

UNIVERSITY OF NAIROBI
INSTITUTE OF TROPICAL AND INFECTIOUS DISEASES

EMERGENCY CONTRACEPTIVES KNOWLEDGE, ATTITUDE
AND PRACTICE AT THE KENYA MEDICAL TRAINING
CENTER, KENYATTA.^W

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A Project proposal Submitted In Partial Fulfillment of The
Requirements of The Post-Graduate Diploma of Biomedical Research
Methodology In Tropical and Infectious Diseases (UNITID)

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DECLARATION

I hereby declare that this research project has never been done or presented for any degree/diploma in any University.

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Background: Use of regular family planning is high in Kenya (33%) as compared to other African countries. Despite this, Kenya still has a high fertility rate (total fertility rate 4.85 per 1000 population), which as a consequence has a high number of unwanted pregnancies. Young people engage in unplanned sexual practices, which may lead to unintended pregnancies, and many perform abortions in unsafe conditions, which lead to mortality and morbidity. It has been shown that the use of Emergency contraceptives can reduce the number of unwanted pregnancies and consequently reduce maternal morbidity and mortality related to pregnancy and unsafe abortions. There is a need for the providers to be trained to have KAP on EC in order to provide its widespread usage.

Objective: The main objective of the study was to assess the Knowledge, Attitude and practice of emergency contraceptive use among female students of Medical Training Center, KNH.

Study design: The study design was a cross-sectional survey in form of a self-administered questionnaire in three days.

Study population: These were female students from KMTC, KNH. A total of 335 female students responded.

Method: Three days in a week were consecutively selected to administer questionnaires each day for each year of study. The students who were in the rooms during that evening of study were requested to complete a semi-structured questionnaire.

Data analysis: The open-ended questions were coded and data entered into a computer using excel. The data was summarized appropriately using means and proportions. Data analysis was done using STATA computer package. Appropriate tests of significance (chi-square and P-value at 0.05 significance level) were used.

INTRODUCTION AND LITERATURE REVIEW

Emergency contraception "has been used to refer to specific contraceptives methods that can be used as emergency measures to prevent pregnancy after unprotected intercourse" Case studied of England and Netherlands have shown that emergency contraception may be particularly important for adolescents. Young people, as they establish their sexual identity and contraceptive practice, they are likely to use contraceptives ineffectively and subsequently experience contraceptive failure. For these people, emergency contraceptives may provide a casual safety net in the event of intercourse they did not expect or adequately prepare for as well as bridge to more regular and sustained contraception use (Glassier et al. 1996). It has been shown that among University of Nairobi undergraduate students, 90% of the women who gave birth and 82% of the men who fathered a child, all these pregnancies were unplanned (Rukaria. et al 1992). This is probably consistent with the general finding that most young people who end up pregnant usually do so unintentionally, either due to unawareness or lack of contraceptive advise (Ferguson et al, 1988. Kaihura, 1997). A study on undergraduate female students in two Kenyan Universities found that only 3.6% of the respondents had used emergency contraception (Kaihura. 1997). Another study on nurses and nursing students in Nairobi found that about half of the respondents had heard about emergency contraception and only 3.5% of the respondents had used EC in the past. There was poor knowledge on the time to use, side effects and possible mechanisms of action of EC. Forty nine percent of the respondents viewed EC as abortifacient and this view influenced negatively the desire to use or encourage use of EC (Gichangi, 1999)

Historical perception of preventing pregnancy

Historically women have tried many postcoital methods of avoiding pregnancy such as douching, wiping out vagina with the fingers, violently moving the body to expel semen, coughing, sneezing, inserting pepper, cabbage blossoms seeds and other concoctions into the vagina after intercourse (Rine. 1984)

Unfortunately, many of the substances used are quite noxious and irritating to vaginal mucosa, resulting in tissue injury, scarring and destruction and in some cases systematic effects due to absorption of the materials into the circulation or infection of the genital tract.

It was not until the elucidation of the physiology of reproduction that modern contraceptives were developed each aimed at a specific stage in the sequence of events making up the female reproductive process.

Use of emergency contraceptive

Post-coital contraception is an emergency form of contraception designed to prevent pregnancy within 48 hours of after unprotected coital exposure (Yuzpe. 1984). It is not designed to be used as an on-going method of contraception. Ideally, every woman who is sexually active should be protected from unwanted pregnancy by an acceptable continuing method of contraception and emergency contraception should be reserved for emergency situation only.

Following a single act of unprotected intercourse, the risk of pregnancy varies depending on the time of the menstrual cycle that the intercourse occurs. It is highest during ovulation 30%. at mid-cycle 20% and the other time during the cycle, the risk varies from 0 to 10% (Reader. 1991)

Need for emergency contraceptive agent

Women most commonly seek emergency contraception either because no contraception was used at the time of intercourse or either chosen method failed e.g. a condom breaks; improper insertion of diaphragm; or cervical cap; when IUCD is expelled; pills are lost, forgotten or vomited. Patient error may occur from time to time when using various natural family planning methods. Therefore the need for emergency contraception is not the prerogative of the young and feckless; but it is for all women who are at a risk of becoming pregnant following unprotected sexual intercourse occur. Society should accept that unprotected sexual occurs and will continue to occur regardless of its attitude towards such activity. This is especially true for the young, single women still in high school or college or out of college without a stable

relationship (Lema. 1985. Ferguso. 1988. Rukaria, 1989). The reasons given for non-use of contraceptives are many and include fears of being a lectured on morality as well as refusal of their requests by contraceptives providers especially in many government family planning clinics Rukaria (1989) found that female students did not want to walk long distance or to wait at the family planning clinics. (Rukaria. 1989).

