If you or your partner wanted to use emergency contraception, do you know where you could get it? (Question 12).
7. Has your current healthcare provider spoken to you about emergency contraception during a routine office visit? (Question 10).

8. Because emergency contraception is optimally effective immediately following unprotected sexual intercourse or contraceptive failure, some healthcare providers recommend having a supply “on hand” to have available in case of need. Has your current healthcare provider offered this option to you? (Question 11).

The survey covered a variety of aspects of university students’ knowledge, perceptions, attitudes, and behaviors towards the Plan B emergency contraceptive. The survey included instructions and a cover letter for informed consent for participants who chose to participate. See Appendix A for a copy of the survey instrument, and Appendix B for a copy of the consent form.

### **Pilot Test**

I pilot tested my survey with a general education class at MSU, M of about 25 students prior to data collection. The survey completed by the 25 students was printed. The printed survey required about 10 minutes to be completed. I conducted a pilot test to make sure that my survey was appropriate for the intended sample of university students at MSU, M. Students had the opportunity to indicate whether each survey question was “Essential”, “Useful, but not essential”, or “Not necessary.” In addition, there was space for participants to leave comments about each question if they had any. One of the students suggested it seemed “weird” to ask true or false questions in a survey. Another student suggested including the answers to the questions that had a correct or incorrect answer at the end of the survey so they “could learn something.” The first question, “How did you first learn about emergency contraception” asked for only one response to be checked (in bold font). However, it appeared many participants checked more than

one response. The majority of the students who participated in the pilot study suggested no changes to the survey and indicated most questions were “Essential.” I did not make any changes to the survey based on this pilot test.

### **Data Collection**

Data collection for this study was conducted February 25, 2014- March 3, 2014 spring semester 2014. The survey was in printed form and selected professors of nine general education courses were sent emails requesting permission to collect data from students in their classes. Approval for data collection was obtained from the Minnesota State Institutional Review Board MSU, Mankato for the Conduct of Research involving Human Subjects (See Appendix C). I distributed the survey instrument in the nine sampled classes. It took about 10 minutes for subjects to complete the survey. For each of the nine classes, surveys were placed in a brown clasped envelope to maintain confidentiality. A participant consent form was distributed prior to the survey which specified who had access to the data collected to protect respondents’ privacy. Consent forms also contained information on the purpose of the study, potential risks to the participants and participants’ rights regarding participation in the research. Finally, the consent form informed participants where they could get answers if they had questions about the survey instrument.

Participants were instructed to keep the informed consent form. Once participants completed the survey they were instructed to place it in the brown envelope. Data collected will be stored in a locked filing cabinet at MSU, Mankato and destroyed three years after data collection.

**Data Analysis**

Data for this study were collected from February 25, 2014 to March 3, 2014. Once the data collection period was complete, the data were analyzed by using descriptive statistics (frequency counts, percentages, means and standard deviations) using Statistical Package for Social Sciences (SPSS) software program.

**Summary**

This chapter described the methodology used in this descriptive and quantitative research that assessed sampled university students' knowledge, attitudes, perceptions, and behaviors related to the Plan B emergency contraceptive.



## **Chapter 4: Findings and Discussion**

### **Introduction**

The purpose of this research was to assess and evaluate sampled university students' knowledge, perceptions, attitudes, and behaviors related to the Plan B emergency contraceptive pill. In order to collect data, a 29 item survey was developed and administered to students in sampled classrooms at Minnesota State University, Mankato campus regarding these variables and participants' demographic information. The findings from the quantitative analysis for each research question are presented in this chapter.

After IRB approval was attained, 413 printed surveys were distributed to nine sampled undergraduate general education courses at Minnesota State University, Mankato. Because of the nature of this research, descriptive statistical analysis was used to answer the presented research questions.

The total number of overall responses for the sampled university students at Minnesota State University, Mankato aged 18-24 was  $n= 413$ . Seventeen surveys were disregarded from analysis because respondents were over the age of 24 or there was less than 85% of the questions answered on the survey. By completing the survey instrument and keeping the consent form, participants provided consent. Responses from the 413 participants were coded and entered into a database using SPSS.

## **Participants' Demographics**

Demographic data collected from participants' included sex, age, year in school, race, and relationship status. The key findings from the demographic data collected revealed 47.1% (n=193) were males and 52.9% (n=217) were females. Regarding racial status, 75.6% (n=304) were White/ Caucasian, 7.7% (n=31) were Black/ African American, 1.7% (n=7) were Latino, 10% (n=40) were Asian American, 2.2% (n=9) were biracial, 1.0% (n=4) were Native American, and 1.7% (n=7) indicated they were of the "other" race category. The relationship status distribution of the sample was 1% (n=4) were married, 2% (n=8) were engaged, 52.1% (n=209) were single/ not in a relationship, 43.1% (n=173) were in a relationship and 1.7% (n=7) said they fell into the "other" relationship status category (See Table 4.1).

