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Title: Conceptions of Contraception: awareness and access to emergency contraception amount young adults in Albuquerque.

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ABSTRACT

Background: Family planning has enormous societal, economic, and interpersonal implications. The United States, NM is no exception, has a much higher rate of unintended pregnancies (50%) than other developed countries. This is associated with poor health outcomes for the mother and the child. Emergency contraception (EC) provides a safe back up method. NM had tried to increase access to EC by licensing pharmacists to dispense it without a prescription. In addition, the FDA agreed to make it OTC for people >18 years old.

Objective: To assess young adults' knowledge and access to EC in the Albuquerque area. Our goal is that this information will provide a better understanding of EC use in this population and thereby make EC more available.

Methods: Anonymous, self-report, survey administered in university classrooms to individuals who were 18-25 years old and willing to participate.

Results: Total 339 participants (female 199, male 140). The majority knew about EC and that it was available (95% and 96% respectively). However where it could be obtained and what exactly it was seemed unclear for the majority of participants. These results did not change based on age. Participants who discussed EC with their HCP were more likely to have used EC ($p < 0.0001$) and know that it was different from "the abortion pill" ($p = 0.005$). In total 33% of female participants had used EC. Women who had used EC were only slightly more likely to know that EC was available directly from a pharmacist (Fisher's Exact Test $p = 0.01$). Otherwise, their responses were statistically similar to the other participants.

Summary: Emergency contraception is a valuable tool in the arsenal of socially, economically, and individually important campaign of family planning. Young adults' knowledge about EC has improved in some areas (availability from pharmacist, OTC, and the distinction between it and RU 486). Despite the change in status to OTC, public health and Planned Parenthood clinics are still the most common access point. Further study to assess the access of individuals <18 years old, actual use when women have EC on hand, and its correlation with conception is recommended. Lastly, HCP should to continue to inform patients about EC to be used as it was intended –as Plan B for when Plan A –a consistent, reliable, birth control method fails.

TEXT

Background about EC

Family planning has enormous societal, economic, and interpersonal implications. Unintended pregnancies include mistimed pregnancies and unwanted pregnancies are a continual issue during the three decades that the average American woman spends avoiding pregnancy. Unwanted pregnancies, where the woman has no intention of getting pregnant now or in the future, make up about 25% of unintended pregnancies and account for about 3.5 million pregnancies per year in

the United States.ⁱ This is a much higher rate of unintended pregnancies, 50%, as compared to other developed nations. In New Mexico, 46% of pregnancies are unintended.ⁱⁱ

The economic, societal, and personal impact of unintended pregnancies is even greater among teen parents and unfortunately the two are correlated. 78% of pregnancies in women < 20 years old are unintended and these account for about 23% of all unintended pregnancies.ⁱⁱⁱ Nationally pregnancies in 15-19 year olds account for 8.4 % of all pregnancies.^{iv} New Mexico has the fourth highest rate of teen pregnancy. Rates vary from 10.3%^v to 18%^{vi} in published studies.

Unintended pregnancies are associated with increased financial and health burdens, especially in teenagers and unmarried women. Unintended pregnancies are associated with lower maternal education and economic achievement, less prenatal care, higher rates of abortion, congenital malformation, delivering prematurely and low birth weight babies, child abuse and neglect, and behavioral disorders in children. Sixty-nine percent of unintended pregnancies occur in unmarried women.^{vii} In NM, 47% of children are born to unmarried women compared to the US average of 34%.^{viii} The financial strain of a child in this situation leads to a burden that extends beyond the family to the state and the health care system.^{ix}

How can unintended pregnancy be prevented? About 64% of all women ages 15 to 44 use some type of birth control regularly. The three most common methods are tubal ligation 25.6%, oral contraceptives 24.9%, and male condoms 18.9%. More than half (54%) of women who have an unintended pregnancy used some sort of birth control within the month that the conception took place.^x

New Mexico's rates, according to the Pregnancy Risk Assessment Monitoring System (PRAMS) study, 46% of pregnancies are unintended. Of those, 45% are using contraception at the time of conception.^{xi} Some studies attribute unintended pregnancies in women using birth control at the time of conception to non adherence or improper use of birth control. Better education about the proper use of various methods of birth control may be needed.^{xii} In any situation, emergency contraception (EC) provides a safe back up method.