Rape is an increasing social problem in our society. Hardly a day ends before a rape case is reported in the daily papers. The rape victims are usually young girls who are at a risk of getting unwanted pregnancy. So every rape case should be followed by pregnancy prophylaxis where indicated e.g. if she is not pregnant; she is not menstruating or not on contraceptives. The examples cited above all point to the need for accessibility of emergency contraceptives agent, which will function efficiently in prevention of pregnancy when need arises.

Emergency contraceptives methods should be included in our current methods available in family planning clinics. When women visit these clinics for emergency contraceptives, providers should not only deal with immediate problem (pregnancy prevention), but also an ideal opportunity to initiate counseling for that young woman. She then can examine her motivations and attitude to her sexuality and to contraception. Therefore knowledge and availability of emergency contraceptives can increase the prevalence of use and can reduce the number of unplanned pregnancies and give the health professionals that opportunity to encourage and supply an ongoing effective contraception (Webb. Russel. Elsteum. 1992).

Prevalence of contraceptives in Kenya

The rate of family planning has been currently reported to be low (KDHS 2003). Currently, 32% percent of married women use modern methods, while 8% use a traditional method (calendar or rhythm method). As expected, current contraceptive use is higher among sexually active women than among married women and. in turn, among all women. However, current use is highest among sexually active unmarried women (54%). Modern methods are more widely known than traditional methods. (Calendar or rhythm method), while about four in ten know about withdrawal. The least widely known methods are emergency contraception, the female condom, and male

sterilization. About two thirds of all women have heard of periodic abstinence. Contraceptive knowledge is higher among currently married women and sexually active women than among all women. Although knowledge of the male condom is high among all groups of women, it is highest among sexually active, unmarried women (98%) (KDHS. 2003). The Kenya Demographic Health Survey 2003 documented that; the gap in knowledge and practice among the women of reproductive age is most apparent problem.

There is complex relationship between induced abortion and contraception use in prevention of unwanted pregnancies. Reports show that the risk of dying from an induced abortion far exceeds the risk of dying from any method of contraception. (Population Reports July 1980).

Target population

Studies have demonstrated the hazards of pregnancy in schoolgirls especially bearing in mind the discontinuation from school. Ferguson reported that the pregnancy-related drop out rates per year were about 400 female students in the teaching colleges in Kenya (Ferguson. 1989) and 8000 primary and high school girls in 1998. with an increased incidence in drop outs in 1988 from that of 1987 (Ferguson. 1989). Studies have revealed that most of the patients in the hospitals with induced-abortion are young with most commonly aged 20-24 years with high sexual activity; low contraceptive use. Teenagers formed 16.5% with induced abortion. Other workers previously reported figures between 17.5% and 27.5% for teenagers with induced abortion in our set-up (Aggarwal, 1982).

Young people face special barriers to using contraception, including lack of information and knowledge about methods, difficulties in obtaining services from providers who do not want or may not under law serve adolescents, and inability to negotiate with partners (Blanc. 1998). Young people also face higher barriers to access due to limited economic resources, stigma, social structure, lack of communication about adolescent sex, and lack of availability. For example, in Kenya, only 37.3% of the population of married women age 15-19 lives within 30 minutes travel of a source of contraceptives. This forms a strong argument to provide E.C access to youths.

Government policy

Law forbids health workers in Zimbabwe from providing reproductive health services to anyone under 16 years old. and condom distribution is still largely confined to clinics (Stallv, 2003). Kenya also retains a government declaration stating. "Contraceptive should not be made available to unmarried youth and other forms of family-life education programs must not be imparted in Kenyan schools (Bauni, 2000). Regulations of the ministry of Health in Botswana list age and parity as conditions for receiving family planning assistance at a public clinic, health post, or mobile health post. Some family planning services and contraceptives are available to young people through the Botswana Family Welfare Association (BOFWA), a social marketing NGO of the International Planned Parenthood Federation, and Population Services International (PSI), estimated only 10% of young people have access to condoms.

TYPES OF CONTRACEPTIVES

The emergency contraceptive methods are used worldwide. The emergency contraceptives available in Kenya include:

A. HIGH OESTROGEN PILL

Diethylstilbestrol (DES) was the first oestrogen used for emergency contraception (Haspel. 1974. Lehfeldt. 1976). Other studies have been carried out using natural estrogen (ethinyl estradiol) and conjugated estrogen for the same purpose with virtually equal efficacy (Dixon. Morris and Wagen).

Dosage and failure rate

Diethylstilbestrol (DES) 50mg everyday for five days with failure rate of 0.0-2.4%.

Conjugated

Oestrogen. 10mg three times a day for 6 days with a failure rate of 0.0-1.1%.

Ethinyl oestradiol, 5mg everyday, for 5days with a failure rate of 0.0-1.5%. The first dose of each of the above oestrogen must be initiated within 48 hours after intercourse. (Yuzpe 1984)

Side effects

The side effects include; nausea and vomiting, headaches, dizziness, and breast tenderness. The side effects can often be quite incapacitating and hence affect the patient compliance over the five day course therapy. To reduce the frequency and severity of side effects, the oestrogen tablets have been enteric-coated. Use of anti-emetics is also recommended when on oestrogen therapy. There is also an increased risk of ectopic pregnancy with use of high-dose oestrogen for pregnancy interception (Morris and Wagen).

B. COMBINED OESTROGEN AND PROGESTIN PILLS

When used for pregnancy interception then combined oral contraceptive pill is often called "morning after pill" though this name is misleading. The women must take the first dose as soon as possible as long as it is within 72 hours after an act of unprotected intercourse. A second dose must be taken about 12 hours after the first dose (Carol, 1994).

Dosage

The accepted and recommended Yuzpe regimen, a dose consists of 100µg of ethinyl estradiol plus 1.0 mg of norgestrel or 0.5 mg Tevonorgestrel. Two doses are given 12 hours apart and the first dose must be initiated within 72 hours after intercourse. The failure rate of Yuzpe regimen is about 1-2% (1% when the pill is taken correctly) (Max Elstein, 1991).