Table 4.1

*Demographic Data of Participants*

Characteristics	Frequency	%
<b>Sex</b>		
Male	193	46.7%
Female	217	52.5%
Total Responses	410	99.3%
Missing n (%)	3	00.7%
<b>Age</b>		
18	74	17.9%
19	143	34.6%
20	97	23.5%
21	46	11.1%
22	26	06.3%
23	8	01.9%
24	17	04.1%
Total	411	99.5%
Missing n (%)	2	00.5%
<b>Race</b>		
White	304	73.6%
Black	31	07.5%
Latino	7	01.7%
Asian	40	09.7%
Biracial	9	02.2%
Native American	4	01.0%
Other	7	01.7%
Total	402	97.3%
Missing	11	02.7%
<b>Year in School</b>		
Freshman	179	43.3%
Sophomore	140	33.9%
Junior	62	15.0%
Senior	22	05.3%
Total	403	97.6%
Missing	10	02.4%
<b>Relationship Status</b>		
Married	4	1.00%
Engaged	8	1.90%
Single	209	50.6%
In a Relationship	173	41.9%
Other	7	01.7%
Total	401	97.1%
Missing	12	02.9%

## Source of Knowledge

The first survey question asked participants “How did you first learn about emergency contraception?” The question asked participants to select only one of the options. However, many participants selected more than one option, so I adjusted recording format. I recorded each answer that the participant selected. Almost half (48.2%) of participants indicated that they had heard about Plan B emergency contraception from their friends or peers. Less than 10% of participants had learned about Plan B emergency contraception from their healthcare provider, while nearly 30% indicated they had learned about it from some form of media.

Table 4.2

*How did you first learn about emergency contraception?*

Item	Identified as a source n (%)	Not identified as a source n (%)
Have not heard of emergency contraception before this survey	21 (5.1%)	392 (94.9%)
Friends/ peers	199 (48.2%)	214 (51.8%)
Family	31 (7.5%)	381 (92.3%)
Healthcare provider	40 (9.7%)	373 (90.3%)
Media	123 (29.8%)	290 (70.2%)
School- based curriculum	99 (24%)	314 (76%)
Other	7 (1.7%)	406 (98.3%)

**Research Question 1: What are sampled university students' knowledge of the Plan B Emergency Contraceptive?**

In order to identify sampled university students' knowledge on the Plan B emergency contraceptive pill, participants were asked eight questions that had a specific correct answer. Three hundred fifty one participants, (85%), were aware that a prescription is not necessary in order to purchase an emergency contraceptive. Only 41.6% (n=172) of participants knew that parent or guardian permission is not needed in order to obtain Plan B emergency contraception.

When asked how many types of emergency contraceptives are available in the United States, only 27.1% (n=112) correctly answered that there are two types available. Three hundred and eighty one participants indicated that emergency contraceptives do not reduce the risk of contracting a sexually transmitted infection. Only about one-third, 36.1% (n=149) of participants were aware that 72 hours was the longest window of time that someone could take Plan B after having unprotected intercourse.

For the knowledge items, the highest correct number that a participant could receive was eight. Participants' mean score for correct responses was 5.06, with standard deviation of 1.36, and range of 7.00. Answering five out of eight questions correctly was the most common frequency. See Table 4.3.

Table 4.3

*Knowledge Assessment*

Item	Correct n (%)	Incorrect n (%)
Emergency contraceptives prevent pregnancy.	269 (65.1%)	144 (34.9%)
A prescription is necessary to get an emergency contraceptive.	351 (85%)	62 (15%)
Parent or guardian permission is needed in order to obtain Plan B for individuals under 18.	172 (41.6%)	241 (58%)
Emergency contraceptives are approved for use by the FDA.	343 (83.1%)	70 (16.9%)
How many types of emergency contraceptives are available in the US?	112 (27.1%)	301 (72.9%)
Emergency contraceptives cause an abortion.	315 (76.3%)	98 (23.7%)
Emergency contraceptives reduce the risk of contracting an STI.	381 (92.3%)	32 (7.7%)
Although emergency contraception works best immediately after unprotected sexual intercourse or contraceptive failure, what is the longest window of time that this option can effectively be used to prevent pregnancy?	149 (36.1%)	264 (63.9%)

**Research Question 2: What are sampled university students' attitudes about the Plan B emergency contraceptive pill?**

In order to identify sampled students' attitudes about the Plan B emergency contraceptive, participants were asked to indicate their agreement with a series of statements. Participants had five options to choose from when assessing statements regarding their attitude ranging from strongly disagree to strongly agree. When asked if participants approved the use of emergency contraception if a woman was raped, 298 participants (72.2%), strongly agreed. If a couple used a condom but it broke during sex, 74.8% (n=309) of participants indicated that they agreed or strongly agreed that it was acceptable to use emergency contraception in that case.

