KNOWLEDGE, ATTITUDE AND DISPENSING PRACTICES RELATING TO EMERGENCY CONTRACEPTIVE PILLS AMONG PHARMACISTS IN IBADAN AND LAGOS METROPOLIS, NIGERIA

BY

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DEDICATION

This work is dedicated to GOD Almighty for sustaining my life to this present time. I also dedicate it to my parents, my brother and his wife and my sister for all their support before, during and after this work. May God continue to keep and sustain your lives. Amen

ABSTRACT

Emergency Contraceptive Pills (ECPs) are hormonal means of preventing pregnancy following unprotected sexual intercourse. If taken within 72 hours of the act, ECPs reduce the risk of pregnancies by 75%. Use of ECPs is important in Nigeria where unprotected sex is widespread. Commercial pharmacies are important access points for ECPs because they are more readily accessible than clinics. Few studies have been carried out among the pharmacists who dispense the drugs. This study assessed the knowledge, attitude, and dispensing practices relating to ECPs among commercial pharmacists in Ibadan and Lagos metropolis, Nigeria.

The study was cross-sectional in design. Pharmacists who practiced in both pharmacy shops and Hospital provided data for the study. Quantitative method was used to gather data; 240 and 190 validated questionnaires were administered to pharmacists in Ibadan and Lagos respectively during the period of eight months. Of this number, 211 (145 in Ibadan and 66 in Lagos) consented to participate in the study. Data were analysed using descriptive and inferential statistics.

The mean age of the respondents was 38.8 (± 10.9) years. There were more male (57.3%) than female respondents (42.7%). Seventy two percent of the respondents practiced in pharmacies and 28% in hospitals. The mean knowledge score of ECP was 8.9 (± 2.6) out of 18 points. No significant difference was found in mean knowledge score of male (9.0) (± 2.6) and female respondents (8.9) (± 2.8) ($p>0.05$). Pharmacists aged less than 40 years had mean knowledge score of 9.4 compared to older Pharmacists (8.3). Respondents who had practiced for up to 30 years had significantly higher score of 9.1, when compared to those with less years of practice (7.7) ($p< 0.05$). The overall mean attitude score was 8.8 (± 2.7) out of 16 points. Most of the Pharmacists (79.1%) believed that it was their responsibility to dispense ECPs. Forty-three

per cent of respondents had religious objection to the dispensing of ECPs and 46.9% had moral objection. Twenty-eight percent supported ECPs as over-the-counter drug. The majority (70.6%) said they would not dispense ECP to patients younger than 18 years old. Seventy percent of respondents had ever dispensed ECP, 30% had never done so. Seventy-one percent of pharmacists had ECPs in stock at the time of study. More male (61.7%) than female (38.3%) had dispensed ECPs. No significant difference was found in dispensing practices of pharmacists in Ibadan (94.5%) and Lagos (93.9%) ($p>0.05$). Sixty-one percent felt there was need for training before a pharmacist could adequately dispense ECPs but only 17.5% had ever participated in such training. However, 65.9% signified intention to be trained given the opportunity.

Although majority of pharmacists dispensed ECP, their knowledge of the drug is limited, they held negative attitude towards dispensing the drug. There is need to upgrade their knowledge and influence their attitude to the dispensing of ECPs through training.

Key Words: Emergency Contraceptive Pills, Pharmacists, Over-the- counter, Dispense.

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CERTIFICATION

I certify that this work was carried out by Mr. O. Omotoso in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria

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ACRONYMS

ACOG	American College of Obstetrician and Gynecologist
APhA	American Pharmaceutical Association
BBC	British Broadcasting Corporation
CBPs	Community-Based Pharmacists
COCP	Combine Oral Contraceptive Pills
DFID	Department for International Development
EC	Emergency Contraception
ECPs	Emergency Contraceptive Pills
FPs	Family Physicians
HBPs	Hospital-Based Pharmacists
IPPF	International Planned Parenthood Federation
IUD	Intra-Uterine-Devices Methods
LAM	Lactation Amenorrhea Method
MDGs	Millennium Development Goals
NGOs	Non Governmental Organizations
OBGYNs	Obstetrician and Gynecologists
OC	Oral Contraceptive
OCP	Oral Contraceptive Pills
PID	Pelvic Inflammatory Disease
PMS	Premenstrual Symptoms
PRB	Population Review Bureau
SDM	Standard Days Methods
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
STM	Symptom-thermal method
TSS	Toxic Shock Syndrome
UNFPA	United Nation Population Fund
USFDA	US Food and Drugs Administration
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

