

12-1-1998

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Dollie J. Cadden

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THE USE OF EMERGENCY CONTRACEPTION:  
COLLEGE-AGE STUDENTS' KNOWLEDGE  
AND ATTITUDES

by

DOLLIE J. CADDEN

A Thesis  
Submitted in Partial Fulfillment of the Requirements  
for the Degree of Master of Science in Nursing  
in the Division of Nursing  
Mississippi University for Women

COLUMBUS, MISSISSIPPI

December 1998

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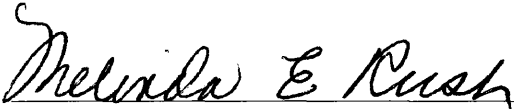
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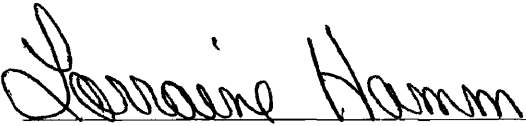
The Use of Emergency Contraception:  
College-Age Students' Knowledge  
and Attitudes

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## Abstract

The emergency contraceptive pill is a method of postcoital contraception. The method, often called the morning after pill, is relatively unknown, both among potential users and some health care providers. Morning after pills are available at the health centers of many universities. Recently, proposals have appeared in the academic and popular press to expand the availability of emergency contraceptive pills. On college campuses, where many students risk becoming pregnant but where few pregnancies are wanted, there may be a considerable unmet need for expanded availability of emergency contraceptive pills. At this time, few studies have documented the prevailing knowledge, attitudes, or need for the emergency contraceptive pills in a college population. Results from this type study would be useful in refining efforts to educate students at risk of unwanted pregnancy about the morning after pill and assessing plans to dispense these pills more widely. The purpose of this study was to measure the knowledge level and attitudes of college-age

students regarding the use of emergency contraception. King's Theory of Goal Attainment was the theoretical framework guiding this study. A descriptive design was utilized to answer the research questions: What is the knowledge level of college-age students regarding the use of emergency contraception and what are the attitudes of college-age students regarding the use of emergency contraception? Knowledge and attitudes were measured using the Harper/Ellertson Questionnaire. The student union of a southern state college was the setting for data collection. This study suggests that the knowledge level of college-age students increases with the amount of time spent on campus. In addition, there appears to be a strong correlation between students' knowledge of the dosage and effectiveness of emergency contraceptive pills. The attitude of the students toward emergency contraceptive pills appeared to be correlated to their personal experiences. Both the knowledge and attitudes of these students may be influenced by their regional environment. The advanced practice nurse could be instrumental in developing educational programs to meet the needs of college-age students and health care providers. Further research could be conducted to pursue and investigate attitudes of clinic employees and health care providers.

## Acknowledgments

This research and the past year's success would not have been possible without the help of a few very special people. Words cannot convey the appreciation I have for all of those who supported each and every effort.

I am so very thankful for the assistance and support of my research committee. I would especially like to thank my committee chair, Melinda Rush, who has stood by me through some of the roughest times of my life.

I would also like to thank the other two members of my committee, Dr. Mary Pat Curtis and Lorraine Hamm. Without them, this process would not be complete. A special thanks to Melinda and Mary Pat for the extra time and effort they gave me over the last few months so that I could reach my goals.

Finally, I would like to thank my kitty, Onyx, my loving parents, and God for carrying me through the worst of times when I thought I could go no further.

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## Chapter I

### The Research Problem

Emergency contraception has been defined as a method of preventing pregnancy after sexual intercourse by interrupting the processes of fertilization and by not allowing a potentially fertilized egg to implant in the uterus (Hatcher et al., 1994). The most common method of emergency contraception consists of four combined estrogen-progestin oral contraceptives taken in pairs 12 hours apart and within 72 hours of unprotected intercourse (Trussell, Stewart, Guest, & Hatcher, 1992). Emergency contraception has been an option available to reduce pregnancy risk in circumstances such as rape or mechanical failure of a contraceptive device. It also has been an alternative when a couple realizes they do not want to risk pregnancy only after the risk has already been taken (Hatcher et al., 1994).

Emergency contraceptives, particularly emergency contraceptive pills, have been used most commonly by rape victims and students on college campuses (Grossman &

Grossman, 1994). Results from clinical trials show that the overwhelming majority of unintended pregnancies result from inconsistent or incorrect use of birth control methods (Trussell et al., 1992). Many college-age students have been noncompliant with birth control methods leading to increased pregnancy rates, increased incidences of unwed motherhood, and increased abortion rates (Harper & Ellertson, 1995). Emergency contraception has been introduced as an alternative to resolve these issues. A university population has presented itself as an optimal group among whom to investigate knowledge and attitudes toward contraception because many university health centers have included emergency contraceptive pills in their reproductive health services (Harper & Ellertson, 1995). This research study investigated the knowledge levels and attitudes of college-age students regarding the use of emergency contraception.

#### Establishment of the Problem

Each year use of emergency contraception in the United States could prevent over 1 million abortions and 2 million unintended pregnancies that end in childbirth (Trussell & Stewart, 1992). However, emergency

contraception has not been universally available and the use of emergency contraception has been limited largely by the lack of knowledge of this method of contraception (Glasier, 1997). The availability of emergency contraception could have a tremendous impact on the future of family planning technology. On college campuses, where many students risk becoming pregnant, but where few pregnancies are wanted, there may be considerable unmet need for expanded availability of emergency contraceptive pills (Harper & Ellertson, 1995). Limited studies have documented prevailing knowledge, attitudes, or need for the emergency contraceptive pills in a college population (Harper & Ellertson, 1995).

Emergency contraception has been a method that has been underutilized because of several influencing factors (Morgan & Deneris, 1997). First, until recently, oral contraceptives had not been approved by the Food and Drug Administration for emergency contraception (Morgan & Deneris, 1997). Secondly, the level of knowledge and attitudes of potential candidates for use of emergency contraception has been dependent on the basic understanding of what emergency contraception does (Harper & Ellertson, 1995).

This researcher believed that college-age students have little knowledge about emergency contraception because health care providers are not offering them this option. In fact, researchers have shown that there is limited access and availability to emergency contraception due to the knowledge and attitudes of the health care professionals in positions such as college health center, to prescribe this method (Sawyer, Fong, Stankus, & McKeller, 1996b). Gold, Schein, and Coupey (1997) determined that support of this method by potential users was apparent under certain circumstances, but precise knowledge regarding this practice was lacking. For those individuals who were knowledgeable regarding this method and were willing to use it in certain circumstances, adherence to the prescribed regimen was excellent (Sawyer, Fong, Stankus, Anderson-Sawyer, & Long, 1996a).

Many college-age students find themselves in situations which can lead to the need for emergency contraception. Whether or not these individuals use this method is strongly related to their knowledge about emergency contraception, their attitudes toward using this method, and the availability of this method (Harper &

Ellertson, 1995). To increase knowledge, improve attitudes, and increase availability of emergency contraception, students need to know how emergency contraceptive pills work, time limits for their use, possible side effects, the effectiveness, and where to get them (Harper & Ellertson, 1995).

### Significance to Nursing

In a study by Harper and Ellertson (1995), students pleaded for more information on sexuality and fertility control and preferred to receive this information from peer educators. University health centers are in a position to provide a wealth of information collected over many years on the subject of emergency contraception (Harper & Ellertson, 1995).

The goal of health care providers is to provide accurate information about family planning and contraceptive technology. This knowledge may help decrease the number of unintended pregnancies and empower the individual to seek routine contraceptive care (Davies, 1997). Patient education materials should be developed and distributed widely to familiarize people and to educate them about emergency contraception (Grossman & Grossman,

1994). Easy access to emergency contraception could dramatically reduce the number of unwanted pregnancies, thus reducing the number of induced abortions (Trussell et al., 1992). Emergency contraception is not a replacement for but a complement to regular contraception for women who are sexually active. By educating health care providers through academics, this information can be disseminated to the public searching answers.