When asked if participants would feel embarrassed obtaining Plan B, 45.6% (n=188) of participants disagreed or strongly disagreed. Seventy eight percent (n=322) of participants indicated that they agreed or strongly agreed that in general, college students are aware that emergency contraception is available for individuals who either did not use protection or their contraceptive method failed. Participants were almost evenly distributed across the scale when asked whether or not having emergency contraceptive available over the counter allows people to have riskier sexual behavior because they have a backup contraceptive method easily available. Thirty one percent of participants agreed (n=128), 27.6% (n=114) of participants indicated they were neutral, and 24.7% (n=102) of participants disagreed with the statement. See Table 4.4.

Table 4.4

*Plan B Attitudes Assessment*

Item	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly Disagree n (%)	Missing n (%)
People have a variety of views about the use of emergency contraception. In your opinion, do you approve of its use in the following situations?						
a. If a woman was raped	298 (72.2%)	69 (16.7%)	24 (5.8%)	7 (1.7%)	12 (2.9%)	3 (.7%)
b. If a couple used a condom but it broke during sex	192 (46.5%)	117 (28.3%)	63 (15.3%)	22 (5.3%)	18 (4.4%)	1 (.2%)
c. If a couple did not use any protection during sex	129 (31.2%)	86 (20.8%)	99 (24%)	48 (11.6%)	50 (12.1%)	1 (.2%)
I would feel embarrassed obtaining emergency contraceptives.	25 (6.1%)	74 (17.9%)	125 (30.3%)	106 (25.7%)	82 (19.9%)	1 (.2%)
I have religious objections to emergency contraceptives.	23 (5.6%)	41 (9.9%)	92 (22.3%)	114 (27.6%)	142 (34.4%)	1 (.2%)



In general, college students are aware that emergency contraception is an option for preventing a pregnancy after unprotected sexual intercourse or contraceptive failure.	85 (20.6%)	237 (57.4%)	64 (15.5%)	20 (4.8%)	6 (1.5%)	1 (.2%)
The cost of emergency contraception plays a large role in whether or not an individual will obtain it or not in the event they would need it.	55 (13.3%)	164 (39.7%)	105 (25.4%)	67 (16.2%)	21 (5.1%)	1 (.2%)
Having emergency contraception available over the counter allows people to have riskier sex because there is a backup method easily available.	42 (10.2%)	128 (31.0%)	114 (27.6%)	102 (24.7%)	27 (6.5%)	n/a

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### Most Effective Way to Inform about Emergency Contraceptives

Participants were asked to identify what they thought would be the most effective way to inform other college students about emergency contraceptives. While answers were distributed across the response options, 125 participants (25.4%) indicated that a school based curriculum would be the most effective. The next most frequent responses were friends and peers 82 (19.9%), and healthcare provider 74 (17.9%).

Table 4.5

*What do you think would be the most effective way to inform other college aged students about emergency contraception?*

	Identified as a source n (%)
Friends/peers	82 (19.9%)
Family	19 (4.6%)
Healthcare provider	74 (17.9%)
Media	73 (17.7%)
School based curriculum	105 (25.4%)
Other	4 (1%)
Missing	56 (13.6%)

**Research Question 3: What are sampled university students' behaviors related to contraceptive use?**

Participants were asked to identify whether or not they were currently using a regular method of birth control, and if so, to identify the method. Participants were also asked to identify if they have used emergency contraception within the last year or if they knew someone who has. Two hundred thirty four participants (56.7%) identified that they or their partner were currently using a method of birth control. One hundred and sixty three participants (39.5%) identified that they were not using a regular method of birth control. Sixteen participants (3.9%) did not answer the question.

The most common type of birth control that participants selected as a regular method for them was the pill. One hundred forty seven participants (35.6%), identified the birth control pill as their regular method of birth control.

Table 4.6

*What is your current most regular method of birth control?*

Item	Frequency	%
Pill	147	35.6%
Condom	38	9.2%
Nuva Ring	8	1.9%
Depo Provera (shot)	13	3.1%
Other	19	4.6%
Total	225	54.5%
Missing	188	45.5%

Two hundred and fifteen participants (52.1%), identified that they knew someone who has used emergency contraception in the past 12 months. One hundred ninety six participants (47.5%) indicated they did not know someone who has taken emergency contraception within the past 12 months. Two participants did not answer the question.