Emergency Contraceptive Pills (ECPs) are hormonal pills used for daily oral contraception. ECPs are sometimes packaged especially for emergency use (dedicated products), or they can be special doses taken out of regular pills pack. Emergency Contraception (EC) could be used when a woman has had unprotected sex, and she wants to prevent pregnancy. For example: she did not expect to have sex and was not using contraception, she was forced, a condom broke or slipped; she ran out of oral contraceptives, started a new packet of pills several days late, or missed three or more active pills in a row, and she did not use condoms or spermicide. Four types of pill could be used and they either contain progestin levonorgestrel, or norgestrel. They are: Progestin-only dedicated products, progestin-only oral contraceptives, combined oral contraceptives and combined progestin-estrogen dedicated products. Progestin-only pills are more effective and cause much less nausea and vomiting than combined pills. ECPs are very effective, as only 8 women out of 100 are likely to become pregnant if each has sex once in the second and third week of her menstrual cycle without using contraception.

Known to medicine since the 1970s, EC uses the same ingredient, synthetic hormones, as conventional birth control pills (Susan and Stewart, 2003). Nevertheless, it was not until 1997 that the United States of America (USA) Federal Register published the doses of the two principal types of ECPs formulations, namely the Yuzpe regimen, which combines estrogen and progesterone, and the progestin-only regimen. At that time in the U.S., women using EC had to find a doctor willing to prescribe and "mix and match" existing contraceptive pills.

Women's acceptance of EC has been steady but slow. Surveys conducted in the USA in 1994 and 1995 showed that EC was not well known by consumers as it was rarely prescribed by doctors. Even among Obstetrician and Gynecologists (OBGYNs) who had a high degree of knowledge about EC (99%) and a willingness to prescribe it, one survey indicated that a majority (75%) prescribed EC fewer than five times a year (Susan and Stewart, 2003).

Among women who might have need for EC, survey data showed that only 1% had ever used the technique, even though over one half of women at risk indicated they were interested in trying it. Two-thirds of the women surveyed did not know that anything could be done on an emergency basis to reduce the risk of an unplanned pregnancy (Susan and Stewart, 2003).

The US-based Kaiser Family Foundation's Third National Survey found a doubling of physicians prescribing more than six EC per year (OBGYNs) from 16% to 31%, family Physicians (FPs) 8% to 17% from 1995 to 2000). The Kaiser survey also documented that doctors noted a tripling of interest in EC demand on the part of consumers. Although EC demand is on the increase, there has been report that pharmacists refused to fill prescription or dispense EC because they oppose its use on the basis of moral and religious ground (National Women Law Centre, 2005). In other studies carried out in Pennysylvia, South Dakota, and New Mexico, it was found out that a majority of pharmacies either did not stock or could not fill a prescription to women who needed them (Van Riper et al, 2005; Bennett et al., 2003 and Epsy et al., 2003)

There are two medically accepted methods of EC; the hormonal and copper containing Intra-Uterine-Devices methods (IUD). The hormonal method consists of various formulations of the synthetic hormones estrogen and progestin, or progestin alone; the other is the emergency insertion of a copper-containing IUD. The IUD can be used up to five days after unprotected sex and is highly effective. It has the added advantage of continuing to work as a contraceptive for up to ten years. Its use is however limited by the fact that special training is needed for insertion, the high initial cost and the fact that the IUD is not appropriate for some women for health reasons including menstrual changes, severe cramps, pains and bleeding or spotting after insertion. However, the success of EC is dependent on the awareness, knowledge, attitudes and practices amongst health-care providers and the willingness of women to accept it (Susan and Stewart, 2003; Harrispasard, 2001).

ECPs also known as 'morning after pills' are post-coital hormonal treatments that appear to inhibit implantation of the fertilized ovum. The typical regimen –Yuzpe method --consist of 200mcg of ethinyl estradiol and 2.0 norgestrel (or 1.0 of levonorgestrel) usually dispensed as four combined estrogen-progestin oral contraceptive; two pills are

taken within 72 hours of unprotected sexual intercourse and two are taken within 12 hours later (Cynthia and Charlotte, 1996).

ECP is also a pre-package dose of pills containing the hormonal progestin, the same hormone found in daily oral contraceptives. It is not intended for use as a regular contraceptive method but rather as a back- up in the event of unprotected sex or contraceptive failure, such as a condom breakage (Henry, 2006).

Contrary to popular belief the EC does not cause an abortion. A group of medical experts from the US Food and Drugs Administration (USFDA), the US National Institute of Health, the American Medical Women Association, the American College of Obstetrics and Gynecologists defined pregnancy as the beginning with the implantation of fertilized eggs in the lining of a woman's uterus. By preventing unwanted pregnancy, EC reduces the need for induced abortion (Facts, 2006). EC could reduce the risk of pregnancy after unprotected sex, preventing approximately 80%-85% of pregnancy that would otherwise occur. Also, if used after all contraception failure, ECPs could prevent 50% of unintended pregnancies (Melanie et al., 2006), thus averting many of the complications associated with unwanted pregnancies including unsafe abortion and HIV/AIDS.