Nurse practitioners have the responsibility to be well informed about different aspects of family planning and contraceptive technology and the opportunity to convey this information to the patients in a clinical practice setting (Grossman & Grossman, 1994). Nurse practitioners in numerous practice settings can initiate and promote emergency contraceptive services. The initial contact with the client can serve as a bridge to routine family planning and gynecological care and is the perfect time to perform a physical exam and provide any additional information requested (Davies, 1997). The role of the practicing provider is to ensure that each person is adequately educated about family planning and contraceptive technology so that decisions that may affect the rest of their lives can be made (Dorman, 1996).



## Theoretical Framework

The theoretical basis for this study was King's Theory of Goal Attainment. The major concepts of King's theory are interaction, perception, communication, transaction, role, stress, growth and development, and time and space (Fawcett, 1995). Specifically, the concepts of interaction, perception, communication, and transaction were tested in this study. King (1981) stated that her theory was "based on an overall assumption that the focus of nursing is human beings interacting with their environment leading to a state of health for individuals, which is an ability to function in social roles" (p. 143). Using systems theory, King viewed the nurse and patient as an open system, thereby allowing for feedback.

King (1971) determined that the nursing process could be seen as "a series of acts which connote action, reaction, and interaction" (p. 91), with transaction resulting when a reciprocal relationship is established by the nurse and patient. In her schematic representation of the process of human interactions, King noted that interactions between people, particularly between the nurse and the patient, are of primary concern (1971). The

nurse and patient are aware of each other, judgments are made, actions occur leading to reactions, and last, transaction occurs if there have been no barriers to the process, particularly in the interaction phase.

King (1981) held that "the major concepts in human interactions are perception, communication, and transaction" (p. 61). King focused on perception as a major element in the interaction/transaction process and defined perception as a "process of organizing, interpreting, and transforming information from sense data and memory" (1981, p. 24). King stated that "perception is a concept essential to nurses' understanding the person as an open system" (1981, p. 24).

Perception, an important element in the communicative process, also impacts an individual's attitude. King wrote,

Perception is unique to each human being. Each individual acts as a result of his/her perception of a person, a situation, an object or an event. Since perception cannot be measured directly, we seek information by asking a person what he is thinking and feeling, and by observing his behavior. Sensory input yields output in terms of behavior. (King, 1981, p. 27)

King stated that nonverbal cues convey much more accurate information than verbalizations. Nonverbal

behaviors are reflections of attitudes and values which are based upon one's perceptions.

Based on their perceptions, persons interact through communication which leads to transactions. Transactions are described as "purposeful interactions that lead to goal attainment" (King, 1981, p. 81). King (1981) defined transaction as "observable behavior of human beings interacting with their environment" (p. 147).

The goal of nursing, according to King (1981), is to help individuals and groups to attain, maintain, and restore health. This researcher chose King's Theory of Goal Attainment because choosing emergency contraception is allowing the individuals to make their own choices regarding their health care. Secondly, emergency contraception is a method of helping the individuals return to a previous state of health prior to unprotected intercourse. When a student presents to a college student health center after having had unprotected intercourse the night before, the nurse practitioner must perceive the individual's need, communicate available options, help the student to set goals for this particular situation, and provide information to assist the student in attaining these goals.

### Assumptions

For the purpose of this study, the following assumptions were made:

1. College-age students will answer the questions truthfully.
2. College-age students use contraception.
3. Use of emergency contraception will decrease unintended pregnancies and unwanted abortions.
4. College-age students make decisions that influence their lives.

### Purpose of the Study

The purpose of this research study was to examine, measure, and analyze the knowledge level and attitudes of college-age students regarding the use of emergency contraception on a southern state college campus.

### Statement of the Problem

Emergency contraception is useful after unprotected intercourse or when other methods of contraception fail. Many college-age students find themselves in situations which can lead to the need for emergency contraception. Whether or not these individuals use this method is

strongly related to their knowledge about emergency contraception, their attitudes towards using this method, and the availability of this method.

The lack of knowledge about emergency contraception is a major barrier to its use. Knowledge levels can be influenced by the availability and accessibility of information for students regarding this method. Education may be the key. To increase knowledge regarding emergency contraception, students need to know where emergency contraceptive pills are available, how they work, time limits for their use, possible side effects, and the effectiveness when used as prescribed.

Attitudes can be measured on specific issues related to emergency contraception. Approval of this method, ethical and health issues related to this method, and access for this method will be included in the measurement. For this research, a person's attitudes included behaviors toward the acceptance or nonacceptance of emergency contraception. Attitudes toward emergency contraception are directly related to the present level of knowledge.

### Research Questions

The research questions investigated in this study were as follows:

1. What is the knowledge level of college-age students regarding the use of emergency contraception?
2. What are the attitudes of college-age students regarding the use of emergency contraception?

### Definition of Terms

For the purpose of this study, the following terms were defined:

Knowledge levels: Theoretical: familiarity with basic information that is learned through study or experience pertaining to a specific topic of interest. Operational: knowledge levels of college students about emergency contraception as determined by the Harper/Ellertson Questionnaire.

College-age students: Theoretical: individuals who are eligible for admission to an institution of higher learning. Operational: individuals who have been admitted to an institution of higher learning and are between the ages of 18 and 25 years and specifically who attend a southern state college and use the student union.

Emergency contraception: Theoretical: a method of preventing pregnancy after sexual intercourse by interrupting the processes of fertilization using higher than usual dose of birth control pills (Hatcher et al., 1995). Operational: a method of preventing pregnancy; usually consisting of 2 to 4 pills taken twice 12 hours apart within 72 hours of unprotected intercourse

Attitudes: Theoretical: behavior toward a person, group, thing, or situation representative of conscious or unconscious mental views developed through cumulative experience. Operational: mental views of southern state college students toward emergency contraception as determined by the Harper/Ellertson Questionnaire.

## Chapter II

### Review of the Literature

The review of literature focused on attitudes of health care providers regarding prescriptive practices of emergency contraceptives as well as knowledge, attitudes, and adherence practices of college-age students. Other areas of interest addressed were those of availability and accessibility to the emergency contraceptive pills.

Gold, Schein, and Coupey (1997) sought to explore attitudes and counseling and prescribing practices related to emergency contraceptive pills of physicians with expertise in adolescent health. The research question was what is the likelihood that physicians will prescribe and counsel emergency contraception to their patients?

A structured interview was developed and used in this national survey. Research participants were selected from physicians belonging to three major national organizations. The sampling selection was systematic, every third name from the North American Society for Pediatric and Adolescent Gynecology list, every eighth



name from the Society for Adolescent Medicine list, and every ninth name from the American Academy of Pediatrics section on Adolescent Health list. Of the final sample of adolescent health experts (N = 167, 55%), 63% of the respondents were women. The researchers designed a 71-item interview schedule, then sent letters of the upcoming research to physicians to advise them of a future phone survey regarding a topic related to adolescent reproductive health (Gold et al., 1997).

The results were analyzed using descriptive and chi-square statistics for categorical comparisons. First, Gold et al. (1997) found that most of the physicians (83%) believed that prescribing emergency contraceptive pills would not alter the practice of adolescents in using other contraceptive methods. Secondly, 52% of the physicians would not restrict dispensing emergency contraceptive pills as opposed to 29% of the physicians who felt that repeated use of emergency contraceptive pills could cause health risks. For a patient who stated they would continue the pregnancy after using emergency contraceptive pills unsuccessfully, only 35% of the physicians would proceed with prescribing the emergency contraceptive pills.