A total of 88 participants (21.3%) indicated that they or their partners had used emergency contraception in the past 12 months. Three hundred and sixteen participants (76.5%) indicated that they, nor their partners, had not used emergency contraception. Nine participants did not answer the question. The 88 participants (21.3%) who indicated that they or their partner had used emergency contraception within the last 12 months were also asked to select the number of times that the emergency contraceptive had been used.

Table 4.7

*Frequency of emergency contraceptive use*

Item	Frequency	%
1	45	10.9%
2	27	6.5%
3	12	2.9%
4	3	.7%
More than 4	7	1.7%
Total	98	23.7%
Missing	315	76.3%

Participants were asked to identify whether or not their healthcare provider has spoken to them about emergency contraception during a routine office visit. Seventy one participants (17.2%) indicated their healthcare provider had spoken with them about emergency contraception, while 286 participants (69.2%) indicated their healthcare provider had not. Twenty six participants indicated they did not have a healthcare provider, and 30 participants were unsure if their healthcare provider spoke with them about emergency contraception.

Participants were informed in the survey that emergency contraception is most effective immediately following unprotected sex and as a result some healthcare providers recommend having a supply “on hand” available in case of need. Participants were asked if their current healthcare provider had offered them that option. Forty seven participants (11.4%) indicated their healthcare provider had offered that option to them, while 308 participants (74.6%) did not. Thirty participants (7.3%) indicated they were unsure, and 26 participants (6.3%) indicated they did not have a healthcare provider.

Participants were asked if they or their partners wanted to use emergency contraception if they knew where they could get it. Three hundred thirty six participants (81.4%), indicated that they did know where they could get it. Approximately 77 participants (18.6%), indicated they did not.

## Summary

Data analysis indicates patterns regarding sampled university students' knowledge, attitudes, perceptions and behaviors related the Plan B emergency contraceptive, which was the purpose of this research. Even though there were many participants who had strong attitudes regarding Plan B, there were many who did not know some knowledge based questions pertaining to Plan B. This research found that the majority of survey participants had heard of the Plan B emergency contraceptive pill prior to taking this survey. Three hundred twenty two participants (78%) had heard about it through their friends and the media, while 139 (33.7%) found out about Plan B from their healthcare provider or a school based presentation. Participants seemed to know that Plan B is available over the counter, but do not know that it can be purchased by anyone of any age. Data collected in this research showed that 40 (9.7%) of the participants' healthcare providers had spoken to them about emergency contraception, but 336 (81.4%) of participants knew where they could get it in the event they would need it. Overall, participants generally had positive attitudes towards the use of emergency contraceptives.

## **Chapter Five: Summary, Conclusions, and Recommendations**

### **Introduction**

The main purpose of this study was to assess sampled university students' knowledge, attitudes, perceptions, and behaviors related to the Plan B emergency contraception. The following research questions were investigated in this study:

1. What is sampled university students' knowledge of the Plan B emergency contraceptive pill?
2. What are sampled university students' attitudes and perceptions of the Plan B emergency contraceptive pill?
3. What are sampled university students' behaviors related to the Plan B emergency contraceptive pill?

### **Summary**

This study surveyed a sample of 413 participants who were enrolled at Minnesota State University, Mankato for spring semester 2014. In order for participants to qualify for this study, they had to be 18-24 years of age and enrolled at Minnesota State University, Mankato. Gender participants were 46.5% male (n=193) and 52.5% female (n=217). The level of college classification demonstrated that 43.3% (n=179) of students were first year, 33.9% (n=140) were sophomores, 15% (n=62) were juniors, and 5.3% (n=22) were seniors. The relationship status of the participants showed that 1% (n=4) were married, 1.9% (n=8) were engaged, 50.6% (n=209) were single, and 41.9% (n=173) were in a relationship. Race as reported by participants showed that 73.6% (n=304) were white, 7.5% (n=31) were black, 1.7% (n=7) were Latino, 9.7% (n=40) were Asian, 2.2%

(n=9) were Biracial, and 1% (n=4) were Native American. The data collection instrument that was used in this study was a printed survey and participation was voluntary. The print survey instrument included 29 questions for participants to complete. The questions that were included in this survey were structured to collect data about the demographic characteristics of the respondents, knowledge, attitudes, perceptions, and behaviors related to the Plan B emergency contraception.

### **Conclusions**

This research provided findings about sampled Minnesota State University, Mankato students' knowledge, attitudes, perceptions, and behaviors related to the Plan B emergency contraceptive. The demographic data reflected the population from which subjects were selected: undergraduate males and females aged 18-24. Findings from this study showed that the sampled students' had some knowledge of Plan B emergency contraceptive pill, but did not have the most reliable of sources. Media and friends/peers were the most commonly identified sources of information. As discussed in chapter two, the media has provided some false information about Plan B in the past, therefore making it an unreliable source of information. If someone relays the incorrect information they have received from the media and passed it on to one of their friends, this misinformation gets passed along and spread throughout groups of people. Misinformation can prevent people who could really benefit from Plan B, from using it because their source of information was incorrect.