ECPs contain either progestin alone or a combination of estrogen and progestin in higher doses than regular oral contraceptives. In addition to the fact that EC could reduce a woman's risk of pregnancy within 72 hours, another study in South Dakota showed that EC could reduce pregnancy risk up to 120 hours after unprotected sexual intercourse (Kelly et al., 2005).

In some states in the USA, pharmacists can enter into collaborative practice agreements with physicians, enabling the pharmacists to prescribe and dispense EC to women. In fact, the American Pharmaceutical Association (APhA) has recently adopted a policy supporting pharmacists' voluntary involvement in collaboration with other health care providers in programs offering patient evaluation and education as well as ECPs (Dianna et al., 2006). Pharmacies are therefore an ideal access option for EC (Sue, 2006).

Problem statement

There are approximately 211 million global pregnancies annually; of these, 87 million are unintended, approximately 46 million result in miscarriage or induced abortion: of the 46 million women who choose to have abortion each year, more than 76 per cent are from the developing countries. In 2006 alone, an estimated 19 million women and girls who had unintended and unwanted pregnancies faced the deadly consequence of unsafe abortion (IPPF, 2006).

Although an estimated 76 million unintended pregnancies occur every year in developing countries, research on the global demand and need for an ECP is not much. The consequences of these pregnancies, particularly where abortion is legally restricted, may be life threatening. To lower the rate of unintended pregnancy, women need better access to both regular contraceptive methods and ECPs (WHO, 1999).

EC prevents an estimated 1.7 million of these unwanted pregnancies in the USA and can have the same impact in Africa if it is widely used on the continent. A study of 15 West African countries found that those with the highest contraceptive prevalence had the lowest maternal mortality rates and vice versa (IPPF, 2006). A strategy by Department for International Development (DFID, 2004) also strengthens the fact that accessible and effective family planning services may avert up to 35% of maternal deaths; and help in achieving the Millennium Development Goals (MDGs) especially the goal of improved maternal health and reduced maternal mortality.

Pharmacists can potentially play important role in promoting use of EC. According to Diana et al (2006), pharmacists worked under a collaborative drug therapy agreement with authorized physicians or under a protocol from the state's pharmacy and medical boards to make EC accessible to women who need it for immediate or for future use. But pharmacists' refusals to fill prescription for birth control, which include EC, have been attracting media attention. These refusals to dispense contraceptives are based on personal beliefs or religious beliefs, not on legitimate medical or professional concern. The same pharmacists who refuse to dispense contraceptives because of their personal beliefs often refuse to transfer a woman's prescription to another pharmacist or to refer her to another pharmacy (Pharmacy Refusal, 2005).

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Pharmacies are ideal settings for dispensing EC. For example, they open during the evenings and weekend when most doctors will not be available, thus pharmacies can potentially increase women's access to EC. In addition, because pharmacies open in the evenings, women need not to go hospitals before getting what they need, thus pharmacists serve as a good point of call for women in need of ECPs.

If pharmacists' knowledge, attitude and dispensing practices could be found majority of the problems of unwanted pregnancies and abortion that claim many lives could be averted. If pharmacists, both registered and un-registered who operate pharmacy shops have correct knowledge, positive attitude on ECPs they will dispense them to women or girls who are in need of them. More so, this may even increase the use of other contraceptives.

For ECP to be an accessible option for women, pharmacists must have adequate knowledge about, and they must be comfortable with this medication. One study found that ECPs are found over the counter and do not require prescription meaning that a higher proportion of dispensing is in the hand of the pharmacist and pharmacy shops (Sara et al., 2006).

Few studies in Nigeria have explored the extent of knowledge, attitudes and practice of pharmacists on EC. There is therefore need to explore their knowledge, attitude and even dispensing practices on ECPs in their shops. The purpose of this study was to assess pharmacists' knowledge, attitude and dispensing practices on ECPs since their knowledge, attitude and beliefs may have important implications for patient or customers who access EC. This will also give a clue to where researchers should focus their attention in order to get better utilization of EC and to further reduce the incidence of unwanted pregnancy and abortion in the country and elsewhere.

Justification

This study is important for three reasons. First, it explored the knowledge and attitude of Pharmacists on ECPs. Few studies have examined the knowledge and attitude of Pharmacists in Africa and most of the studies were not carried out in Nigeria. Majority of those studies carried out on ECPs in Nigeria focused on the clients' perspective (women and girls) who buy ECPs as over-the-counter drug, without having correct

knowledge on its mode of actions and side effects and not from the service providers' perspective.