Side effects

Few side effects are encountered such as nausea, vomiting and headaches. Half the users may experience no side effects. Taking the pill with food or anti emetic helps to avoid these problems.

It is recommended that if a client vomits within 1-3 hours of taking a dose she should repeat the dose (Carol, 1994).

Failure rate

The risk of teratogenicity in case of failure is extremely low and has not been observed in practice since in the studies done all the subjects in whom failure of treatment occurred opted for pregnancy termination as their means of coping with the unwanted pregnancy (Yuzpe, Lauce, 1977).

Contraindications

Both Yuzpe regimen and oestrogen only pills should not be used when absolute contraindications to oestrogen re present. These include pregnancy, angina, transient ischemic attacks, liver disease, undiagnosed genital tract bleeding and history of thromboembolism. Some contraindications to long-term use such as breast cancer and arterial disease are not contraindications for short-term use. (Kucher, 1974).

C. PROGESTIN-ONLY PILL

These may be used as emergency contraceptives for women who cannot use oestrogen and have no contraindications to progestin. This regimen is as effective as Yuzpe regimen and women experience fewer and less frequent side effects (HDPC, Kwan. 1993). The method can also be used as a planned method for women who have very infrequent intercourse.

Dosage

Postinor (Levonorgestrel 0.75 mg) is taken as one tablet for the initial dose within 8 hours after intercourse and one tablet 24 hours later. If a woman has intercourse on subsequent days, she repeats the dose every 24 hours for a maximum of 7 doses (Carol. 1994).

Mechanism of action

Potential actions include alteration or interference with sperm migration or capacitating, tubule transport, fertilization, lacteal function, endometrial activity, implantation of embryonic viability. Ovulation suppression is another potential site of action (HDPC, Kwan. 1993). Progestin agent alone if given in frequent doses may have an effect similar to the progestin-only oral contraceptive agent and a multifocal action is postulated i.e. ovulation suppression, anti-fertility effect upon the endometrium and induction of hostile cervical mucus. Oestrogen like IUCD reduces carbonic anhydrate activity in the endometrium (HDPC. Kwan. 1993).

D. MIFEPRISTONE (RU 486).

It blocks the actions of progesterone: hormones necessary for implantation and maintenance of pregnancy and it has been used as a contraceptive and menstrual regulator as well as abortifacient (Njoroge 1984. Adeleye).

Mifepristone (RU 486) when used as an emergency contraceptive is given as a single dose of 600 mg within 72 hours after coitus. It is more effective in preventing pregnancy than combined oral contraceptive as used in Yuzpe regimen. The 600mg dose is the same dose currently used as part of medical abortion regimen (Peyron. 1993) World Health Organization is investigating the efficiency of mifepristone in much smaller doses. It is clear that if smaller doses are proven to be effective, these could be more acceptable politically in countries where abortion is restricted, in so far as it might hold fears that women will hoard pills to use for medical abortion.

Mifepristone has minimal side effects when used as an emergency contraceptive, which makes it more acceptable.

E. DANAZOL.

This is one of the newer methods. The regimen is two doses of 400mg taken at 12hours interval or 600mg 12hour apart. Regimens involving 3 doses of 400mg each taken 12 hour interval and two doses of 600mg each, taken 12 hours apart have also been investigated (Zulian et al. 1990, Webb et al. 1992) Danazol's advantage are that its side effects are less prevalent and less severe than those associated with Yuzpe method and that it can be taken by women with contraindications to combined pills or estrogens. However, the usefulness of Danazol remains unresolved with some studies showing that it is effective (Zulian et al. 1990) while others shows it does not work (Webb et al. 1992)

F. IUCD

If a woman needs emergency contraception more than 72 hours after unprotected coitus an IUCD is the best option as long as she does not have any contraindication of IUCD use. Insertion should be done within five days of unprotected intercourse.

The copper IUCDs are very effective (Rogo, 1987) in less than 1% of cases. IUCD prevents pregnancy by causing inflammation in the uterine endometrium thus preventing implantation.

IUCD side effects and contraindications are the same during regular and emergency use and insertion follows the same procedure for both purposes.

Contraindications

It is contraindicated to young, nulliparous women with multiple sexual partners and particularly the one with previous history of pelvic inflammatory disease. It is also contraindicated with structural anomalies of the uterus, uterine fibroid, and cervical stenosis, moderate to severe dysmenorrhea or menstrual disturbances.

Conclusion

In Kenya, one of the biggest barriers to the use of emergency contraception is that maybe potential users as well as providers are not aware of its availability and its effectiveness. The method should be popularized among the potential users and the health professionals should be well trained in provision of the method. This will lead to substantial reduction of the number of unwanted pregnancies and hence abortions in our society will be eliminated with all its complications.

RATIONALE.

Young women in colleges of higher learning are known to be sexually active while on the other hand their practice of contraception is quite low. Usually they engage in unplanned, erratic and unprotected sexual intercourse. Although condom would be an ideal method both as contraception as well as for protection against sexually transmitted diseases including HIV infection, the method is unpopular among the students, both female and male.

Majority of these women are single and often opt to postpone family formation until they complete their studies and become employed. As such, any unintended pregnancy is likely to result in an illegal abortion which can lead to mortality and morbidity, drop out of college secondary to pregnancy and early marriage, loss of career opportunities.

therefore, emergency contraception has a role in this target population and can substantially reduce the number of unintended pregnancies and abortions with all its complications.

The Ministry of Health does not have a national policy on the use of emergency contraception. Neither does it have a policy on provision of contraceptives to young adults. There is therefore lack of contraceptive information and services to these young women.

UTILITY OF THE STUDY

This study attempts to determine the Knowledge, Attitude and Practice of emergency contraception usage among young women. It's a need assessment since from the previous studies it has been shown that the KAP is low. The results from this study will evaluate if the strategies implemented in the previous studies have been effective and what more inputs are needed to improve on the KAP of Emergency contraceptives.