All respondents in the survey agreed that emergency contraceptive pills should not be available over the counter. Of the physicians who offered emergency contraception (80%), 64% required a pregnancy test, 46% required a history of menses, 25% required a written informed consent, and 32% prescribed emergency contraceptive pills over the telephone. Of the 112 physicians who were active in dispensing emergency contraceptive pills, 28% counseled patients during regular health care visits, 41% counseled patients during family planning consultations, and 16% counseled adolescents who were not yet sexually active (Gold et al., 1997).

Gold et al. (1997) determined that the likelihood of physicians prescribing emergency contraceptive pills was directly associated with their educational background. Those trained in obstetrics and gynecology were more likely to prescribe emergency contraceptive pills than those trained in pediatrics. Two other factors influencing the likelihood of physicians prescribing emergency contraceptive pills were graduation from medical school after 1970 and an academic practice setting as opposed to other health care settings. The reasons stated by the adolescent health experts for not prescribing emergency

contraceptive pills were lack of request, potential for misinformation from patients on timing of unprotected intercourse, and lack of experience with this method (Gold et al., 1997).

Gold et al. (1997) concluded that the majority of adolescent health physicians prescribe emergency contraceptive pills but limit this practice to a few times a year. The researchers deduced that this practice behavior may be related to the physicians' attitudes about emergency contraceptive pills effects as a method of contraception. The authors further suggested that the reason for limited prescribing of emergency contraceptive pills is lack of appropriate training on the physician's part (Gold et al., 1997).

Adolescent health experts need to be aware of the effects of emergency contraception on young women (Gold et al., 1997). Proper training is highly recommended to ensure that the patients are counseled before the need arises and that prescription of the emergency contraceptive pills is given as the situation warrants (Gold et al., 1997). The researchers demonstrated that the knowledge and attitudes regarding emergency contraception influence decisions that affect many lives, those of the

health care provider and those individuals who go to their health care providers for trusted medical advice.

In this review of literature, many issues were discussed regarding the preferences of health care providers and physicians in prescribing emergency contraceptive pills. These issues have an impressive impact on the availability and accessibility of the emergency contraceptive pills to college-age students as addressed in the current research.

In another study by Sawyer, Fong, Stankus, Anderson-Sawyer, and Long (1996a), the researchers sought to examine the adherence by individuals to the emergency contraceptive regimen by means of a telephone follow-up survey. The target sample (N = 115) consisted of women who presented to the health center of a large university seeking assistance after experiencing unprotected intercourse. Subjects were cared for by nurse practitioners who informed them of the current research and the follow-up phone call that would be made approximately 3 weeks after the prescription for emergency contraceptive pills. A questionnaire was developed for use during the follow-up phone call which included questions

for pre-emergency contraceptive pill use and post-emergency conceptive pill use.

From the information collected from the questionnaire at the time of the health center visit, the mean number of days between the last period and the time of unprotected intercourse was calculated to be 15.4 (SD = 7.3). Twenty-seven (27.8%) requested emergency contraceptive pills within 12 hours of unprotected intercourse, 51 (52.6%) from 13 to 24 hours after unprotected intercourse, 18 (18.6%) from 25 to 48 after unprotected intercourse, and 1 (1.0%) from 49 to 72 hours after unprotected intercourse (Sawyer et al., 1996a).

Sawyer et al. (1996a) determined from the follow-up phone calls that adherence to the emergency contraceptive pill regimen was excellent. The adherence to the prescribed emergency contraceptive pill regimen by these college-age women implied positive attitudes regarding the use of emergency contraceptive pills. From the original sample (N = 97), the pregnancy counselor was successful in reaching 65 (67%) of the subjects (Sawyer et al., 1996a). The researchers showed that the majority of women receiving emergency contraceptive pills experienced minimal side effects. Sawyer et al. (1996a) concluded from

the follow-up phone calls that the problems associated with emergency contraceptive pills are probably too minimal to justify making follow-up phone calls on all of the patients and the cost of funding this type of survey is not feasible. In the current study, areas of knowledge were assessed for understanding of the emergency contraceptive regimen and how the emergency contraceptive pills work.

The knowledge and attitudes of students regarding emergency contraceptive pills were examined by Harper and Ellertson (1995). Secondly, the researchers wanted to determine if the emergency contraceptive pill was considered a useful and appropriate means of fertility control.

The target sample (N = 100) consisted of undergraduate students, all women, graduate students, men and women, and six members of the health center staff. Harper and Ellertson (1995) chose a focus-group methodology to obtain data. A standard topic guide consisting of open-ended questions was used to help organize data collection covering three main topics: knowledge, attitudes, and availability of emergency contraceptive pills.

A total of 11 focus-group discussions were held: 8 with undergraduate students, 2 with graduate students, and 1 with staff from the university's health center. Moderators of the discussions included trained peer counselors who led the discussions for the undergraduates and the researchers who led the participant group consisting of the graduates and staff (Harper & Ellertson, 1995).

Each of the focus-group discussions was taped and transcribed for analysis. Data were organized into categories and subcategories, then compared by moderator groups. Eight themes emerged including norms governing sexuality, sexual responsibility, alcohol and sexuality, gender, responsibility for reproductive health, provider issues, expanded availability, and information scarcity (Harper & Ellertson, 1995). Of these issues, the theme of alcohol and sexuality was highlighted frequently in the focus groups. The students explained that alcohol frequently leads to unprotected intercourse. Students agreed that when faced with the fact that a loss of control and unprotected intercourse have occurred, knowledge about the regimen and access to emergency

contraceptive pills are important to avoid abortions and unwanted births (Harper & Ellertson, 1995).

Regarding attitudes, one student was quoted as saying,

I think ECPs belittle the problems of STDs and other things that go along with sexual intercourse. The first thing people think about is pregnancy. And I think a lot of people . . . think of STDs later, when they start having symptoms. (p. 150)

On the issue of availability, one student stated, "if it were available over the counter, and there were a lot of information on it, it could really benefit a lot of women" (p. 153). In reference to fertility control, researchers believe that until this method gains a more prominent place in the discussion of methods of fertility control, it will remain a choice that is restricted to far fewer people than necessary (Harper & Ellertson, 1995).

Harper and Ellertson (1995) concluded that there was widespread approval regarding the use of emergency contraceptive pills among men and women; however, more students showed support of this method in a case of rape or a broken condom. Harper and Ellertson (1995) determined that the level of awareness for emergency contraceptive pills was sound, but precise knowledge regarding emergency



contraceptive pills was lacking with the graduate students being markedly less aware of the method than the undergraduates. The student subjects did not know what emergency contraceptive pills consisted of nor were they aware of how emergency contraceptive pills worked, their side effects, and their effectiveness. Many students were uncertain as to when and where emergency contraceptive pills could be obtained. Harper and Ellertson (1995) recommended that education about emergency contraceptive pills be incorporated by the staff of clinics in routine visits for contraception.

The Harper and Ellertson (1995) study explored whether or not students looked favorably upon the use of emergency contraceptive pills. The current study focused on issues that the students thought to be important in their options for emergency contraceptive pill use.

In another study, DelBanco, Mauldon, and Smith (1997b) assessed the knowledge and attitudes of randomly selected Americans and obstetrician-gynecologists regarding emergency contraceptive pills. A telephone survey was designed to examine public knowledge and attitudes regarding the magnitude and scope of unplanned pregnancy and various contraceptive options, including

emergency contraception. A random digit selection procedure was used to produce a national cross-section sample of 4,000 Americans with telephones in the 48 contiguous states. Of the final sample (N = 2,002) completing the survey, the women (n = 1,000) and the men (n = 1,002) comprised the overall response rate of 50% (DelBanco et al., 1997b).

