Knowledge, Attitude and Practice of Emergency Contraceptive Pills among Tertiary level students in Trinidad: A Cross-sectional Survey

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ABSTRACT

Objective: *The objective of this study was to estimate the general knowledge, attitude and practice of Emergency Contraceptive pills (ECs) among tertiary level students in Trinidad.*

Method: *A 32-item questionnaire was constructed to assess knowledge, attitudes and practice of EC. There were 76 medical and 160 non-medical students who volunteered to fill-up the questionnaire. This survey was conducted by graduate students under supervision of the Department of Mathematics and Computer Science, UWI, St Augustine.*

Results: *Eighty-four per cent of the students were less than 25 years of age, 64% were Christians and 92% were single. Sixty-three per cent were female and there were more females in the non-medical group than the medical students group but the numbers were not significant. Eighty-one per cent used condoms as the main type of contraception.*

*Only 63% had heard of ECs before and only 9% had heard of ECs from medical sources. Among the factors that related to attitude towards EC, only two factors were significant. Sixty-two per cent of students felt that increased EC use would increase promiscuity (*p = *0.013) but 59% also felt that ECs should be made more easily available (*p = *0.014).*

Conclusion: *The general level of their knowledge about ECs was poor. The general attitude of students towards ECs was positive. This study will help policy-makers by providing evidence-based knowledge to promote EC use among university students.*

Keywords: Attitude, emergency contraception, knowledge, practice

Conocimientos, Actitudes y Práctica de las Píldoras Anticonceptivas de Emergencia entre Estudiantes de Nivel Terciario en Trinidad: un Estudio Transversal

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RESUMEN

Objetivo: *El objetivo de este estudio fue evaluar de manera general los conocimientos, actitudes y prácticas en relación con las píldoras anticonceptivas de emergencia (PAE) entre estudiantes de nivel terciario en Trinidad.*

Método: *Se diseñó una encuesta de 32 puntos con el propósito de evaluar los conocimientos, actitudes y prácticas de la anticoncepción de emergencia (AE). Hubo 76 estudiantes de medicina y 160 de otras carreras que se ofrecieron voluntariamente para responder la encuesta.*

Resultados: *El 84 por ciento de los estudiantes tenían menos de 25 años de edad, el 64% eran cristianos, y el 92% eran solteros. El 63 por ciento eran hembras y había más hembras en el grupo de estudiantes no médicos que en el grupo de estudiantes de medicina, pero las cifras no fueron significativas. El 81 por ciento usaban condones como tipo principal de contracepción. Solamente un 63% había oído de las PAEs y sólo el 9% había oído de las PAEs a partir de fuentes médicas. Entre los factores relacionados con las actitudes hacia las PAEs, sólo dos factores fueron significativos. El 62 por ciento de los estudiantes sentían que un aumento en el uso de la AE equivaldría a un aumento de la promiscuidad (*p = *0.013), pero el 59% también tenía la percepción de que las PAEs debían estar*

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*más fácilmente al alcance de todos (*p = *0.014).*
***Conclusión:** En términos generales, el nivel de los conocimientos de los estudiantes sobre las PAEs fue en términos generales pobre, Su actitud general hacia las PAEs fue positiva. Este estudio ayudará a quienes tienen a su cargo el trazar políticas, brindándole conocimientos basados en evidencias, a promover el uso de PAEs entre los estudiantes universitarios.*

Palabras claves: Actitud, anticoncepción de emergencia, conocimientos, práctica

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INTRODUCTION

Many misconceptions and misunderstandings abound regarding Emergency Contraceptive (ECs) pills. One of these misconceptions is that EC can be used only the day after unprotected sex. Multicentre, randomized control studies found that the sooner the first dose was taken, the greater the effectiveness. The failure rate at 72 hours after hormonal EC is approximately 4% which increases to 10−50% at five days (1−3). Recent Studies have even confirmed that it is effective up to 120 hours (4). A World Health Organization (WHO) multicentre randomized trial found that a single low dose of mifepristone, the single- and the two-dose regimens of levonorgestrel are equally efficacious as emergency contraception (5).

There is also concern that EC is often confused with the "abortion pill", RU-486. The emergency contraceptive pill cannot terminate a pregnancy once it has begun and is not an abortifacient. The WHO agrees that pregnancy begins at implantation and therefore neither form of EC can be considered an abortifacient (6). The exact mechanism of action of EC is unknown. A review article reveals that ECs may act by interference with tubal transport of sperm, egg or embryo or by histological or biomedical changes within the endometrium that may result in failure of implantation (7). This uncertainty regarding the mechanism of EC causes many of the misconceptions.