RESEARCH QUESTION

What is the Knowledge, Attitude and Practice of emergency contraceptive use among Kenya medical Training Center female students?

GENERAL OBJECTIVES

To determine the Knowledge, Attitude and Practice of emergency contraceptive use among Kenya medical Training Center female students.

SPECIFIC OBJECTIVES

1. Determine knowledge level of emergency contraceptive use among the female students of Medical Training Center, KNH.
2. Assess attitude towards emergency contraceptive use among the female students of Medical Training Center, KNH.
3. Determine sexual behavior patterns among female students of Medical Training Center, KNH.
4. Assess contraceptive practice among the female students of Medical Training Center, KNH.

METHODOLOGY

Study design

Cross-sectional survey was used.

Study population

The study was carried out at Kenya Medical Training Center which is located at Kenyatta National Hospital next to University of Nairobi Medical School. The study participants were female students of Medical Training Center, KNH who were residing in the college at the time of the study and were willing to participate. The total population of all the students both males and females was 3220. The number of female students who reside in the campus hostel was 821.

Sample size

From previous research on knowledge, attitude and perceptions on emergency contraceptive use among undergraduate students was 3.6%.

$$N = Z^2 * pq / d^2$$

Where N is the desired sample, Z is the standard normal deviation (SD) at 95% confidence interval; p is the proportion in the target population estimated to have characteristics being measured = 3.6% d is the level of statistical significance = 0.02. (Olive Mugenda and Gitau Mugenda 1999)

$$\text{Therefore: } N = (1.96)^2 (0.036) (0.964) / (0.02)^2$$

$$= 335$$

335 participants participated in the study.

Sampling method

A stratified sampling method followed by systematic sampling was utilized to obtain representative samples from each year of study.

Sampling procedure

A sample size of 335 was obtained from the population of 821 students. The students occupy the rooms according to their year of study. This sample size was obtained from the three years of study proportionally.

Sampling of the First years

First years occupy 5 dormitories and MG block. Each dormitory has 16 deckers thus accommodating 32 students and there is 1 MG with 14 rooms with 1 decker each and 2 rooms occupied by single bed each. A sample size of 112 students was obtained from the 5 dormitories and 1 MG block.

Sampling from the dormitories

There are five dormitories each dormitory with 16 deckers thus accommodating 32 students. I took 19 students from each dormitory. The students who were in the dormitory during the time of study were allocated numbers and those with even numbers were interviewed.

Sampling from block MG

Seventeen students were sampled from MG by sampling the rooms. The rooms were assigned numbers from 1 through 16 and systematic sampling was administered by taking all the even numbers. The occupants of the sampled rooms were interviewed.

Sampling of second years

The second year students occupy both old and new share blocks. Old share block has 67 rooms and new share has 37 rooms. Each room has a Decker. There are a total of 104 rooms. A sample size 112 was obtained from the two blocks. Sampling of the rooms from each block was done proportionally according to the number of rooms in each of the block. Therefore, 36 rooms was sampled from old share and 20 rooms from new share. Systematic sampling method was utilized by assigning numbers to the rooms and taking even numbers until the number of rooms in each block is reached. The occupants of the sampled rooms were interviewed.

Sampling of third years

The third years occupy East and West block. The total number of rooms in East block is 113 and West block is 182 having a total of 30 rooms in new share all having a single bed. As for the 2nd years, sampling of the rooms from each block was done proportionally according to the number of rooms in each of the block. Therefore, 36 rooms from East block, 60 from West block, and 16 from new share were sampled. Systematic sampling method was utilized by assigning numbers to the rooms and taking even numbers until the number of rooms in each block was reached. The occupants of the sampled rooms were interviewed.

The questionnaires took between 25-30 minutes. The interview was done in the evenings between 6.00-8.00pm. Three evenings were spent to administer the questionnaires each evening for each year. Each roommate filled the questionnaire individually and earnest request not to discuss the questions or look the answers in the journals or books was made.

Inclusion criteria

Any female student at KMTC, KNH and willing to participate was included.

Exclusion criteria

- Any female student at KMTC not willing to participate was excluded.
- Any post-basic, in-service and upgrading female student.

Study instrument

It consisted of a self administered structured questionnaire which had both open-ended and closed ended-questions. It was divided into five sections i.e

- A. Socio-demographic characteristics-age, marital status, year of study and religion.
- B. Sexual behavior.
- C. Knowledge and use of emergency contraception..

D. Attitude of emergency contraception.

E. Contraceptive use.

Data collection

Data collection was done during the month of September, 2007. The interviews were conducted by the principal investigator. I went to each of the chosen rooms and interviewed the occupants. A brief introduction and purpose of the study was given and a written consent to take part in the study was obtained. To maintain confidentiality and anonymity the students filled the questionnaires themselves and were instructed not to enter their names in the questionnaire instead codes were used. The completed questionnaires were collected after about one hour.

The interview was done in the evenings after the student have taken their supper. This evening period was chosen since majority of the students were expected to be in their rooms. However, if a student was not available to fill the questionnaire immediately or will be absent from her room, she was given one hour and if she had not returned by then she was excluded.

TABLE I: Variables

INDEPENDENT VARIABLES	DEPENDENT VARIABLES
Age in years	Knowledge on emergency contraceptive
Marital status	Attitude on emergency contraceptive use
Religion	Contraceptive use
Year of study	Sexual behaviour
Course of study	

Data entry and analysis

The open-ended questions were coded and data entered into a computer using excel. The data was summarized appropriately using means and proportions. Data analysis was done using STATA computer package. Appropriate tests of significance (chi-square and P-value at 0.05 significance level) were used.

Study limitations

The limitations experienced were limited time and students not available in the rooms. To overcome these limitations I spent three hours each day of administering questionnaires instead of two hours as written before. This made me to wait for the students an extra hour.