A second telephone survey was implemented to assess knowledge and attitudes of obstetricians-gynecologists toward unplanned pregnancy and contraception. A random, nationally representative sample of self-identified obstetrician-gynecologists was contacted to set up telephone interviews for a later date. The sample of physicians (N = 307) were males between the ages of 40 and 64 years who practiced mostly in suburban locations and in single speciality group practices. The refusal rate of physicians contacted was 23%. Those physicians refusing to respond to the survey were similar to the respondents with respect to practice characteristics, age and gender patterns, and geographic diversity (DelBanco et al., 1997b).

Of the respondents from the public sector, 36% indicated they were aware of a treatment that could be

used within a few days after unprotected sex to prevent pregnancy. Fifty-five percent of the respondents said they had heard of emergency contraceptive pills with only 1% of the respondents or their partners actually using emergency contraceptive pills themselves. A further analysis was conducted focusing on a subsample of female respondents (n = 258) who were at risk for unplanned pregnancy. Ninety-three percent of the women at risk had spoken with a health care professional about birth control, 62% had heard of emergency contraception, and only 1% had used emergency contraception (DelBanco et al., 1997b).

Using multivariate regression analysis, DelBanco et al. (1997b) concluded that the individual's age, gender, at-risk status, race or ethnicity, income, education, marital status, and parenting status as well as having talked to a health care professional about birth control were predictors of greater awareness about emergency contraceptive pills. Communication with a health care provider also predicted a greater likelihood of hearing about emergency contraceptive pills and knowing something could be done.

Of the physicians in the survey, 99% reported being familiar with emergency contraceptive pills. Of the total,

77% stated they were very familiar, and 22% were somewhat familiar. Among those physicians very familiar with the method, 88% considered the emergency contraceptive pills very safe and 85% considered them very effective. Of the entire sample of physicians, 84% thought emergency contraceptive pills were very safe and 78% thought they were very effective (DelBanco et al., 1997b).

Few physicians (7%) reported that they had informed their female patients about emergency contraceptive pills. Although 70% reported prescribing emergency contraceptive pills within the last year, 77% of them had done so on five or less occasions (DelBanco et al., 1997b).

Sixty-six percent of physicians stated they did not perform abortions or medically necessary terminations. Of this group, 64% stated no objections or concerns about prescribing emergency contraceptive pills, 65% had prescribed at least once in the last year, and 48% who, for ethical, moral, or religious reasons do not perform abortions, also had prescribed at least once in the last year (DelBanco et al., 1997b).

DelBanco et al. (1997b) concluded that public knowledge about the availability and use of emergency contraceptive pills is limited as is the practice of

prescribing the pills among physicians. Because patients relied on physicians for information on birth control, these physicians could improve knowledge about the availability of emergency contraceptive pills among their patients (DelBanco et al., 1997b).

DelBanco et al.'s study was germane to the current study in that the issues of accessibility and availability have been documented to affect knowledge levels and attitudes toward emergency contraception.

According to a survey of men and women age 18 to 44 years in the United States, Canada, and the Netherlands, unplanned pregnancy rates vary dramatically across developed countries. In a research by DelBanco, Lundy, Hoff, Parker, and Smith (1997a), the following research question was addressed: Why such variation?

A survey was designed to assess public knowledge and attitudes about unplanned pregnancy and contraception of adults age 18 years and older in the contiguous United States, Canada, and the Netherlands. Random-digit selection was used to assure equal representation of people in households who are listed and unlisted in telephone directories. This sampling procedure was used to produce representative samples of households with

telephones. Each interview was conducted by a person of the same sex as the respondent (DelBanco et al., 1997a). In the United States, of the eligible men and women contacted by telephone (N = 4,051), 49% (n = 2,002) completed the interview. Of the eligible adults in Canada contacted by telephone (N = 4,651), 22% (n = 1,002) completed the interview, and of the Dutch respondents (N = 2,315), 43% (n = 1,001) completed the interview (DelBanco et al., 1997a).

The researchers' report was based on respondents ages 18 to 44 years, the age group for which these issues are most personally relevant (DelBanco et al., 1997a). The variation in the incidence of unplanned pregnancy among these countries was reflected in abortion rates. The overall United States abortion rate (25.9 abortions per 1,000 women) is 1.7 times that of Canada (15.3 per 1,000) and more than four times that of the Netherlands (6 per 1,000 women). The United States figures also represent the highest pregnancy rate (94.8 per 1,000 women), which is 1.3 times that of Canada (72 per 1,000) and 1.5 times that of the Netherlands (62.3 per 1,000) (DelBanco et al., 1997a).

The proportion of the survey population who believe that unplanned pregnancy is a very big problem was 60% in the United States, 36% in Canada, and 6% in the Netherlands. Similarly, the proportion of adults who considered unplanned pregnancy at least a somewhat big problem is highest in the United States (93%), 81% in Canada, and 41% in the Netherlands (DelBanco et al., 1997a). The Americans were more likely to cite societal problems as significant factors in the rate of unplanned pregnancy than the Canadians or the Dutch. Higher proportions of Americans also cited the cost of contraceptives and the inability to obtain these methods as issues (DelBanco et al., 1997a).

In all three countries, adults have a generally accurate understanding of the relative effectiveness of commonly used contraceptives; however, Americans are the most skeptical about the effectiveness of some of these methods, particularly the pill and condoms. Similarly, while adults in all three countries have a generally accurate understanding of the relative safety of various contraceptives, Americans express more skepticism. The lack of confidence in effectiveness and safety of

contraceptives may influence their decision not to use any method (DelBanco et al., 1997a).

Another issue addressed was that in all three countries, contraceptive users most often believed that both partners share the responsibility for initiating discussions about contraception; however, this perception is less common in the United States (41%) than in Canada and the Netherlands (51% each). American and Dutch users predominantly think that women are responsible for choosing a method and ensuring that it is used (DelBanco et al., 1997a). Findings also show that substantial proportions of adults in all three countries are uninformed about the time during the menstrual cycle when a woman is most fertile and about the likelihood of conception if women have unprotected intercourse (DelBanco et al., 1997a).

Men and women in all three countries cite health care providers as the major source they rely on for information about contraception; however, only 51 to 63% have ever had a discussion with their health care provider about contraception. Clearly, health professionals can help meet a need for information in each of these countries; however, other sources of information cited by the



respondents (i.e., magazines, peers, friends, television, and family) also can work to improve public knowledge (DelBanco et al., 1997a).

DelBanco et al. (1997a) used a sample group of 18 to 44 year olds, many of whom could potentially be college-age students. DelBanco et al.'s study identified the importance of attitudes and knowledge in the use of emergency contraceptive pills, thus the findings may provide a basis of knowledge levels and attitudes for college-age students which was the focus sample of the current study.

Limited research has been done on emergency contraception. As discussed by Harper and Ellertson (1995), college-age students tend to be less compliant with birth control for various reasons, yet are one of the few groups of the population with access to reproductive health services on many college campuses. The current study addressed the knowledge and attitudes of college-age students.

## Chapter III

### The Method

The purpose of this study was to examine, measure, and analyze the knowledge level and attitudes of college-age students about the use of emergency contraception.

#### Design of the Study

The research design for identifying knowledge levels and attitudes of college-age students about emergency contraception was descriptive. According to Polit and Hungler (1995), descriptive research aims predominantly at describing phenomena rather than explaining them. The purpose of descriptive studies is to observe, describe, and document aspects of a situation as it naturally occurs. The researcher's goal was to measure the students' knowledge levels and determine their attitudes about emergency contraception; therefore, a descriptive design was suitable for this purpose.

### Limitations

These data were obtained on a single college campus in a southern state. A total of 106 participants responded; however, three of the respondents exceeded the age range and, therefore, were not included in the analysis. The final sample (N = 103) included Caucasian, African-American, and Native American students. For unknown reasons, no respondents from other races participated in the survey. The results should, therefore, be viewed with caution and should not be generalized to other campus settings with a more representative culture/ethnic diversity.