EC, also known as the "morning after pill" and Plan B, is two doses of 0.75mg of levonorgestrel. EC reduces the chance of conception to 1% if taken within the first 24 hours and to 8% if taken at 72 hours. It is thought to prevent pregnancy by inhibiting implantation and or fertilization.^{xiii}

EC has been marketed since 1997. In 2004 the FDA rejected a proposal to make EC universally available over-the-counter. This historic FDA ruling that went against a unanimous committee recommendation and created a dual over-the-counter (OTC) standard for Plan B. It is now available by prescription only for teens younger than 18 and OTC for teens over 18.^{xiv}

Background to study

The economic, societal, and interpersonal impact of unintended pregnancy on peoples' lives makes EC an important option. The objective of this study is to assess young adults' knowledge and access to EC in the Albuquerque area. Our goal was that this information would provide a better understanding of EC use in this population and thereby make EC more reliably available.

In 2003 Kaiser Family Foundation (KFF) did a large (n 1,151) phone survey Californians age 15-44 that measured knowledge of and attitudes towards EC. Two thirds of those surveyed knew

there was something to do after unprotected sex or that could prevent pregnancy (the rates in other studies range from 41% to 77%). The percentage was less for 15-17 year olds (55%) and highest among 18-24 year olds (77%). Just over half the participants were aware that EC was available in the US (57% yes, 33% not sure and 8% thinking it was not available). There was confusion about the difference between RU486 and EC (50% thought they were the same, 25% didn't know, and 25% said they were not the same). Eight-five percent of interviewees approved of EC use in cases of rape and incest. In cases of birth control failure, the approval was a little less than 74%, but only 59% approved of its use in unprotected sex. Ten percent of 15-17 year olds and 23% of 18-24 year olds had used EC. These numbers declined to dramatically in older age groups (2% in 35-44 year olds, total 8% in 15-44 year olds).^{xv}

Only 7% reported receiving EC from their health care providers (HCP) and 90% reported having never discussed EC with their HCP. However, the majority said they would go to their doctor to get more information about EC. The number of participants who would look to their health care provider for information about EC was much higher in 18-44 year olds (60%) than in 15-17 year olds (36%). At the time, 43% knew that EC could be obtained directly from a pharmacist (Alaska, California, Hawaii, Maine, New Mexico, and Washington license pharmacists to provide EC without a prescription). Interestingly, 53% said they would be more likely to use EC if it was available directly from a pharmacist. In addition, people reported that they would be more likely to consider EC as an option if their doctors discussed it with them and if they had it on hand at home when they needed it.^{xvi}

These results are reflected in other studies that show that there are misconceptions about how EC works, when to use it, and how to get it. On the other side of the relationship, health care providers may not be aware of EC, may not discuss it with their patients, or offer it when it is needed. Women with EC on hand were two to four times as likely to use it.^{xvii xviii}

In population studies, since Plan B was first packaged, unintended pregnancy rates have not fallen. Studies have shown no change in sexual behavior (no increase in unprotected sex, no change in regular birth control method, and no increase in STIs).^{xix} Studies have not elucidated why there has not been a significant reduction, but the most repeated hypothesizes are that women choose not to use EC (ie willfully, unknowingly, or unsurely) and/or do not use it with every episode of unprotected intercourse. This is a mute point if people don't know about or don't have access to EC.^{xx}

The financial burdens, negative health outcomes, and the high rate of birth control failures, suggest that EC is a viable alternative to prevent conception. Therefore assessing EC availability and awareness in this community could reduce unintended pregnancy.