Ethical considerations

- The study was approved by the Ethical Review Committee of University of Nairobi.
- Permission to carry out the study was obtained from the departmental research committee, hospital ethical and research committee and the director of the Kenya Medical Training Center. KNIT.

A written consent form was obtained from the participants and they were requested to sign.

Confidentiality was maintained on any information obtained from the participants and will be used only for research purposes.

Names were not included instead codes were used.

RESULTS

\ total of 335 female KMTC students were recruited .

Demographic profile of the respondents

Table 1: A summary of general characteristics of the study population

characteristics	Number=335	Percentage
Age in years		
Below 19	50	14.9
20-24	220	65.7
25-above	65	19.4
	p=0.05	
Marital status		
Single	290	86.6
Married	40	11.9
Divorced	2	0.6
windowed	3	0.9
	p=0.05	
Year of studv		
First	112	33.4
Second	112	33.4
Third	111	33.2
	p=0.05	

A total of 335 female KMTC students completed the questionnaire. Most of the respondents were between the ages of 20-24 years, 65.7% (220/335). The mean age of the students was 22±1.5.

Sixty percent (201/335) of the respondents were Protestants with Catholics making 30.1% (101/335) of the population. Muslims were 7.7% (26/335), 1.7% (6/335) did not belong to any religion and 0.5% (2/335) of the respondents did not indicate their religious affiliations.

qual population was sampled proportionately from the three years of study to avoid bias.

SEXUAL behaviour

Table II: PAST SEXUAL BEHAVIOUR

Sexual experience	Number=335	Percentage
Has had sexual experience	280	83.6
Has not had sexual experience	55	16.4
I Total	335	100

$\chi^2 = 0.0045$ $DF=1$ $p= 0.67231$

From the table II above only 83.6% of the students reported that they had had previous sexual experience.

SEXUAL BEHAVIOUR AMONG THE SEXUALLY EXPERIENCED STUDENTS.

Sexual Behavior	Number=335	Percentage
Duration since last sexual contact		
< 1 week	22	6.6
3-4 weeks	115	34.3
2-6 months	100	29.8
>6 months	98	29.3
	$\chi^2 = 0.10654$ $DF= 1$ $P=0.53190$	
Number of sexual partners in the last one year		
1	190	56.7

1*2	110	32.9
3	30	8.9
>3	5	1.5
$X= 1.4587$ $DF= 1$ $p=0.3467$		

The mean age at menarche for all the students was 15.2 with range of 10-17 years.

The mean age at First intercourse for sexually experienced students was 18.7 years with a range of 13-25 years.

Majority 310 (92.5%) of the sexually active students never plan for sexual activity.

A total of 257 (76.%) sexually experienced students had never been pregnant. Of these, 7.8% (20) were pregnant at the time of the survey, while 85.6% (200) had had a pregnancy that resulted in a delivery, 7.8% (20) had had an induced abortion and 6.6% (17) had had a spontaneous abortion.

Table III: CONTRACEPTIVE USE

Contraceptive use	Number=335	Percentage
Ever use		
Yes	100	29.85
No	235	70.15
	$X= 0.00045$ $df=1$ $p=0.8760$	
Current use		
Yes	77	22.9
No	258	77.01
	$X, -1.4390$ $df =1$	

P= 0.31879

Majority of the students (70.15%) had never used contraceptive method and only 22.9% are currently using a contraceptive method.

Table IV: SPECIFIC CONTRACEPTION CURRENTLY BEING USED

Contraceptive Method	Number=77	Percentage
Pill	30	38.9
Injectable	23	29.9
Condom	16	20.8
postinor	5	6.5
Norplant	2	2.6
Intrauterine device	1	1.3

Table IV shows the specific methods currently being used. The pill was the commonly used method (38.9%) followed by injectable (29.9%) then Condom (20.8%) and postinor (6.5%). Other methods currently used were Norplant (2.6%) and IUCD (1.3%) though very few practiced it.

Table VII: REASONS GIVEN FOR NOT CURRENTLY USING A METHOD

REASON	NUMBER=258	PERCENTAGE*
Infrequent sex	150	58.1
Fear of side effects	37	14.3
Use of safe days	23	8.9
Does not see the need	8	3.1

Against religion	22	8.5
Pregnant	20	7.8
Want to get pregnant	18	7.0
Against morals	15	5.8

* Percentage adds to more than 100% because some students gave more than one reason.

Majority- of the students (46.5%) currently not on contraception, method said they had infrequent sexual intercourse and hence did not need to use contraceptives. Table IV shows some of the other reasons given for none use of contraceptives.

In response to whether the contraception method used prevented pregnancy, 98.5% of the users did not become prevent while on the method. Only 1.5% of respondents reported failure of the method.

KNOWLEGDE OF EMERGENCY CONTRACEPTION

TABLE V: RESPONSE TO WHETHER THERE ARE SOME METHODS OF CONTRACEPTION THAT CAN BE USED TO PREVENT PREGNANCY FOLLOWING UNPROTECTED SEXUAL INTERCOURSE.

Response	Number=335	Percentage
Yes	250	74.6
No	20	6.0
I don't know	65	19.4

X= 17.96

df=2

P=0.002

The table above shows the frequency distribution of the response chosen by the students regarding the existence of emergency contraceptive methods. Majority (74.6 %) of the students indicated that there exist emergency contraceptive methods whereas only 19.4% did not know the correct response.

TABLE VI: KNOWLEDGE OF EXISTENCE OF EMERGENCY CONTRACEPTION

N=250

Method	Frequency	Percentage*
Posinor	137	54.8
Morning after pill	60	24.0
Intrauterine device	22	8.8
Condom	52	20.8
Injectables	20	8.0
Safe days	40	16.0
Others	4	1.6

* Percentages add more than 100% because some respondents mentioned more than one method.