### Setting, Population, and Sample

The setting for this study was a small college town in Northeast Mississippi. A state-funded institution of higher learning was utilized. The university enrollment was 10,534 students comprised of 52% females (n = 5,477) and 48% males (n = 5,057). Resident students constituted 38% (n = 4,002) of the students enrolled. The student union was accessed for attaining the sample population. The student union was geographically located near the center of the campus and housed the campus post office,

student mailboxes, the student bookstore, the campus cafeteria/grill, the college's ticket office, a recreation room, and several administrative offices.

The population for this research study consisted of college-age students between the ages of 18 and 25 years currently enrolled at a university. A nonprobability convenience sample design was employed as all students who met the criteria, accessed the student union, and were willing to participate were included. The target sample was 100 participants. The actual sample was  $N = 103$ .

#### Method of Data Collection

Permission to conduct this research study was first obtained from the Mississippi University for Women Committee on Use of Human Subjects in Experimentation (see Appendix A). Following approval by Mississippi University for Women, a request was made to the Institutional Review Board for Human Subjects Research at The University of Mississippi for permission to conduct research on the campus grounds (see Appendix B). Following approval from both review boards, a date was set for data collection through the central ticket office in the student union.

The central ticket office arranged for a table and three chairs to be set up on the second level of the student union at the front doors facing out into the courtyard. This researcher obtained the sample population by approaching potential participants as they entered and exited the student union. A packet consisting of the introductory letter/informed consent form and the Harper/Ellertson Questionnaire was distributed by the researcher to the students (see Appendices C, D, and E). Participants were asked to read the introductory letter and sign the informed consent form before completing the questionnaire. Clipboards and pen were provided for the participants' convenience. Data collection occurred on June 12, 1998, from 8:00 a.m. to 4:30 p.m.

#### Instrumentation

The instrument used for this research study was a questionnaire that was developed by Harper and Ellertson for use in a research project in 1995 (see Appendix F). The 24 questions were designed to identify areas of confusion about emergency contraception for students, including their attitudes toward the method and their understanding of what emergency contraceptive pills were

and how they functioned (Harper & Ellertson, 1995). This current researcher developed a 5-question Demographic Data Form to provide information about the students regarding race, gender, marital status, age, and whether or not the sample participant was sexually active.

### Data Analysis

The data analysis was conducted using descriptive statistics and chi-square. Descriptive statistics enabled the researcher to reduce, summarize, and describe the quantitative data (Polit & Hungler, 1995). Frequencies and percentages were calculated for the 24 questions of the survey and the five questions on the Demographic Data Form. For additional analysis of data, the chi-square was used to determine the degree of significance in the relationship between knowledge levels and attitudes as obtained from responses to Questions 8 and 11, 10 and 19, 6 and 13, 16 and 24, 15 and 16, 10 and 16, 14 and 19, and 11 and 19 of the survey (Polit & Hungler, 1995).

## Chapter IV

### The Findings

The purpose of this study was to examine the knowledge level and attitudes of college-age students on a southern college campus regarding the use of emergency contraception. A descriptive design was employed. Knowledge of the emergency contraceptive pill regimen, including how the pill works, its effectiveness, and the optimal time for use were addressed as well as whether or not the participants' attitudes were positive toward the method.

#### Description of the Sample

The sample was drawn from a university population of college-age students between the ages of 18 and 25 years in the state of Mississippi. A non-probability convenience sample design was employed as all students who met the criteria, accessed the student union, and were willing to participate were included. The final sample was N = 103.

The mean age for the subjects was 20.75 years with an age range from 18 to 25 years. Participants in the study were either Caucasian, African American, or Native American. The majority of the respondents were Caucasian (59%) and male (65%). Specific distributions of the variables are found in Table 1.

Table 1

Demographics by Ethnicity and Gender Using Frequencies and Percentages

Variable	f	%
Ethnicity		
Caucasian	61	59
African American	41	40
Native American	1	1
Gender		
Male	67	65
Female	36	35
Sexually active		
Yes	73	71
No	30	29

The respondents also were classified according to their academic interests: Thirty-one percent majored in



sciences (n = 32), 15.5% (n = 16) listed humanities as their major, 37.8% (n = 39) declared social sciences as their major, and 15.5% (n = 16) were undeclared. The educational level of the study population was 8.7% (n = 9) of the respondents were freshmen, 29.1% (n = 30) of the respondents were sophomores, 32% (n = 33) of the respondents were juniors, 12.6% (n = 13) of the respondents were seniors, and 17.5% (n = 18) were graduate students. The sample was stratified as to political affiliation: 29.1% (n = 30) of the respondents classified themselves as Republicans, 40.8% (n = 42) were Democrats, 16.5% (n = 17) were Independents, and the remaining respondents (12.6%, n = 14) were not sure of their political affiliation or none of the above.

#### Results of Data Analysis

Descriptive statistics were used to establish frequencies and percentages of the data obtained from the Harper/Ellertson Questionnaire, and chi-square analysis was used to determine the magnitude of the relationship between knowledge levels and attitudes of college-age students.

Question 1

The first research question that guided this study was what is the knowledge level of college-age students regarding the use of emergency contraception? The survey contained questions asking the respondents if they knew about emergency contraception, the ingredients and effectiveness of the emergency contraceptive pills, side effects of the method, and the appropriate timing for use of the method. The results related to these categories are presented separately.

Knowledge of emergency contraceptive pills. Fifty-seven percent (n = 59) sampled had heard of emergency contraceptive pills. There was a slight racial difference in the knowledge of the emergency contraceptive pills, with 61% (n = 61) of the Caucasian respondents having heard of the emergency contraceptive pills as opposed to 51% (n = 41) of the African-American respondents. Sixty-nine percent (n = 25) of the females had heard of emergency contraceptive pills whereas 50.7% (n = 34) of the males had heard of them. Basic knowledge of the emergency contraceptive pills was more common in individuals majoring in the sciences (68.8%, n = 22) or the humanities (62.5%, n = 10) as opposed to those

majoring in social sciences (46%, n = 17). Sixty-two percent (n = 45) of those individuals who stated they were sexually active had heard of the morning after pill as opposed to 47% (n = 14) of those who stated they were not sexually active. The survey indicated that the longer the individual was exposed to college life, the more likely the chance that the individual would have heard of emergency contraceptive pills. Only 22% (n = 2) of the freshmen had heard of this method while 72% (n = 13) of the graduate respondents indicated that they had heard of the method. Specific distributions of these variables are found in Table 2.

Table 2

Demographics by Class Ranking and Knowledge of Emergency Contraceptive Pills

Variable	f	%
Class		
Freshman	2	22
Sophomore	17	57
Junior	19	58
Senior	8	62
Graduate	13	72

When asked about the availability of the emergency contraceptive pill at the health center, 62.1% (n = 60) of the respondents were unsure while 7.8% (n = 7) believed it was always available, and 16.5% (n = 16) believed it was available during regular working hours. The remaining 13.6% (n = 13) stated that they did not think the emergency contraceptive pill was available at all.

Pharmacotherapeutics. Even though the majority of the respondents stated that they had heard of the emergency contraceptive pill, most did not know the indications for use. Only 32% (n = 33) of respondents recognized that the emergency contraceptive pill should not be taken after a missed period or a confirmed pregnancy. Furthermore, even more indicative of the lack of specific knowledge of the student population was that only 16.5% (n = 26) were aware of the appropriate time period for effective use. Only 18.4% (n = 19) of the respondents recognized that the emergency contraceptive pill was simply a larger dose of oral contraceptives while 28.2% (n = 29) of the respondents knew that this method was only 75% effective when taken appropriately. Students' knowledge about the dosage and effectiveness of emergency contraceptive pills was correlated and found significant,  $\chi^2(12, N = 103) =$

29.085,  $p = .004$ . Sixty percent ( $n = 62$ ) of the respondents acknowledged concern that the emergency contraceptive pill might not work.