According to the WHO, levonorgestrel has no medical contraindications (8). Nausea occurs in 30−60% of clients using combined EC pills. It may occur after either dose of medication and tends to last no more than two days. The incidence and severity of nausea and vomiting decrease when anti-emetic agents are taken one hour before the first EC dose (9). However, there are no documented long term effects of using ECs. Hormonal emergency contraceptives can be offered at any time during the menstrual cycle and even twice in a given cycle, should the need arise (10).

The two types of EC pills, the progestin-only method and the combination method (ethinyl estradiol and a progestin), are available in Trinidad and Tobago through prescription. This survey was conducted among tertiary level students in Trinidad to measure their awareness and knowledge of ECs. There is a concern that although young people know about EC, they perhaps are not clear about its mechanism of action, how it works, its contraindications and the time frame for use. A university population is an optimal group to investigate the effects of awareness campaigns because of their age and educational status. Pursuing a degree could also be a reason for them to delay childbearing. They are also an optimal group because if their knowledge is poor then we can assume that the rest of the population will be even more ignorant. However, if they know about ECs, this does not guarantee that the rest of the population, who probably need it more, know about it. The aim of the study was to identify differences in knowledge, attitudes and practices about EC that would provide a better understanding of how to customize family planning awareness programmes.

SUBJECTS AND METHODS

This was a cross-sectional survey conducted amongst a convenient sample of 236 students studying at The University of the West Indies, St Augustine, Trinidad and Tobago, over a three-week period in the months of March and April, 2009. A 32-item questionnaire was constructed to assess knowledge, attitudes and practice about EC, based upon a review of literature and similar studies conducted elsewhere. The questionnaire, besides compiling a limited socio-demographic profile, asked questions with yes, no and don't know options. Knowledge of EC was assessed through five questions that reflected common misconceptions regarding effectiveness, availability, safety and mechanism; attitudes were assessed through 10 questions with yes and no options that reflected common deterrents to EC use and practice was assessed through another five questions that reflected common misconceptions regarding EC use.

The questionnaire was given to willing students who completed and returned the forms to the conductors. No names or other identifying information were included on the self-administered questionnaire to assure anonymity.

The survey data were entered into a database. Frequencies and descriptive statistics were calculated using SPSS 12.0 (Chicago, IL) and R 2.7. There were 76 medical and 160 non-medical students who volunteered to fill up the questionnaire. Univariate analysis was performed by using logistic regression.

RESULTS

The socio-demographic characteristics of the respondents are shown in Table 1. The questionnaire had 62.3% female respondents and 37.7% male respondents. There were more females in the non-medical group than the medical group of

Table 1: Sociodemographic characteristics of tertiary students

Covariates		Medical	Non Medical	Total
Age in years	< 25	71	127	198
		30.1%	53.8%	83.9%
(Mean age	> 25	5	33	38
22.45 ± 5.58 yrs)		2.1%	14.0%	16.1%
Sex	Male	32	57	89
		13.6%	24.2%	37.7%
	Female	44	103	147
		18.6%	43.6%	62.3%
Ethnicity	African Decent	14	66	80
		5.9%	28.0%	33.9%
	East-Indian Decent	44	52	96
		18.6%	22.0%	40.7%
	Mixed	18	42	60
		7.6%	17.8%	25.4%
Religion	Christian	40	111	151
		16.9%	47.0%	64.0%
	Hindu	17	20	37
		7.2%	8.5%	15.7%
	Muslim	14	6	20
		5.9%	2.5%	8.5%
	Other	5	23	28
		2.1%	9.7%	11.9%
Marital Status	Single	72	146	218
		30.5%	61.9%	92.4%
	Married	4	14	18
		1.7%	5.9%	7.6%
What is your major form of Contraception	Condom	66	125	191
		28.0%	53.0%	80.9%
	Pills	5	30	35
		2.1%	12.7%	14.8%
	IUD/Others	5	5	10
		2.1%	2.1%	4.2%
Have you ever heard of EC*	Yes	51	98	149
		21.6%	41.5%	63.1%
	No	25	62	87
		10.6%	26.3%	36.9%
How did you learn about EC	Media/Internet	30	35	65
		12.7%	14.8%	27.5%
	Friends/Spouse	19	61	80
		8.1%	25.8%	33.9%
	Medical/Para-medical/ pharmacist services	4	17	21
		1.7%	7.2%	8.9%
	Other sources/Not remember	23	47	70
		9.7%	19.9%	29.7%
Where can ECs be obtained	Pharmacy/Drugstore	50	105	155
		21.2%	44.5%	65.7%
	Friends/ Partner /others	2	9	11
		.8%	3.8%	4.7%
	Medical Personal	11	19	30
		4.7%	8.1%	12.7%
	Don’t know	13	27	40
		5.5%	11.4%	16.9%

*EC = Emergency contraceptives

students. The mean age of respondents was 22.45 ± 5.58 years. Although respondents ranged in age from 17 to 51 years of age, 83.9% were less than 25 years of age. There were 40.7% of students of East Indian descent, 33.9% of African descent and 25.4% of mixed ethnicity. The majority of students were Christian (64%) and single (92.4%) and 80.9% of students stated that they used condoms as their main form of contraceptive with 53% of them being non-

medical students. Of the total, 63.1% said that they knew about ECs but only 8.9% said that they had heard about the EC from medical, paramedical and pharmacist services, while the rest claimed that they knew about EC through media, internet, friends, spouses, and other sources and 65.7% knew that ECs were available from the pharmacy.