Methods:

To assess 18-25 year olds' knowledge about EC, a questionnaire (Appendix A) was be administered by one of two research coordinators in university classrooms. The research introduced themselves and the study at the beginning or end of the class, stating that participation was voluntary and had nothing to do with the class. Approximately following the script below:

“Hello, my name is Almea Matanock/Melinda Rogers and I am a medical student doing a research project on 18-25 year olds' knowledge about emergency contraception. This has nothing to do with this class. If you are 18-25 years old and would like to spend about five minutes of your time to take this survey, please take one. All of your responses to the survey will be kept anonymous and confidential. Your name is not recorded anywhere.

Some of the questions are personal and about sensitive subjects, so if you feel too uncomfortable at any point, you can stop the survey or not answer that particular question. When you are finished you can place your survey in the file up front where there is further information about emergency contraception if you want. Do you have any questions now?"

The participants completed the survey without assistance. When the survey was completed the participant placed it in an envelope to lower the risk of associating a survey with a participant. Participants were again asked if they had any questions. Their questions were answered or directed to the appropriate resource. Each participant was offered an informational brochure about EC when they turned their survey.

The statistical analysis will compare percentages in the two age groups (18-20 and 21-25 years old) using a confidence interval of .95 and a power of .80 using a two tail comparison. An estimated sample size for this power is 400 participants in each group using a 10% spread on question where the majority participants answer yes or no to the binomial questions (see Appendix B). A comparison of the two groups was used for the final analysis as well as a comparison of women who had used EC as compared to the whole group. There was no intention to treat since we did not have a way to keep track of possible participants who had not answered the survey. In addition, all but two participants completed the survey fully. These two, plus an additional five participants who were older than 25 years were not counted in the final analysis.

Results

Raw scores: total number of participants 339: female 199, 33% of whom had previously used EC: male 140.

- Q2. 95% knew postcoital pregnancy prevention exists.
- Q3. 96% knew EC was available in the US.
- Q4. 59% knew that EC was available direct from a pharmacist.
- Q5. 42% knew that EC was available OTC.
- Q6. 20% thought that EC was the same as "the abortion pill."

The majority participants said that they would access EC at a clinic such as public health department or Planned Parenthood (Table 1).

Age ranged from 18-25y (mean 21y, mode 21y, median 22y). Divided into two age groups (18-20 vs 21-25y), there was no difference in knowledge about postcoital pregnancy prevention ($p=0.58$), if EC could be obtained directly from a pharmacist ($p=0.83$), if it is available OTC ($p=0.15$), or if EC was "the abortion pill" ($p=1$). There was a statistical significances between the two age groups when asked whether EC is available in the US, ($p=0.01$, 93% vs 99%) (Table 2).

If participants used EC, they were significantly more likely to have discussed it with a HCP ($p<0.0001$). If participants had discussed EC with a HCP, they were more likely to know that it was not "the abortion pill" ($p=0.005$). However, discussing EC with a HCP did not make participants more likely to know that EC was available OTC or directly from a pharmacist ($p=0.29$ and $p=0.11$ respectively) (Table 3).

For women who used EC vs the other participants, there was no statistical significance in knowledge about EC being available OTC (chi-square $p=0.25$) or EC being the same as "the

abortion pill” (chi-square $p=0.03$). Slightly more women in this group did know it was available directly from a pharmacist (Fisher’s Exact Test $p=0.01$).

Discussion

This study did not find much statistical difference between ages, users of EC, or people who had discussed EC with their physician. However, the knowledge in this small sample, as compared to the 2003 KFF survey, seems to have improved. Knowing that EC is available in the US was the only statistically significant result between age groups (18-20 vs 21-25y, $p=0.01$, 93% vs 99%). This is a not a strong difference and since there is not difference in knowing that EC can be obtained directly from a pharmacist or that it is OTC, it seems unlikely that this result is truly reflects a difference in knowledge.