Side effects. Thirty-five percent of the respondents recognized that the emergency contraceptive was associated with minor side effects. The majority of the respondents (41.7%,  $n = 43$ ) were unsure about the side effects of this method. Only 2% ( $n = 2$ ) of the respondents considered the side effects to be serious. Fifty one percent ( $n = 52$ ) acknowledged that they would either use or recommend the method while 35% ( $n = 36$ ) of the respondents were not sure. The correlation between students' recognition of the side effects of emergency contraceptive pills and recommendation of the method was  $\chi^2(8, N = 103) = 10.054$ ,  $p = .261$ .

Timing. Regarding basic knowledge of pregnancy risks, 24.3% ( $n = 25$ ) knew that a woman is more likely to get pregnant 2 weeks before her menstrual cycle. Nearly 50% ( $n = 52$ ) of the students were unsure of the medically appropriate time to take the emergency contraceptive pill. A mere 4.85% ( $n = 5$ ) of the students knew both the timing for increased pregnancy risks and the appropriate timing for using the method.

## Question 2

The second research question used to guide this research study was what are the attitudes of the college-age students regarding the use of emergency contraception?

Attitudes. When asked whether or not the emergency contraceptive pill should ever be used, only 44.7% (n = 46) responded yes with 38.8% (n = 40) responding not sure. Of those 16.5% (n = 17) who responded negatively to the use of the morning after pill, 35% (n = 6) cited moral reasons, 24% (n = 4) cited health reasons, and 41% (n = 7) cited other reasons to explain their position. When asked whether or not they might use the method themselves or recommend the method to a friend, almost 51% (n = 52) responded yes. Approval of the method for use in someone who has been raped was 63% (n = 65).

Ethical and health issues. The survey also evaluated the respondents' ethical views in the use of the emergency contraceptive pill. The majority of the respondents (44.7%, n = 43) had no concerns about the ethical issues while 33% (n = 32) did have concerns. The remaining respondents (22.4%, n = 22) were unsure. Respondents also were questioned if the health risks concerned them. Forty-

nine percent (n = 48) of the respondents stated that they had concerns about the health risks while 29.1% (n = 28) did not have any concerns. The remainder of the respondents (22.3%, n = 22) were unsure of the role of health risks using this method. There was a strong correlation between health risks and ethical issues in regard to the use of contraceptive pills,  $\chi^2$  (4, N = 103) = 96.842, p = .000.

Another aspect of the respondents' viewpoints considered was their religious orientation. Of the respondents, 41.7% (n = 40) considered religion to be very important, 38.8% (n = 38) considered religion to be somewhat important, and 11.7% (n = 11) felt religion was not very important. The remaining respondents (6.8%, n = 6) were either not sure or felt that religion had no importance at all.

The viewpoints of the respondents were further evaluated in the context of whether or not they would use the emergency contraceptive pills themselves or recommend them to a friend. When asked if the respondents knew someone who would have benefitted from the emergency contraceptive pill, 59.2% (n = 57) responded yes while 19.4% (n = 19) said no and 21.4% (n = 21) were unsure.

When evaluated in the context of either personal use or recommending the method, 50.5% (n = 52) indicated they would use or recommend the method, 14.6% (n = 15) would not use or recommend the method, and 35% (n = 36) were unsure.

Availability. The respondents also were surveyed about the campus student health center. They were asked their views regarding the role of the health center in educating the student population. When asked whether the student health center should provide the emergency contraceptive pill, 56.3% (n = 55) either strongly agreed or agreed, whereas only 10.7% (n = 10) disagreed or strongly disagreed. The survey also evaluated the students' viewpoints as to the availability of the emergency contraceptive pill. Fifty-eight percent (n = 56) of the respondents either strongly agreed or agreed with the concept that the pill should be attainable, whereas only 12.7% (n = 12) disagreed or strongly disagreed with this statement. Sixty-one percent (n = 59) of the respondents strongly agreed or agreed with the statement that the student health service should do more to inform students about the emergency contraceptive pill, whereas



only 10.7% (n = 10) disagreed or strongly disagreed with the statement.

## Chapter V

### The Outcomes

Attitudes on college campuses regarding sexual activity and contraception have changed dramatically over the last several decades as well as the knowledge levels on these issues. Recent developments in contraceptive technology, including emergency contraceptive pills, have added another method of preventing unwanted pregnancies. The purpose of this study was to evaluate the knowledge level and attitudes of college-age students between the ages of 18 and 25 years on a southern college campus regarding the use of emergency contraception. A descriptive design was utilized to answer the research questions. The two research questions presented in this study were as follows:

1. What is the knowledge level of college-age students regarding the use of emergency contraception?
2. What are the attitudes of college-age students regarding the use of emergency contraception?

Data were obtained using the Harper/Ellertson Questionnaire. The sample of convenience was selected from a southern college population frequenting the student union.

The knowledge level of college-age students increased with the amount of time spent on campus was a strong correlation between students' knowledge of the dosage and effectiveness of emergency contraceptive pills ( $p = .004$ ). The respondents who believed that the emergency contraceptive pills have minor side effects were more likely to use the method or recommend it to a friend. There was a strong correlation between students' attitudes of health risks and ethical issues in using emergency contraceptive pills ( $p = .000$ ).

## Discussion

Knowledge. The first research question was what are the knowledge levels of college-age students regarding the use of emergency contraception? This researcher determined that there was a general awareness and knowledge concerning the emergency contraceptive pills on a college campus. In the current study, 57.3% ( $n = 56$ ) of the college population had knowledge of the emergency

contraceptive pills as compared to only 36% of the general population as reported by DelBanco et al. (1997b). Harper and Ellertson (1995) concluded that the level of basic awareness is sound, although more precise knowledge of the emergency contraceptive method is lacking. Similarly in the current study, students knew that a form of emergency contraception existed but generally did not know that the emergency contraceptive pill regimen consisted of a large dose of combined oral contraceptives nor the side effects of the regimen. The students also were confused about the time frame in which emergency contraceptive pills must be taken and the effectiveness of the regimen in reducing the chances of pregnancy.

This researcher determined that the classification of student level was directly related to knowledge of the emergency contraceptive pills. Knowledge levels were lowest among freshmen (22%) and highest among graduate students (72%). In contrast, Harper and Ellertson (1995) revealed that graduate students were markedly less aware of emergency contraception than undergraduates.

Attitudes. The research question that guided this portion of the study was what are the attitudes of college-age students regarding the use of emergency

contraception? The current study results support findings by Harper and Ellertson (1995). In both studies students approved the emergency contraceptive method for use in someone who has been raped and disapproved the method as related to the students' concerns about health risks, efficacy, and ethical reasons.

The current research found no relationship between ethical concerns and religious beliefs. Of the students questioned, 81% reported religion to be either very important or somewhat important with 45% of the respondents having no concerns about ethical issues. Another interesting finding was that students who had a personal or close experience with a possible pregnancy were willing to recommend the emergency contraceptive method to someone else.

Additional findings included the attitudes of the students regarding the institution's student health center. The respondents felt that the student health center should not only provide emergency contraceptive pills, but the pills and information should be easily obtainable. In contrast to the students' attitudes, the health center's perceived attitude appeared to be more conservative as they refused to divulge any information

regarding their policies about the emergency contraceptive pill. In the study by Gold et al. (1997), the researchers concluded that physicians' attitudes were strongly influenced by both the environment in which they practiced and how long they had been out of medical school. The differences between the regional environment of the student health center and the attitude of the educational institution may also explain the attitudes of the clinical personnel regarding the emergency contraceptive pill. It is interesting to note that 67% of the respondents felt that the student health center should do more to inform the students about the emergency contraceptive pill. These results suggest conflicting attitudes between the student health center and the students which it serves. Even though the setting for this study was a major college campus, it is located in a largely rural area that is strongly conservative; therefore, one might speculate that the attitude of the clinic staff might be the result of the influences of the community as opposed to the influences of the institution.