In this study, it was found that sampled students at Minnesota State University, Mankato have some knowledge on the Plan B emergency contraception and participants have strong attitudes about certain circumstances in which emergency contraception



might be used. Findings of this study showed that more than half (56.7%, n=234) of participants are currently using a regular method of birth control, with the birth control pill being the most commonly used method (35.6%, n=147). When asked if many participants knew someone who has taken emergency contraception in the past twelve months, more than half (52.1%) indicated they knew someone. When asked if the participant or their partner had used emergency contraception in the last twelve months, 98 participants (23.7%) indicated they had used emergency contraception at least one time.

The first question on the survey instrument asked participants where they had first learned about emergency contraception. Twenty one participants (5.1%) indicated they had not heard of emergency contraception prior to this survey. The two most common sources identified were friends/peers and media. Friends and peers accounted for 48.2% (n=199) of participants' source of information. Media accounted for 29.8% (n=123) of participants' source of information. The two least common sources identified for learning about emergency contraception included family and healthcare provider. Thirty one participants (7.5%) identified that family was their source of information for learning about emergency contraception. Forty participants (9.7%) identified that their healthcare provider was their source of information. I was surprised to learn that more participants had learned about Plan B from their friends and the media. Although media can be a broad term meaning numerous sources including (radio, newspaper, television, magazines, and the internet), participants identified that as a more common source than their healthcare provider which is more than likely a more reliable source than the media.

There were eight questions in the survey that assessed the participants' knowledge of emergency contraception. There was a correct and an incorrect answer for each question. On average, participants answered 5 out of 8 questions correctly. No participants got all eight questions wrong, and seven participants (1.7%) correctly answered all eight questions correct. A total of 269 (65.1%) of participants correctly identified that emergency contraceptives do prevent pregnancy. When asked if a prescription is necessary to get an emergency contraceptive, 85% (n=351) of participants correctly answered that the question was "false" as it is not necessary. Approximately 41.6% (n=172) of participants indicated that parent or guardian permission is not needed to obtain Plan B emergency contraception. There were some participants who wrote in on the side of the question that they thought parent or guardian permission was needed for individuals under 17 years of age. That was true until April of 2013 when a judge ordered that all age restrictions be removed so that anyone can get Plan B.

When asked how many types of emergency contraceptives are available in the United States, 27.1% (n=112) of participants correctly indicated there are two types. There is the pill that is taken orally, and the intrauterine device that is inserted by a physician. This fact is not very widely known, therefore I was not too surprised that there was not a high percentage of correct answers. Three hundred fifteen participants (76.3%) correctly answered that emergency contraceptives do not cause an abortion. Approximately 92.3% (n=381) of participants correctly indicated that emergency contraceptives do not reduce the risk of contracting a sexually transmitted infection. Lastly, 36.1% (n=149) of participants were able to identify that the longest period of time an individual has to use Plan B after unprotected intercourse is 72 hours.

In general, findings of this study demonstrated that most participants' healthcare providers had not spoken to them about emergency contraception during a routine medical visit. Two hundred eighty six participants (69.2%) indicated their healthcare providers have not spoken to them about emergency contraception. When asked if participants' healthcare providers have spoken to them about having emergency contraception available "on hand" to reduce the time between unprotected sex and taking emergency contraception, 74.6% (n=308) of participants indicated their healthcare providers had not offered that option to them. Despite most participants not having learned about emergency contraception from their healthcare provider, 81.4% (n=336) of participants indicated they knew where they could get it in the event they or their partner would need it.

Findings from this research indicate that, in general, most participants were in favor of the use of emergency contraception. Three scenarios were presented where emergency contraception would be needed, and all three scenarios had majority of participants either strongly agree or agree that they would approve of its use. The scenarios included if a woman was raped, if a couple used a condom but it broke during intercourse, and if a couple did not use any protection at all.

Regarding attitudes of participants about Plan B, majority of participants indicated they would not feel embarrassed obtaining emergency contraception. This was different than the findings reported by Laura Miller (2011) for her thesis, as she found a majority of participants indicated they would feel embarrassed if they needed to get emergency contraception. Miller's study was conducted prior to the age restriction for purchase being repealed, so that may have had an impact on participants' attitudes.

Seventy eight percent of participants (n=322) agreed or strongly agreed that in general college students were aware that emergency contraception was an option for preventing pregnancy.