The students with some knowledge regarding postcoital contraceptive were asked to name some methods they knew and when (timing) these methods should be used. Table VI above shows the frequency of some methods mentioned. Morning after Pill, postinor and IUCD were mentioned as the correct postcoital methods with frequency of 24.0% 54.8% and 8.8% respectively. Some students thought condoms, injectables and safe days could be used as postcoital methods as well.

specific knowledge about emergency contraception use was poor among the respondents. Knowledge of the correct time limit for EC use was poor, 65.7% (97/132) of those familiar with postinor knew that it should be used within 72 hours. 14.6% (20/137) gave the wrong response while 14.6% (20/137) did not give response. 33.3% (20/60) of those respondents familiar with morning after pill gave 72 hours as the correct time to use, 50.0% (30/60) gave the wrong timing of morning after while 16.7% (10/60) did not give any response. Intrauterine contraceptive device was listed by 8.8% (22/250) of the respondents. Only 22.2% (5/22) mentioned that it should be used within 72 hours after unprotected sexual intercourse, 68.2% said the wrong timing while 9.1% gave no response.

52 respondents listed condoms as an emergency contraception while injectable contraceptive methods could be used as emergency contraception. The following were listed once as methods of EC: barrier, spermicides, diaphragm, and dilation and curettage. It is certain from the foregoing that all aspects of knowledge about EC were very poor.

ATTITUDE ON EMERGENCY CONTRACEPTIVES

A total of 47.8% of the students indicated that emergency contraception should be easily available to single girls to prevent unintended pregnancy and indeed 46.2% said they would use or recommend their friends to use emergency contraception if it was provided at their college health clinic. A total of 53.8% said that they would not use or recommend their friends to use emergency contraception if it was introduced in their college health clinics.

**Table VIII: REASONS FOR NONE USE OF EMERGENCY CONTRACEPTION
INTRODUCED IN UNIVERSITY HEALTH CLINICS**

N=179

Reasons	Frequency	Percentage*
Religion	27	15.1
Is equivalent to abortion	64	35.6
Encourages promiscuity	43	24.0
Side effects	49	27.4
Others	6	3.4

*Percentages add more than 100% because some respondents gave more than one reason.

A total of 15.1% said they would not use this method of contraception because it is against their religion. 35.6% said it is equivalent to abortion. 24% said it will encourage promiscuity while 27.4% said it has many side effects and therefore it should not be used.

DISCUSSION

Emergency contraceptives (EC) are methods that a woman can use after intercourse to prevent pregnancy. EC are sometimes called post-coital or morning after pill. The term 'morning after pill' is misleading because it implies that a woman must wait until the morning after or they will be too late if they can not obtain treatment until morning or the morning after unprotected coitus. Emergency contraception is therefore preferred term.

Levonelle/Tendy. Several methods of EC are safe and effective. These includes two tablets of ethinyl-estradiol/levonogestrel oral contraceptives given twice, 12 hours apart, levonogestrel alone, mifepristone and insertion of copper intrauterine devices (IUCD). The regimes avert approximately 75 to 99% of the pregnancies expected among women seeking treatment (Trussel et al 1998). Existing regimens are usually inexpensive, often consist simply of altered doses of widely available medications and have been used for decades in some countries. In Kenya regular contraceptives have been in use for a long time and are quite popular (Kenya Demographic Health Survey 1993). EC as a method is not popular in Kenya

My results were obtained from self-administered questionnaire among 335 KMTC students. Religion is one factors influencing behavior and in this study 60% of the respondents were Protestants with Catholics making 30.1% of the population. Muslims were 7.7%. 1.7% did not belong to any religion and 0.5% of the respondents did not indicate their religious affiliations. The mean age of the students was 22 ± 1.5 . 86.6% of the respondents were single. Studies on woman's self-reports of recent oral contraceptive use have shown high reliability (Rosenberg et al 1983, Coulter et al 1986). As it is unlikely that many respondents would have forgotten about their use of emergency contraception (EC).

The year of study seemed to influence the level of knowledge of EC with first years 48.2%, second years 65.5 % and third years 88.5% having the correct knowledge.

The mean age at menarche for all the students was 15.2 with range of 10-17 years. This agrees with other studies done in post-secondary school institutions in Kenya (6,23,25).

The mean age at first intercourse for sexually experienced students was 18.7 years with a range of 13-25-years. Majority of the students were sexually experienced with 83.6% those who had had sexual intercourse and 34.3% had had sexual intercourse in the previous one month. In 1983, Kaihura found that 52% of the undergraduate female students (Nairobi University) were sexually experienced and 31% had had sexual intercourse in the previous one month. Majority 56.7% had only one sexual partner, 32.9% had two sexual partners and only 1.5% had more than three sexual partners in the twelve preceding months.

Although a high proportion of students were sexually active, only 22.9% were currently practicing some form of contraception. This was much than 59.5% reported by Rukaria in Nairobi University in 1989. From the foregoing, it is clear that many students in college are engaged in unplanned erratic and unprotected sexual intercourse quite often with multiple sexual partners. This has resulted in high pregnancy rate in this population.

A total of 257 (76.%) sexually experienced students had never been pregnant. Of these, 7.8% (20) were pregnant at the time of the survey, while 85.6% (200) had had a pregnancy that resulted in a delivery, 7.8% (20) had had an induced abortion and 6.6% (17) had had a spontaneous abortion.

58.1% of the students not on contraceptive method said they had infrequent sex, 14.3% feared the side effects of contraceptives, 8.9% said that they used safe days while 8.5% said they were against religious affiliation. Other reasons given were did not see the need, some wanted to be pregnant, some were pregnant during the time of study and it was against morals to some.

Overall 74.6 % of the respondents had heard of EC. The level of knowledge was higher than of nursing students from Nairobi Hospital (66%) found by Gichangi, 1999.