### Conclusion

This study was designed to evaluate college-age students' knowledge and attitudes toward a specific type of contraception. Based on the results of this research, several conclusions were drawn. First, this study determined that a significant number of students had a general understanding of the emergency contraceptive pill but lacked specific information about the ingredients of the pill, the appropriate timing of therapy, and general effectiveness. Secondly, in terms of attitudes, the most important influencing approval of the method was in the case of rape or a broken condom.

### Implications for Nursing

A number of implications for nursing were derived from this study:

Practice. The advanced practice nurse providing primary care can utilize the findings of this research in the education and counseling of college-age students as well as increasing the awareness and knowledge of health care providers and physicians (Gold et al., 1997). According to Harper and Ellertson (1995), students pleaded for more information. The advanced practice nurse could be

instrumental in developing educational programs to meet the needs of the college-age students and primary care givers. In counseling of the college-age students, the advanced practice nurse and the student perceive each other, communicate information regarding family planning and contraceptive technology, set goals, and take action to attain these goals.

Research. The findings of this research determined that a significant number of students had a general understanding of emergency contraceptive pills but lacked information regarding the specifics about the regimen. Research is needed to develop methods that can be used by the advanced practice nurse and primary care givers to communicate information to the students, set goals, and attain these goals with the students.

Education. Family planning and contraceptive technology must be approached in the academic setting by nurse educators so that graduates will be adequately prepared to communicate this information to college-age students and set goals for implementing a plan with the students.



## Recommendations

Based on the results of this research, a list of recommendations may be made for future nursing research and practice.

### Research

1. Future research should be conducted to pursue/investigate attitudes of clinic staff members and primary care givers.

2. Future research should be conducted to investigate the knowledge and attitudes of the surrounding community of various geographical locations.

3. Future research should be done to identify knowledge and attitudes of incoming freshmen before exposure to campus life.

4. Future research should be implemented with the same population using various statistical analyses to further delineate the knowledge and attitudes with other research variables.

### Practice

1. Future development of education programs in campus student health centers should be based on the students' perception of need.

2. Future development of education programs should focus on the advanced practice nurse and other primary care givers.

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APPENDIX A

APPROVAL OF THE COMMITTEE ON USE OF  
HUMAN SUBJECTS IN EXPERIMENTATION OF  
MISSISSIPPI UNIVERSITY FOR WOMEN



MISSISSIPPI  
UNIVERSITY  
FOR WOMEN

Columbus, MS 39701

Office of the Vice President for Academic Affairs  
Eudora Welty Hall  
P.O. Box W-1603  
(601) 329-7142

April 8, 1998

Ms. Dollie Cadden  
c/o Graduate Program in Nursing  
Campus

Dear Ms. Cadden:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research provided no results are shared with University of Mississippi administration, and all participants should be over the age of 18.

I wish you much success in your research.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan Kupisch".

Susan Kupisch, Ph.D.  
Vice President  
for Academic Affairs

SK:wr

cc: Mr. Jim Davidson  
Ms. Melinda Rush  
Dr. Mary Pat Curtis



APPENDIX B

APPROVAL OF THE UNIVERSITY OF MISSISSIPPI  
INSTITUTIONAL REVIEW BOARD FOR HUMAN  
SUBJECTS RESEARCH



*The*  
**University of Mississippi**

Oxford • Jackson • Tupelo • Southaven

**The Graduate School**  
125 Old Chemistry  
University, MS 38677  
(601) 232-7474  
Fax: (601) 232-7577

**Office of Research**  
125 Old Chemistry  
University, MS 38677  
(601) 232-7482  
Fax: (601) 232-7577

April 24, 1998

Dollie Cadden  
715 Rice Road #17C  
Ridgeland, MS 39157

Dear Ms. Cadden:

We have received your application, "The Use of Emergency Contraception: College Age Students' Knowledge and Attitudes," and it has been assigned the protocol number 98-139.

Two modifications are requested:

1. Call the Ole Miss Union, if you have not already done so, for permission to distribute your survey there. The number for the Reservations office is 232-7106. I have talked with the Director's office about your project and there should not be a problem. Talk with the Reservations office about the logistics and they will set up a table for you.
2. Add to your consent form this language: This study has been reviewed by the University of Mississippi's Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University standards. If you have any questions, concerns or reports regarding this study, please contact the IRB at 232-7482.

Please return the modified form to me (by fax if you would like: 232-7577).

If you have any questions, please do not hesitate to call.

Sincerely,

Diane W. Lindley  
Coordinator, Institutional Review Board  
for Human Subjects Research



*The*  
**University of Mississippi**

Oxford • Jackson • Tupelo • Southaven

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June 2, 1998

Dollie Cadden  
715 Rice Road 317C  
Ridgeland, MS 39157

Melinda Rush  
Graduate Program in Nursing  
Mississippi University for Women  
Columbus, MS 39701

Dear Ms. Cadden and Ms. Rush:

This is to inform you that your application to conduct research with human subjects, *The Use of Emergency Contraception: College Age Students' Knowledge and Attitudes* (Protocol # 98-139), has been approved under the Exempt category.

Please be aware that any substantive changes in the methodology of procedures used in this research or the occurrence of any unanticipated problems related to the welfare of any subject should be brought to the attention of the Office of Research at the earliest possible time.

If you should have any questions or comments, please feel free to call me at (601) 232-7482. Thank you for your application. Good luck in your endeavor.

Sincerely,

Diane W. Lindley  
Coordinator, Institutional Review Board  
for Human Subjects Research

APPENDIX C  
INFORMED CONSENT FORM

Dear Survey Participant,

My name is Dollie Cadden. I am a registered nurse and a graduate student in nursing at Mississippi University for Women. The purpose of my research is to assess the knowledge levels and attitudes of college-age students on the subject of emergency contraception.

I am asking you to complete a four-page questionnaire. This should only take 10 to 15 minutes of your time. There is no immediate benefit to you for your participation; however, I believe this study will eventually impact the health care profession in a positive way by providing information that will help guide educational programs regarding this topic. There are no identified risks by participating in this study. You are free to withdraw from this study at any time. Participation is voluntary and confidentiality will be maintained as your name will not be used. Completion of the questionnaire will indicate your consent to participate in this study.

Thank you for your time and assistance in my educational research. Participation in this study will in no way affect your standing at this university. This study has been reviewed by the University of Mississippi's Institutional Review Board. The IRB has determined that this study meets the ethical obligations required by federal law and University standards. If you have any questions, concerns, or reports regarding this study, please contact the IRB at 232-7482.

Sincerely,

Dollie J. Cadden

APPENDIX D  
HARPER/ELLERTSON QUESTIONNAIRE

## Harper/Ellertson Questionnaire

**BACKGROUND:**

1. What is your classification in college?
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Graduate
  
2. Would you describe your academic interests as mainly
  - a. Sciences
  - b. Humanities
  - c. Social Sciences
  - d. Not sure

**KNOWLEDGE ABOUT THE MORNING AFTER PILL:**

3. Have you ever heard about the morning after pill?
  - a. Yes
  - b. No
  - c. Not sure

If you answered no or not sure, please bear with us for the next few questions. If any of the questions jog your memory, try to answer. You can always say not sure.