When asked if the cost of emergency contraception plays a role in whether or not individuals will obtain it if they needed it, answers were almost evenly distributed across the scale. Approximately 16.2% (n=67) disagreed cost played a large role, while 25.4% (n=105) indicated they were neutral. One hundred sixty four participants (39.7%) agreed that cost was a large factor. When asked if having emergency contraception available over the counter encouraged riskier sexual behaviors because there was a backup contraceptive method easily available, participants again answered across the scale. Approximately 24.7% (n=102) disagreed, 27.6% (n=114) were neutral, and 31% (n=128) agreed.

One of the survey questions asked participants what they believed is the most effective way to inform other college students and the general public about emergency contraception. Approximately 25.4% (n=105) of participants selected a school based curriculum as the best way to inform others. The second highest selected answer was friends/peers with 19.9% (n=82) of participants indicating that would be an effective way to inform others about emergency contraception. Healthcare provider had one more response than media for being the best way to inform college students or the general population about emergency contraception. Seventy four participants (17.9%) indicated healthcare providers as the best source to inform about emergency contraception, and seventy three (17.7%) indicated media would be the best source.

### **Limitations and Delimitations**

There were a few limiting factors in this research. The first limitation was that participants may have not heard of emergency contraception prior to this survey which would have impacted the responses to the survey, specifically the knowledge portion. The second limitation of the study was that there was limited research on the topic as the age restriction for purchasing Plan B had been removed in April 2013 so there was little current existing research available.

### **Recommendations for Health Education**

The fact that less than 10% (n=40) of participants in this study had heard of Plan B from their healthcare provider is alarming because that would be one of the most reliable sources information about Plan B. Almost 25% (n=99) of participants had learned about Plan B from a school based curriculum or presentation. That would be another reliable source of information, but again, not many participants indicated that was their most common source of information about Plan B. My recommendation is to include education on emergency contraceptives in high school health classes so that students can learn about it before entering college. I also recommend that healthcare providers educate their patients on emergency contraceptives when they visit for a routine appointment as early as 13 years old. It would be ideal to educate people about emergency contraceptives prior to their engagement in sexual activity.

Now that emergency contraceptives are available over the counter to anyone, if individuals are correctly educated on emergency contraceptives early in life, it could increase the appropriate use of emergency contraceptives, and consequently perhaps

decrease the number of abortions and unplanned pregnancies that occur. If individuals learn about emergency contraceptives and practicing safer sex earlier in life, maybe more people will be in favor of its use. Having regular discussions about emergency contraceptives and sexual behavior in health classes in high school and with a healthcare provider could create more positive attitudes about the use of emergency contraceptives.

Because friends and peers play a large role in the education of adolescents and college students, it is important that correct information is presented to schools so that individuals can feel comfortable enough to talk about it with each other. Being able to identify when media sources present incorrect health information is also an important skill to develop at a young age. Having enough confidence to speak up when incorrect information is presented about emergency contraceptives is a great skill to learn by students.

### **Recommendation for Further Study**

Based on the findings of this research, there is a need to collect data from students at other universities. Having a larger sample size may have enhanced the validity of the findings, specifically on the knowledge section of the survey. Because the age restriction of Plan B was just implemented after April of 2013, there was limited published research on how no age restriction has affected the use of Plan B. Doing a follow up study of the rates of Plan B usage have changed since it has become available over the counter for everyone would be interesting to see if more people are using it now that it is available over the counter. Expanding the geographical location of participants to the entire nation could provide a more comprehensive understanding of college students' knowledge, attitudes, perceptions, and behaviors related to the Plan B emergency contraceptive.

## **Interpretation of Findings**

Throughout the work of this thesis, I have found some aspects of this research to be surprising, and others to be exactly what I thought I would find. For example, survey question 14 asks participants if they would feel embarrassed obtaining emergency contraceptives. They have options from strongly disagree to strongly agree to select how they feel. I included this question in my survey because Laura Miller did in her thesis study as well and she found that majority of her participants would feel embarrassed in the event they would need to obtain Plan B. My findings were did not have a strong majority of participants answer one way or another. It was fairly evenly distributed.

Survey question 13 asked if participants approved of Plan B use in three different situations. The first one was if a woman was raped, and this situation had the most participants either “agree” or “strongly agree” with the use of Plan B in that situation. The number of participants who either “agreed” or “strongly agreed” with the situation if a couple used a condom, but it broke during sex decreased from the previous situation. Not surprisingly, the third and final situation, if a couple did not use any protection during sex, had even fewer participants agree or strongly agree with the use of Plan B. I thought that it was interesting that Plan B use is approved by participants if individuals have no control over a situation such as being raped, or attempted to have safe sex, but contraception failed. However, when no condom is used during sex than there are even fewer people in support of Plan B use.