Looking past the difference between groups at the overall numbers, the knowledge about EC is still fairly low. Only about half (59%) knew that EC could be obtained directly from a pharmacist slightly higher than 43% result from four years earlier in the KFF survey. Likewise, only 42% of participants knew that EC could be obtained OTC.

Having discussed EC with a health care provider (HCP) was strongly correlated with using EC and knowing that it was not the same as “the abortion pill.” Still as significant number (11% of those who had discussed EC with their HCP, 24% of those who had not, 20% overall) thought that EC was the same as “the abortion pill.” These results were drastically improved compared to the KFF (50% thought it was the same and 25% didn’t know). The fact that there is any confusion may reflect the general misunderstanding about how contraception works. However, the more education that is done in every venue will go a long way to promote comfort with its use and thereby better compliance.

In general rates of discussion a relatively low –only, 30% recall discussing EC with their HCP. There are many hypothetical reasons for this. One could be that people don’t recall it being mentioned. Interestingly 70% of women who have used EC recall discussing it with their HCP. We did not ask participant from what other sources that had gotten information about EC, but the 30% of women who have used EC and not discussed it with a HCP must have gotten information about it elsewhere and obtained OTC or from a licensed pharmacist. Additional reasons are that this group is young and may not have seen a HCP in several years, HCP may not be routinely discussing EC, or it was referred to by a name other than those used in the survey.

The American Academy of Family Physicians states that “health care professionals have an important role to play in conveying information about emergency contraception.”^{xxi} While studies have shown that women who receive advance prescriptions are more likely to use EC, this has not been shown to lower pregnancy rates.^{xxii} The two related theories for this is are that unprotected sex is a chronic condition and that women choose not to use EC every time it is indicated, even when they have it on hand. The psychology behind the later is hard to separate out, but women may not thinking they are going to get pregnant, if they recently used EC they don’t have to use it again, they are partially covered by another method of birth control, etc. These are just theories at this point because no study as of yet has described these reasons.

This study agreed with previous studies that clinics such as Public Health and Planned Parenthood are the most common access point for EC (59% in this study, 52% in the KFF).^{xxiii} This study found this to be true even when EC is available OTC and directly from a pharmacist. The reason for this was not elicited in our questionnaire, however anonymity at clinics that don’t require insurance and may provide more affordable prescriptions may be reasons why clinics are more commonly used. Additionally, if people perceive clinics as the access point and don’t know

that EC is available OTC or from a pharmacist, clinics will probably continue to be the most common access point. Access data in this young adult population could be inferred to reflect access among teens as well. However, further study is needed to fully assess access and knowledge in people younger than 18.

Summary:

Emergency contraception is a valuable tool in the arsenal of socially, economically, and individually important campaign of family planning. Young adults' knowledge about EC has improved in some areas (availability from pharmacist, OCT, and the distinction between it and RU 486). Despite the change in status to OTC, public health and Planned Parenthood clinics are still the most common access point. Further study to assess the access of individuals <18 years old, actual use when women have EC on hand, and its correlation with conception is recommended. Lastly, HCP should to continue to inform patients about EC to be used as it was intended –as Plan B for when Plan A –a consistent, reliable, birth control method fails.

Appendix

Appendix A

Emergency Contraception Awareness Survey

Adapted from 2003 Kaiser Family Foundation Survey on “Emergency Contraception in California”

Please note: Emergency contraception is also known as Plan B or “the morning after pill”

1. How old are you? _____
2. As far as you know, if a woman has just had unprotected sex or thinks her birth control may have failed, is there anything she can do in the following days to prevent pregnancy?
Yes No
3. As far as you know, is emergency contraception currently available in the US?
Yes No
4. Can women in New Mexico obtain emergency contraception pills directly from their pharmacists without a prescription from a health care professional?
Yes No
5. Can people (men and women) over the age of 18 in New Mexico obtain emergency contraception pills “over-the-counter” at local drug stores?
Yes No
6. True or false: Emergency contraception is the same thing as the abortion pill.
True False
7. Do you approve of the use of emergency contraception in cases of ...
rape or incest? Yes No
birth control failure? Yes No
unprotected sex? Yes No
8. Have you ever discussed emergency contraception with a doctor or other health care professional?
Yes No

Women: Please answer questions 9-12.