4. Do you think the morning after pill should ever be used?
  - a. Yes
  - b. No
  - c. Not sure
  
5. If you answered no, why don't you think it should be used?
  - a. My answer was yes, or if no
  - b. It might not work.
  - c. Health concerns
  - d. Moral doubts
  - e. Other reasons
  - f. Not sure
  
6. If a couple has had unprotected intercourse, at what time during the woman's menstrual cycle would it be medically appropriate to take the morning after pill?
  - a. At any time in her monthly cycle
  - b. Only during certain times
  - c. Never
  - d. Not sure

7. Do you think the morning after pill is medically appropriate after a woman has missed her period or has just confirmed her pregnancy?
- \_\_\_\_\_ a. Yes  
\_\_\_\_\_ b. Not  
\_\_\_\_\_ c. Not sure
8. How much do you think the morning after pill reduces the chance of pregnancy if taken correctly?
- \_\_\_\_\_ a. Almost 100%  
\_\_\_\_\_ b. 75%  
\_\_\_\_\_ c. 50%  
\_\_\_\_\_ d. 25%  
\_\_\_\_\_ e. Not sure
9. By when do you think the pill must be taken after unprotected intercourse in order to work?
- \_\_\_\_\_ a. Immediately afterward  
\_\_\_\_\_ b. Within 24 hours  
\_\_\_\_\_ c. 72 hours  
\_\_\_\_\_ d. One week  
\_\_\_\_\_ e. Not sure
10. Do you think that the morning after pill has side effects?
- \_\_\_\_\_ a. Almost none  
\_\_\_\_\_ b. Minor side effects  
\_\_\_\_\_ c. Uncomfortable, but not serious  
\_\_\_\_\_ d. Serious  
\_\_\_\_\_ e. Not sure
11. Is the effective ingredient in the morning after pill,
- \_\_\_\_\_ a. just the same as in the regular birth control pill?  
\_\_\_\_\_ b. the same but a larger dose?  
\_\_\_\_\_ c. completely different?  
\_\_\_\_\_ d. Not sure
12. Is the morning after pill currently available at the student health center?
- \_\_\_\_\_ a. Available 24 hours a day, 7 days a week  
\_\_\_\_\_ b. Available during regular weekday hours  
\_\_\_\_\_ c. Not available  
\_\_\_\_\_ d. Not sure

**KNOWLEDGE ABOUT THE RISK OF PREGNANCY AND THE AVAILABILITY OF EMERGENCY CONTRACEPTIVES AT THE STUDENT HEALTH FACILITY:**

In case you weren't sure, the morning after pill is a medication taken after unprotected intercourse that can help to prevent pregnancy. The pill is designed to be taken when unprotected intercourse has occurred during the fertile time in a woman's cycle. While the pill works best when taken right away, it can work for up to 72 hours (3 days). It can reduce the chances of pregnancy by about 5%. Some women who take it experience relatively minor side effects, including nausea and headaches. The morning after pill is the same as the birth control



pill, but a stronger dose. It is \_\_\_ available at the student health center \_\_\_\_\_.

Now, I'd like to ask some questions about pregnancy risk and your opinions about the morning after pill.

13. At what point in her menstrual cycle is a woman most likely to get pregnant?
- \_\_\_\_\_ a. During her period
  - \_\_\_\_\_ b. One week before her period
  - \_\_\_\_\_ c. 2 weeks before
  - \_\_\_\_\_ d. 3 weeks before
  - \_\_\_\_\_ e. Not sure
14. Has anyone you know in college here ever been in a situation when it would have been good to have known more about the morning after pill?
- \_\_\_\_\_ a. Yes
  - \_\_\_\_\_ b. No
  - \_\_\_\_\_ c. Not sure
15. Would health risks concern you about the morning after pill?
- \_\_\_\_\_ a. Yes
  - \_\_\_\_\_ b. No
  - \_\_\_\_\_ c. Not sure
16. Would ethical issues about its use concern you?
- \_\_\_\_\_ a. Yes
  - \_\_\_\_\_ b. No
  - \_\_\_\_\_ c. Not sure
17. Would you worry that the morning after pill might not work?
- \_\_\_\_\_ a. Yes
  - \_\_\_\_\_ b. No
  - \_\_\_\_\_ c. Not sure
18. Do you think the morning after pill is appropriate when a woman has been raped?
- \_\_\_\_\_ a. Yes
  - \_\_\_\_\_ b. No
  - \_\_\_\_\_ c. Not sure
19. From what you know about the morning after pill, do you think that you might take it or recommend it to a friend if needed?
- \_\_\_\_\_ a. Yes
  - \_\_\_\_\_ b. No
  - \_\_\_\_\_ c. Not sure

20. Do you agree or disagree with the following statement? The student health center should provide the morning after pill as an emergency contraceptive?
- \_\_\_\_\_ a. Strongly agree
  - \_\_\_\_\_ b. Agree
  - \_\_\_\_\_ c. Neutral
  - \_\_\_\_\_ d. Disagree
  - \_\_\_\_\_ e. Strongly disagree
  - \_\_\_\_\_ f. Not sure
21. Do you agree or disagree with the following statement? The morning after pill should be easy to obtain when needed.
- \_\_\_\_\_ a. Strongly agree
  - \_\_\_\_\_ b. Agree
  - \_\_\_\_\_ c. Neutral
  - \_\_\_\_\_ d. Disagree
  - \_\_\_\_\_ e. Strongly disagree
  - \_\_\_\_\_ f. Not sure
22. Do you agree or disagree with the following? Student health services should do more to inform students about the morning after pill.
- \_\_\_\_\_ a. Strongly agree
  - \_\_\_\_\_ b. Agree
  - \_\_\_\_\_ c. Neutral
  - \_\_\_\_\_ d. Disagree
  - \_\_\_\_\_ e. Strongly disagree
  - \_\_\_\_\_ f. Not sure

Finally, I would like to ask you two more background questions.

23. Do your political views tend to be affiliated with
- \_\_\_\_\_ a. Republicans
  - \_\_\_\_\_ b. Democrats
  - \_\_\_\_\_ c. Independents
  - \_\_\_\_\_ d. None of these
  - \_\_\_\_\_ e. Not sure
24. How important is religion to you?
- \_\_\_\_\_ a. Very important
  - \_\_\_\_\_ b. Somewhat important
  - \_\_\_\_\_ c. Not very important
  - \_\_\_\_\_ d. Not at all
  - \_\_\_\_\_ e. Not sure

Thank you very much for participating in this survey.

APPENDIX E  
DEMOGRAPHIC DATA FORM

## Demographic Data Form

Select the appropriate response.

## 1. Race

- a. Caucasian
- b. African American
- c. Native American
- d. Latino/Hispanic/Mexican

## 2. Gender

- a. Male
- b. Female

## 3. Marital Status

- a. Single
- b. Divorced
- c. Married
- d. Widowed

## 4. Age: \_\_\_\_\_ years

## 5. Are you sexually active?

- a. Yes
- b. No

APPENDIX F  
PERMISSION TO USE TOOL

Memo from **CHARLOTTE ELLERTSON, Ph.D.**

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14 Jan '98.

Dear Dolly:

Here are the questions we used. Good luck with your research! I'm delighted to see more young people working on this important topic. Let me know your results!

- Charlotte

P.S. I'm including a book of readings you may find helpful.

*UNIVERSITY of PENNSYLVANIA*

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Sociology Department  
3718 Locust Walk  
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FAX # (215) 573-2081

May 19, 1998

Dollie Cadden, RN  
715 Rice Road, #17C  
Ridgeland, MS 39157

Dear Ms. Cadden:

I am sending you a copy of our survey on emergency contraception in response to your request. I'm afraid that I'm probably far too late to assist you with your study, however. I apologize, but I did not receive your letter until recently, since I have been at a different address for the past few years, and for some reason your letter was not forwarded to me. I finally visited my former office, and saw it there. I wish you success in your research on emergency contraception if you are still involved with it.

Sincerely,



Cynthia C. Harper, Ph.D.