Overall, the findings from this study were very interesting. Assessing university students’ knowledge, attitudes, perceptions, and behaviors allows researchers to gain a better understanding to how unintended pregnancies can be prevented in the future.

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Appendix A  
Survey Instrument

College Students' Knowledge, Attitudes and Perceptions of the Plan B Emergency Contraceptive Pill

The following questions assess your knowledge, perception, and attitudes regarding emergency contraceptives. Plan B emergency contraceptive is also referred to as the morning after pill. Please place an "X" next to, or fill in the blank, for the appropriate response for each question as it applies to you.

1. How did you first learn about emergency contraception? **(Please check one response only)**
  - Have not heard of emergency contraception before this survey
  - Friends/ peers
  - Family
  - Healthcare provider (for example, a doctor or nurse)
  - Media (television, magazines, Internet)
  - School-based curriculum or presentation
  - Other: (please specify) \_\_\_\_\_
  
2. Emergency contraceptives prevent pregnancy.
  - True
  - False
  
3. A prescription is necessary to get an emergency contraceptive.
  - True
  - False
  
4. Parent or guardian permission is needed in order to obtain Plan B for individuals under 18 years of age.
  - True
  - False
  
5. Emergency contraceptives are approved for use by the Food and Drug Administration (FDA).
  - True
  - False
  
6. How many types of emergency contraceptives are currently available in the US?
  - 1
  - 2
  - 3
  - 4
  - None of the above

7. Emergency contraceptives cause an abortion.  
 True  
 False
8. Emergency contraceptives reduce the risk of contracting a sexually transmitted infection.  
 True  
 False
9. Although emergency contraception works best immediately after unprotected sexual intercourse or contraceptive failure, what is the longest window of time that this option can effectively be used to prevent pregnancy? **(Please check one response only)**  
 1 day (24 hours)  
 2 days (48 hours)  
 3 days (72 hours)  
 5 days (120 hours)
10. Has your current healthcare provider spoken to you about emergency contraception during a routine office visit?  
 Yes  
 No  
 Unsure  
 I do not have a healthcare provider
11. Because emergency contraception is most effective immediately following unprotected sexual intercourse or contraceptive failure, some healthcare providers recommend having a supply "on hand" available in case of need. Has your current healthcare provider offered this option to you?  
 Yes  
 No  
 Unsure  
 I do not have a healthcare provider
12. If you or your partner wanted to use emergency contraception, do you know where you could get it?  
 Yes  
 No

13. People have a variety of views about the use of emergency contraception. In your opinion, do you approve of its use in the following situations?

a. If a woman was raped?

Strongly disagree  Disagree  Neutral  Agree  Strongly Agree

b. If a couple used a condom but it broke during sex?

Strongly disagree  Disagree  Neutral  Agree  Strongly Agree

c. If a couple did not use any protection during sex?

Strongly disagree  Disagree  Neutral  Agree  Strongly Agree

14. I would feel embarrassed obtaining emergency contraceptives.

Strongly disagree

Disagree

Neutral

Agree

Strongly Agree

15. I have religious objections to emergency contraceptives.

Strongly disagree

Disagree

Neutral

Agree

Strongly Agree

16. In general, college students are aware that emergency contraception is an option for preventing a pregnancy after unprotected sexual intercourse or contraceptive failure.

Strongly disagree

Disagree

Neutral

Agree

Strongly Agree

17. The cost of emergency contraception plays a large role in whether or not an individual will obtain it if needed.

Strongly disagree

Disagree

Neutral

Agree

Strongly Agree

18. Having emergency contraception available over the counter allows people to have riskier sex because there is a backup method easily available.
- Strongly disagree
  - Disagree
  - Neutral
  - Agree
  - Strongly Agree
19. What do you think would be the most effective way to inform other college aged students about emergency contraception? **(Please check one response only)**
- Friends/ peers
  - Family
  - Healthcare provider (for example, a doctor or nurse)
  - Media (television, magazines, Internet)
  - School-based curriculum or presentation
  - Other
20. I know someone who has used emergency contraceptives in the past 12 months.
- Yes
  - No
21. I (or my partner) have used an emergency contraceptive in the past 12 months.
- Yes
  - No → skip to question 23
22. If you answered yes to question 21, how many times have you (or your partner) used an emergency contraceptive?
- 1
  - 2
  - 3
  - 4
  - More than 4
23. I (or my partner) am currently using a method of birth control.
- Yes
  - No → skip to question 25
24. If you answered yes to question 23, what is you or your partners' current most regular method of birth control?
- Pill
  - Condom
  - Nuva Ring
  - Depo Provera (shot)
  - Other

25. What is your sex?

- Male
- Female

26. Age

\_\_\_\_\_ years

27. Race

- White/ Caucasian
- African American/ Black
- Latino/Hispanic
- Asian/Pacific Islander
- Biracial/ Multicultural
- Native American/ Alaskan Native/ American Indian
- Other

28. Year in school

- Freshman (First year)
- Sophomore
- Junior
- Senior
- Graduate

29. Relationship Status

- Married
- Engaged
- Single (Not in a relationship)
- In a relationship
- Other: \_\_\_\_\_

Thank you very much for taking the time to complete this survey! All responses will be kept confidential. Completion of this survey implies informed consent.