Over 65% of the respondents listed more than three contraceptive methods indicating high level of knowledge of regular contraceptive methods. Emergency contraception was listed spontaneously with postinor (a brand of levonogestrel) most known by those familiar with EC. Postinor was listed by 54.8% of the respondents. Morning after pill by 24.0% intrauterine device by 8.8% and 20.8% listed condom as an EC. A third of the

respondents familiar with EC said that morning after pill, postinor and intrauterine device could be used within 72 hours of unprotected sex. None of the respondents mentioned the use of intrauterine device as an EC method up to 5 days and before 7 days.

Many studies have documented that the younger people especially single women are more likely to use contraceptive methods erratically or not to use at all (Glassier et al. 1992). This group of women is more likely to have unplanned sexual intercourse and experience contraceptive failure which can result in unintended/unplanned pregnancies. Availability of EC is particularly important for these women because in the event of unintended conception, an induced abortion would be a more probable option than a pregnancy or childbirth. A study on unintended pregnancy showed that 47% of unintended pregnancies ended in abortion (Henshaw 1998, Mosher 1998). EC can therefore be used to avoid pregnancy and thereby reduce the consequences of abortion. Avoidance of abortion could reduce the needless death and suffering as well as the pressure on hospital beds, nursing staff, blood supplies and medications needed to treat the life threatening medical complications of abortion performed under unsanitary conditions.

The economic benefits of availability of EC to reduce unintended pregnancy and subsequent abortions that is most likely to be criminal in Kenyan set up, are enormous. It has been shown that provision of EC in America at a cost of 59 US dollars would help avoid 210 US dollars in pregnancy care costs. Advance supply to women who use less reliable methods like barrier contraceptives, spermicides, withdrawal or periodic abstinence can result in annual cost savings ranging from \$268 to \$498 per patient (Slonick 1997). Other studies have confirmed the enormous cost of caring for abortions (Brown and Eisenberg 1995). Criminally induced abortion is associated with high morbidity and mortality and also infertility. Unprotected or unplanned sexual intercourse can also have serious psychological consequences. Thought of the possibility of pregnancy after unprotected sex can be quite depressive and distressing. It is possible that much of psychic trauma experienced by women who has had unprotected coitus, waiting to see if her next menses will arrive on time, could be avoided with use of an effective post-coital method (Haspels 1994). Wide spread availability and use of EC could therefore

Contribute directly to the improvement of women's health. This would go along way in achieving WHO (1998) reproductive health objective of reducing maternal morbidity and mortality.

Most of the respondents (74.6%) perceived their inadequacy of knowledge about EC and expressed the need for more information on mode of action, dosage regimens, indications and side effects as well as treatment of side effects. The concerns expressed by the respondents are very much similar to those expressed by medical care providers who were currently providing EC (Crook et al 1998). In the Crook et al 1998 study, most of the providers expressed the need for in-service training with topics on modes of action, how to prescribe (dosages), contraindications, efficacy, safety, side effects, treatment of Side effects and material for patients.

Attitude of the users of EC is very important. A total of 15.1% said they would not use this method of contraception because it is against their religion. 35.6% said it is equivalent to abortion. 24% said it will encourage promiscuity while 27.4% said it has many side effects and therefore it should not be used. A total of 47.8% of the students indicated that emergency contraception should be easily available to single girl to prevent unintended pregnancy and indeed 46.2% said they would use or recommend their friends to use emergency contraception if it was provided at their college health clinic. A total of 53.8% said that they would not use or recommend their friends to use emergency contraception if it was introduced in their college health clinics.

CONCLUSIONS.

1. Majority (83.6%) of the students were sexually experienced and 34.6% had had sexual intercourse in the last 3-4 weeks.
2. Although a high proportion of students were sexually active, only 22.9% were currently practicing some form of contraception.
3. About half of the respondents had heard about emergency contraceptives.
4. Pill (38.9%) was the most currently used contraceptive.

- 5 There was **poor knowledge on time to use, side effects and possible mode of action.**
- r> The **most known EC method was postinor.**
7. 35.5% view **that EC is abortifacient. This view was negatively influencing the desire to use. provide or encourage the use of EC.**
- 8 **Religious affiliations had minimal influence on the desire to use or provide the method.**
9. **From the foregoing, it is clear that there is need to educate the students on the emergency contraception method which should be made available to those who may want to use it.**
10. **Emergency contraception is under utilized in Kenya. This situation might remain so unless efforts to improve the knowledge and misconceptions of potential providers are improved.**

RECOMMENDATIONS

1. **Reproductive health education should be taught in secondary and post-secondary school institutions where human reproductive biology and contraception should be discussed. This will sensitize the youth to their own health needs.**
2. **Emergency contraception should be popularized among potential users like college students. This can be done through the media, seminars, and video shows etc. It's increase can lead to a reduction in the rate if unintended pregnancies and hence abortions among the students.**
3. **Advocacy and information/education/communication (IEC) activities about emergency contraception should be strengthened and materials provided.**
4. **Emergency contraception should be made available to all training colleges and to all women who seek it provided no contraindications are present.**
5. **Training in emergency contraception should be included in curricular of all medical and non-medical personnel who will be involved in health care delivery. Training should include counseling as well as methods-specific service requirements, including treatment regimens of side effects and proper follow up.**

- **Hormonal** emergency contraception is appropriate for distribution through many **channels** including clinics, over the counter in pharmacies and community based **programs**.

INTERVENTIONS PLANNED

Lectures on EC are planned to all KMTC students. KNH.

2. More information will be provided in form of handouts.

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APPENDIX 1

QUESTIONNAIRE

SERIAL NO. _____ DATE _____

. SOCIO-DEMOGRAPHIC CHARACTERISTICS

Age in completed years _____ Yr.

1. In what year of study are you now? ()
 What type of course are you taking? ()

- What Is Your Marital Status?