Men: Please jump to questions 13-16.

Women's section

9. Have you ever used emergency contraception?

Yes No

10. If "yes", how and where did you obtain the emergency contraception?

How (e.g. doctor's prescription or direct pharmacy access)

Where (e.g. public health office, or name & location of local pharmacy, etc.): _____

11. If you were to use emergency contraception where would you go to get it?

- a. Clinic (like Public Health or Planned Parenthood)
- b. Walk-in appointment with a physician
- c. Call-in prescription from a physician
- d. In advance from a physician
- e. Directly from a pharmacist
- f. Over the counter at a local pharmacy (without a prescription)
- g. From a friend
- h. Other (please write in): _____
- i. Don't know

12. Would you be more likely to use emergency contraception if...

you were informed by a doctor about emergency contraception?	Yes	No
you had emergency contraception at home in advance of needing it?	Yes	No
you could get emergency contraception directly from a pharmacist?	Yes	No
you could get emergency contraception over the counter?	Yes	No

13. Do you know anyone else who has used emergency contraception?

Yes No

Men's section

14. Do you know any women who have used emergency contraception?

Yes No

15. Have you ever told a woman about emergency contraception (e.g. what it does, where to get it, etc.)?

Yes No

16. Have you ever helped a woman obtain emergency contraception?

Yes No

If yes, how did you help? (e.g. by providing transportation to a pharmacy or doctor's office, by purchasing it over-the-counter at a local pharmacy, etc.)

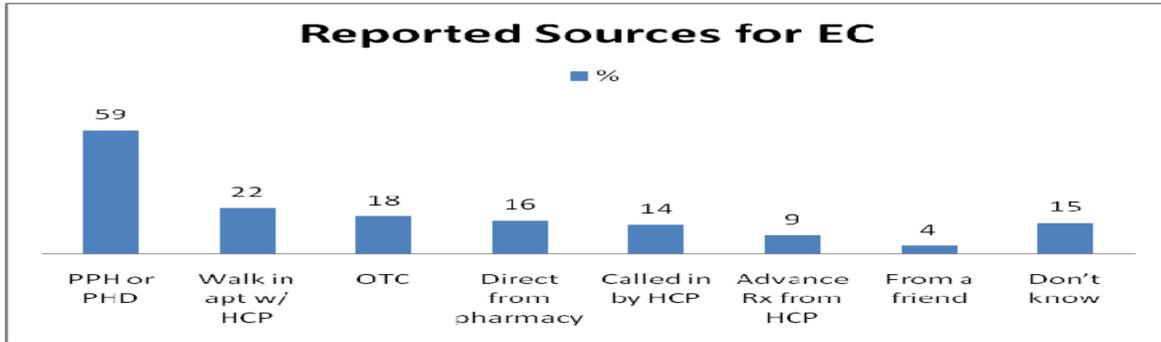
17. If you were to help a woman obtain emergency contraception, where would you go to get it?

- a. Clinic (like Public Health or Planned Parenthood)
- b. Walk-in appointment with a physician
- c. Call-in prescription from a physician
- d. In advance from a physician
- e. Directly from a pharmacist
- f. Over the counter at a local pharmacy (without a prescription)
- g. From a friend
- h. Other (please write in): _____
- i. Don't know

Thank you for completing this survey!