Appendix B  
Consent Form

Dear Student,

I am a graduate student at Minnesota State University, Mankato currently working on my thesis which is titled, "Selected College Students' Knowledge, Attitude, and Perceptions of the Plan B Emergency Contraceptive." This research will attempt to identify Minnesota State University, Mankato undergraduate students' knowledge, attitudes, and perceptions of the Plan B emergency contraceptive. This survey assesses your knowledge, attitudes, and perceptions of the Plan B emergency contraceptive. The information you provide will be kept confidential. You will not record your name anywhere on this survey, so information will be anonymous. It can be viewed only by authorized research staff members: Natalie Hazel (myself); and Dr. Judith Luebke, thesis advisor. The survey takes about 10 minutes to complete.

Please read the following consent form:

This research will be supervised by Dr. Judith Luebke. I understand that I can contact Dr. Luebke at 507-389-5938 or by email at [judith.luebke@mnsu.edu](mailto:judith.luebke@mnsu.edu) about any concerns I have about this project. I understand that I also may contact the Minnesota State University, Mankato Institutional Review Board Administrator, Dr. Barry Ries, at 507-389-2321, or by email at [barry.ries@mnsu.edu](mailto:barry.ries@mnsu.edu) with any questions about research with human participants at Minnesota State University, Mankato.

I understand that participation in this project is voluntary and I have the right to stop at any time. By completing this questionnaire, I agree to participate in this study and state that I am at least 18 years of age.

I understand that none of my answers will be released and no names will be recorded. I understand that participating in this research has minimal risks, that is, the probability of harm or discomfort anticipated in the research are not greater than those encountered in daily life. I understand that participating in this study will help the researchers better understand selected college students' knowledge, attitudes, and perceptions of the Plan B emergency contraceptive. My decision whether or not to participate in this research will not affect my relationship to Minnesota State University, Mankato, nor will a refusal to participate involve a penalty or loss of benefits. I understand I may discontinue participation any time before data collection is complete without penalty or loss of benefits.

Please keep this copy of this consent form for your records.

Sincerely,

Natalie Hazel [natalie.hazel@mnsu.edu](mailto:natalie.hazel@mnsu.edu)

IRBNet id number: 572051

Appendix C  
Institutional Review Board Approval



February 12, 2014

Dear Judith Lubke:

Re: IRB Proposal entitled "[572051-2] Selected College Students' Knowledge, Attitudes and Perceptions of the Plan B Emergency Contraceptive Pill"  
 Review Level: Level (j)

Your IRB Proposal has been approved as of February 12, 2014. On behalf of the Minnesota State University, Mankato IRB, I wish you success with your study. Remember that you must seek approval for any changes in your study, its design, funding source, consent process, or any part of the study that may affect participants in the study. Should any of the participants in your study suffer a research-related injury or other harmful outcome, you are required to report them to the IRB as soon as possible.

When you complete your data collection or should you discontinue your study, you must notify the IRB. Please include your log number with any correspondence with the IRB.

This approval is considered final when the full IRB approves the monthly decisions and active log. The IRB reserves the right to review each study as part of its continuing review process. Continuing reviews are usually scheduled. However, under some conditions the IRB may choose not to announce a continuing review. If you have any questions, feel free to contact me at [irh@mnsu.edu](mailto:irh@mnsu.edu) or 507-389-5102.

The Principal Investigator (PI) is responsible for maintaining signed consent forms in a secure location at MSU for 3 years. If the PI leaves MSU before the end of the 3-year timeline, he/she is responsible for following "Consent Form Maintenance" procedures posted online.

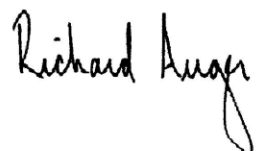
Cordially,

A handwritten signature in black ink, appearing to read "Mary Hadley".

Mary Hadley, Ph.D.  
 IRB Coordinator

A handwritten signature in black ink, appearing to read "Sarah Sifers".

Sarah Sifers, Ph.D.  
 IRB Co-Chair

A handwritten signature in black ink that reads "Richard Auger". The signature is written in a cursive style with a large, looping initial 'R' and a long, sweeping tail on the 'g'.

Richard Auger, Ph.D.  
IRB Co-Chair

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Minnesota State University, Mankato IRB's records.