Table 2 shows the responses to questions regarding knowledge, attitudes and practices of EC. There were 95.5% of students who did not know whether ECs were 100% effective in preventing pregnancies; 87.6% did not know that ECs do not terminate pregnancy if the woman was already pregnant; 91.4% thought that ECs were available by pres-

Table 2: Univariate analysis of knowledge, attitude and practice

Covariates	Total (%)	Univariate OR (95% CI)	*p*-value
Knowledge of *EC			
Are 100% effective			
No	131 (55.5%)	0.36 (0.751, 1.734)	0.203
Don't know	94 (40.0%)	0.65 (0.131, 3.213)	0.595
Terminate pregnancy, if woman already pregnant			
No	105 (44.4%)	1.86 (0.799, 4.300)	0.151
Don't know	102 (43.2%)	1.86 (0.800, 4.331)	0.150
Available by prescription only			
No	130 (55.0%)	1.45 (0.558, 3.739)	0.448
Don't know	86 (36.4%)	2.70 (0.980, 7.436)	0.055
More effective the sooner taken			
No	11 (05.0%)	0.41 (0.117, 1.390)	0.151
Don't know	78 (33.0%)	1.23 (0.676 ,2.253)	0.493
Provide protection from STD/RTI			
No	162 (68.6%)	0.95 (0.273, 3.281)	0.931
Don't know	62 (26.2%)	1.44 (0.381, 5.426)	0.592
Attitude towards EC			
If readily available**,**			
It will promote irresponsible behaviour			
No	79 (33.5%)	1.04 (0.582, 1.856)	0.896
Cause more STD or HIV due to seldom usage of condom			
No	91(38.6%)	1.56 (0.877, 2.779)	0.130
Will increase promiscuity			
No	89(37.7%)	2.12 (1.167, 3.864)	0.013
Emergency contraceptives should**,**			
Be Easily Accessible			
No	97 (41.1%)	0.50 (0.286, 0.867)	0.014
Be inexpensive			
No	73 (30.9%)	0.67 (0.376, 1.198)	0.177
Be available to victims of rape only			
No	139 (58.9%)	1.58 (0.910, 2.746)	0.104
Be available without prescription			
No	92 (39.0%)	0.69 (0.372, 1.129)	0.126
Be available to women over 18 yrs			
No	106 (45.0%)	1.28 (0.737, 2.226)	0.380
ECs might affect pregnancy in the future			
No	73 (31.0%)	1.40 (0.755, 2.546)	0.291
ECs might be harmful to the body			
No	57 (24.2%)	1.45 (0.744, 2.816)	0.276
Practice of EC			
Increased doses of birth control pills is a form of EC			
No	108 (46.0%)	0.75 (0.332, 1.688)	0.486
Don't know	93 (39.4%)	1.32 (0.562, 3.088)	0.525

Table 2 (Cont'd): Univariate analysis of knowledge, attitude and practice

Covariates	Total (%)	Univariate OR (95% CI)	*p*-value
ECs are effective,			
When taken before sexual intercourse			
No	84 (35.6%)	0.84 (0.337, 1.850)	0.658
Don't know	111 (47.0%)	1.10 (0.506, 2.379)	0.814
More than traditional methods of contraception			
No	90 (38.1%)	1.12 (0.495, 2.548)	0.782
Don't know	113 (47.9%)	1.80 (0.797, 4.057)	0.157
When taken 72 hrs after unprotected sex			
No	53 (22.5%)	1.73 (0.810, 3.683)	0.157
Don't know	102 (43.2%)	1.42 (0.767, 2.628)	0.264
IUDs are effective if inserted 120 hrs after unprotected sex			
No	64 (27.1%)	0.87 (0.260, 2.886)	0.816
Don't know	158 (67.0%)	1.35 (0.430, 4.254)	0.605

*EC = Emergency contraceptives

cription only; 94.8% were not sure whether ECs protect from sexually transmitted diseases/reproductive tract infections (STD/RTIs) but 62% knew that ECs were more effective the sooner they were taken. But none of these factors was significant at $p < 0.05$ level.