Table 1: Responses to where EC can be obtained (W10 and M16)

Where	PPH or PHD	Walk in apt w/ HCP	OTC	Direct from pharmacy	Called in by HCP	Advance Rx from HCP	From a friend	Don't know
%	59	22	18	16	14	9	4	15



PPH = Planned Parenthood
 PHD = Public Health Department
 HCP = Healthcare provider

Table 2: Knowledge by age (18-20 vs 21-25y)

Question	Chi-square p	Percentages (18-20 vs 21-25y)
2. Can pregnancy be prevented after having unprotected sex?	0.58	94% vs 95%
3. Is EC available in the US?	0.01	93% vs 99%
4. Can you get EC directly from a pharmacist?	0.83	59% vs 58%
5. Can you get EC OTC?	0.15	46% vs 38%
6. EC is the same as "the abortion pill"?	1	20% vs 20% no

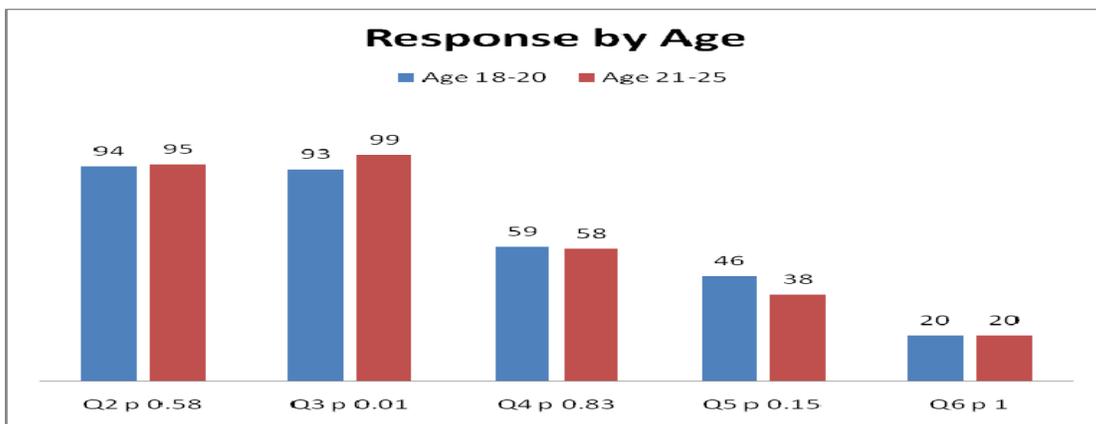
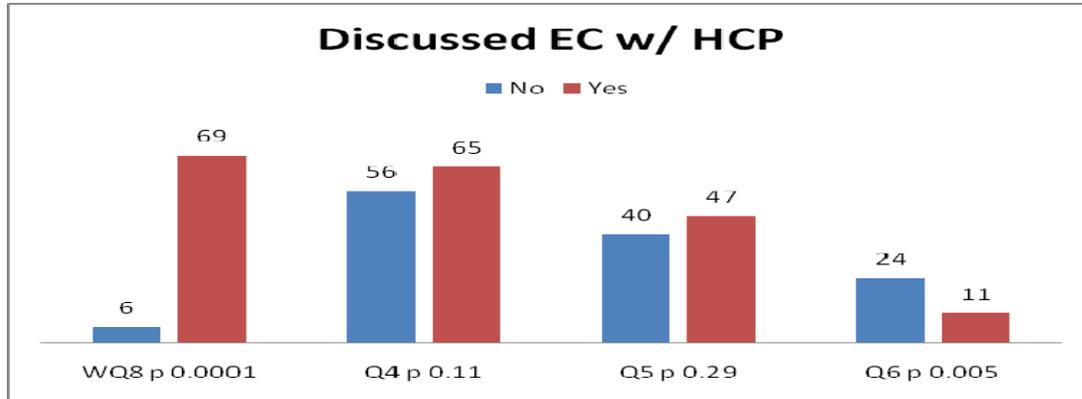


Table 3: Knowledge by discussed with healthcare provider (question 8.)

Question	Chi-square p	Percentages (no vs did discuss)
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W 8. Have you used EC?	0.0001	6% vs 69%
4. Can you get EC directly from a pharmacist?	0.11	56% vs 65%
5. Can you get EC OTC?	0.29	40% vs 47%
6. EC is the same as “the abortion pill”?	0.005	24% vs 11%



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