(a) Single ()

(b) Married ()

; c) Divorced ()

id) Widowed ()

5. What Is Your Religion? (Please Tick One)

(a) Catholic ()

(b) Protestant ()

(c) Muslim ()

(d) Others (specify)

B. SEXUAL BEHAVIOUR

6. At what age did you start menstruating?

7. i a) Have you ever had sexual intercourse? (Tick one)

Yes ()

No ()

8. (b) If yes to Q.7 (a), at what age did you have your first sexual intercourse?

. Year

When was your last sexual contact? Please tick one answer.

(a) Within this week ()

(b) 3-4 weeks ago ()

(c) 2-6 months ago ()

(d) More than 6 months ago ()

Last time you had sexual intercourse, did you plan or did it just happen?

(a) I planned ()

(b) I did not plan ()

i How many sexual partners have you had in the last?

(a) One year ()

(b) 3 months ()

(c) 1 month ()

(d) One week ()

12. Have you ever been pregnant? Tick one answer

(a) Yes ()

(b) No ()

13. If yes to Q. 12 above;

a. How many deliveries have you had?

b. How many abortions have you had?

- Were they Induced or spontaneous?

C. KNOWLEDGE AND USE OF EMERGENCY CONTRACEPTION.

14. Are there some methods of contraception that can be used to prevent pregnancy

following unprotected sexual intercourse? Tick one answer.

(a) Yes ()

(b) No ()

(c) I do not know ()

15. If yes to Q. 14 above, fill in the table below.

Method	When it should be used (timing)

!i your friend had unprotected sexual intercourse and she did not want to become Pregnant, what advice would you give her?

For a method to be useful as an emergency (postcoital) contraceptive it must be used (Tick one answer)

- a) Anytime after the unprotected sexual intercourse ()
- b) As soon as possible after the unprotected sexual intercourse and before five days after the unprotected sexual intercourse. ()
- c) After the first missed period ()
- d) Others (specify)___

\$ Regarding emergency (postcoital) contraception (tick yes or no)

- a) It causes some health risk to the user
Yes () No ()
- b) It is generally safe and quite effective if used correctly
Yes () No ()

19. Have you ever used any method of emergency (postcoital) contraception? Tick one answer.

- (a) Yes () (b) No ()

20. If yes to Q.19 above, which one (s)?

D. ATTITUDES ON EMERGENCY CONTRACEPTION

21. What is your opinion on the use of emergency (postcoital) contraception?

(Tick yes or no as appropriate)

- | | Yes | No |
|--|-------|-------|
| a) Should be limited to married women for spacing. | () | () |
| b) Should be easily available to single girls to prevent | | |

- unintended pregnancy. () ()
- c) **Should not be used at all.** () ()
- d) **Others (specify)**

1 If emergency (postcoital) contraception provision was introduced in your college health clinic, would you use it or would you recommend your friend use it, if necessary? (Tick one answer)

- a) **Yes** ()
- b) **No** ()

1: If no to Q. 22 above, give reason (s)

L CONTRACEPTION USE

24. Have you ever used any contraceptives? Tick one answer.

- a) **Yes** ()
- b) **No** ()

25. If yes to Q. 24 above, which contraceptives have you ever used!'

26. Are you currently on any contraceptive method? Tick one

- a) **Yes** ()
- b) **No** ()

27. a) If yes to Q. 26 above, which one?

28. What are the reasons for not currently using any method of contraception ?

29. Did the method you used prevent pregnancy ?

30. a) Does the college health clinic offer contraceptives to students: Ti

i) Yes ()

ii) No ()

b) If you wanted to get some contraceptives, whom would you go to? Tick one.

i) College health clinic ()

ii) Private doctor/clinic ()

iii) Government family planning clinic ()

iv) Friend ()

v) Other (specify)

THANK YOU FOR TAKING PART IIS THIS STUDY.

APPENDIX 2

CONSENT FORM

Hello. My name is KIOKO ROSALIA. I am a student in University of Nairobi undertaking postgraduate diploma in biomedical research methodology in tropical and infectious diseases. I am conducting a study on the Knowledge, Attitude and Practice of Emergency contraceptive use among Students in Kenya Medical Training Center (KMTC), Nairobi. I would very much appreciate your participation in this study. I would like to ask you some questions about emergency contraception. This information will be only for academic purposes. The study usually takes between 25 and 30 minutes to complete. My contacts are 0725-072 018 or P.O Box 9963, Nairobi.

Consent Information

- i) Your participation in this study is voluntary and you are free to refuse to participate in it without affecting your studies.
- ii) You are free to withdraw from the study at any level without penalty.
- iii) The selection of your participation in the study is based on no other reason apart from having been a female student in the KMTC during the time of study.
- iv) We may ask you a few questions that may cause you to feel embarrassed such as how many sexual partners do you have?
- v) There will be neither monetary nor material benefit that will be given to you in return to your participation in the study.
- vi) Ethics Review Committee of Kenyatta National Health that safeguards the interest of the research subjects has approved the study.
- vii) All information collected during this research will be held in strictest confidence and no identifying information of any kind will be released to any other person or agency without your specific consent. Only the investigator will have access to information that can be used to identify you. However the consent form and the link between your

name and the code will be destroyed as soon as all data entry is completed.

Please feel free to ask any additional question concerning the study at any point.

In case of any questions arising from the conduct of this study or any information that has not been explained to your satisfaction about the study and you need to contact an autonomous body, please feel free to contact; The Secretary. Kenyatta National Hospital-Ethics Review Committee (KNH-ERC), P.O. Box 20723, Nairobi, Tel: 726300-9.

Signature of investigator

Date

Participant's statement:

The study described above has been explained to me. I voluntarily consent to participate in this activity. I have had an opportunity to ask questions.

Signature of participant

Date

Copies to: 1. Participant

2. Investigator's file

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