With respect to attitudinal characteristics, only 33.5% of students believed that people would not become irresponsible, if ECs were readily available; 38.6% believed that ECs would not cause more STI or HIV due to decreased usage of condoms; 62.3% felt it would lead to promiscuity if ECs were obtained without prescription (OR 2.12, 95% CI 1.167, 3.864, $p = 0.013$) and 58.9% believed that access to EC should be easy (OR 0.50, 95% CI 0.286, 0.867, $p = 0.014$). These two factors were significant at $p < 0.01$ level; 69.1% believed that ECs should be inexpensive, 58.9% believed that ECs should not be available only to victims of rape and 61% thought that ECs should be available without prescription. Fifty-five per cent thought ECs should be available to women over 18 years of age; 31% thought that ECs might affect pregnancy in the future while 75.8% thought that ECs were harmful to the body.

With respect to practice characteristics, 85.4% did not know if taking increased doses of birth control pills was a form of EC; 82.6% did not know if ECs were effective if taken before sexual intercourse; 86% incorrectly felt ECs were more effective than traditional methods of contraception; 65.7% did not know if ECs were effective even when taken 72 hours after unprotected sex; and 94.1% did not know whether IUDs were effective once inserted within 120 hours after unprotected sex. However, none of the practice characteristics was significant.

DISCUSSION

In this sample of students from a tertiary institution in Trinidad, 63% of respondents had heard about EC. Studies in the United States of America (USA) and United Kingdom (UK) conducted in 2008 and 1996 respectively have reported more than 90% awareness (11−12). A similar study conducted among Jamaican university students in 2002 reported 84% general awareness of ECs (13−14). This shows that although awareness was high, it was way below international standards, but in line with studies conducted in 2007 in the Cameroon [63%] (15) and in 2009 in Nepal [68%] (16) but higher than in a 1999 study conducted in Kenya [39%] (17).

The most important sources of information for students were friends/family and media/internet. The influence of internet, as opposed to other media networks is often overlooked. Healthcare professionals such as doctors, paramedical staff and pharmacists had the lowest response. This is in line with other studies (11, 14). However, the study in the Cameroon reported that knowledge gained from friends and family was often misleading and inadequate (15).

The general level of their knowledge about EC was poor. Except for the variable "ECs protect you from STD/RTI" most students did not know that ECs were not 100% effective and that they did not terminate pregnancies. They did not know whether ECs were available without prescriptions or not and that they were more effective the sooner they were taken. This is of import because it reflects gaps in their knowledge regarding its mechanism and the time frame of use. This is in line with various other studies done among university students (13, 14, 17, 18).

The general attitude of students towards EC was positive. Two variables presented themselves as significant. These were "If ECs were obtained without prescription, this will increase promiscuity" and "Access to ECs should be easy". These factors were significant at 0.01 level. The issues of increased access and easy access are linked and are therefore discussed here in combination. This is in line with other studies such as a qualitative study done among

university students in Kenya who observed that availability of condoms would already have promoted promiscuity if linked to contraceptive access. However, the Kenyan students were not in favour of increased access (16). A study done among university students in Jamaica raised apprehensions regarding increase in promiscuity, if access was made easy without increase in awareness and knowledge. They favoured that it be made available through health services but fewer than one-fifths supported the idea of it being made available in supermarkets (14). Another study conducted among college students in Michigan found that nearly 60% believed that EC should be available over the counter (11). A randomized clinical trial conducted to evaluate the effect of direct access to EC through pharmacies and advance provision on repro-ductive health outcomes found that though it increased use, it had little effect on public health (19). The study suggested that increased access did not affect reproductive outcomes. A Cochrane review also found that advance provision of ECs among the general population does not negatively impact reproductive health behaviours and outcomes (20).

As in other studies (13), students apparently did not know that ECs were effective even when taken after 72 hours of unprotected sex. This is a major concern since despite many campaigns, ECs have been unable to shed its "morning-after pill" image.

CONCLUSION

This survey suggested that students were generally very positive towards EC, but lacked correct knowledge. Knowledge about effectiveness, mechanism and specific information regarding time frame was lacking. Information, easy access and reasonable cost are often cited as barriers to use of ECs in preventing unintended pregnancies. However, in this case we found that students were unsure whether they needed a prescription, yet were sure about the availability of ECs and positive that ECs should be made available easily. This study, it is hoped, will help policy-makers by providing evidence-based knowledge to promote EC use among university students. Continued efforts are needed to ensure proper knowledge and practice of EC.

One of the limitations of the study was that the survey questionnaire was distributed in two campuses of the university lying in the East-West corridor of the country which meant that institutions in Central and South Trinidad were neglected. The use of a convenient sample also limited the generality and ability of the study. In addition, it is important to remember that the results of this study are dependent upon the accuracy of the responses.

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