Secondly, most of the studies on pharmacists' knowledge, attitude and dispensing practices only examined whether they had ever dispensed ECPs to clients before. This study went ahead to know whether pharmacists were still dispensing ECPs in the week preceding the study and found out the proportion of those currently dispensing and those not. It also, looked into the types of ECPs pharmacists dispense, the common types and the reasons for these.

Thirdly, this study related the data gathered from pharmacists' knowledge, attitude and dispensing practices across variables such as gender, place of practice, age-group, educational qualifications, religion, ethnic group and primary setting of practice. This gave the work the possibilities of exploring variable and factors that could affect or influence pharmacists' knowledge, attitude and in dispensing ECPs to clients who purchase ECPs as over-the-counter drugs.

Research Questions

This study provided answers to the four research questions listed below:

1. What is the level of Pharmacists about EC?
2. What is the proportion of Pharmacists who have EC in their shops?
3. What percentage of Pharmacists had ever dispensed EC?
4. What is Pharmacists' attitude towards dispensing EC?

Objectives

The objectives of the study were to:

1. Assess pharmacists' knowledge, attitudes, and dispensing practice on EC.
2. Determine the proportion of Pharmacists who have and displayed EC over-the-counter.
3. Document the percentage of Pharmacists who have ever dispensed EC to customers.
4. Describe the attitude of Pharmacists towards the dispensing practices of EC.
5. Discuss the implications of these findings for the promotion of EC among pharmacists in Nigeria.

Hypotheses

The following are the hypotheses tested for this study

1. There is no significant association between the sex of the respondents and their knowledge on ECPs.
2. There is no significant association between the age of the respondents and their knowledge on ECPs.
3. There is no significant association between place of practice and knowledge of respondents on ECPs.
4. There is no significant association between years of practice and knowledge of ECPs drugs.
5. There is no significant association between the sex of the respondents and their attitude towards the dispensing of ECPs.
6. There is no significant association between age of respondents and their attitude towards ECPs dispensing.
7. There is no significant association between pharmacists' years of practice and dispensing practice of ECPs.

CHAPTER TWO
LITERATURE REVIEW

Although many studies have been done in the developed countries on EC, there is inadequate knowledge about pharmacists' Knowledge, attitude and dispensing practices in Nigeria. This covers history of contraception, types of contraceptives, mode of action, benefit, side effects of ECPs, EC, religion and abortion, action and availability of ECPs, the roles of Pharmacists in dispensing ECPs in Ibadan and Lagos metropolis Nigeria and conceptual framework.

History of Contraception

Contraception use started before the 20th century, with different races using different methods to prevent pregnancy. In the past, Chinese women drink mercury (now known to be toxic), the Greeks consumed diluted copper ore, and Italians sip a tea of willow leaves with mule's hoof as preventive measures against pregnancy (Jakes Elder, 1987). Africans drank gunpowder, and Canadian-Indians ingested alcohol brewed with dried beaver testicles to prevent pregnancy. Canadian-Indians also used olive oil, ginger, and pomegranate pulp, tobacco juice which they frequently smeared on or around the vagina. Many times the effect that these contraceptives had was that it killed or slowed down the movement of sperm before reaching the eggs (Jake Elder, 1987). Modern contraception began in 1937 when investigators demonstrated that the female hormone progesterone can halt ovulation in rabbits. Subsequent research replicated this process of inhibiting ovulation in other species and found it successful. In the 1940s an American chemist named Russell Marker succeeded in producing progesterone and the first birth control pills was marketed by the (USFDA) in 1963 and 1965 respectively.

Types of Contraceptives

Contraceptives generally can be divided into two main categories namely the natural methods and the artificial methods.

Natural Methods

Natural Contraceptive Methods, which are also called Natural family Planning, refer to three methods namely:

1. Basal Body Temperature (BBT).

2. Cervical Mucus Methods.

3. Symptothermic Method.

The principle involved in the use of these methods is the same as in the calendar method in which the woman employs self-recognition of certain physiological signs and symptoms associated with ovulation as an aid to ascertain when the fertile period begins.

(1) Basal Body Temperature (BBT):

This depends on the identification of a specific physiological event-the first rise of BBT at the time of ovulation. A rise in body temperature indicates that pregnancy may occur if sex takes place as a result of an increase in the production of progesterone. So, a woman who does not want to become pregnant should avoid sex when the body temperature increases. The rise of temperature is very small, 0.3 to 0.5 degree Celsius. When no ovulation occurs (e.g., after menarche, during lactation) the body temperature does not rise. The body temperature should be measured preferably before getting out of bed in the morning.

(2) Cervical Mucus

This is known as "Billing method" or ovulation method. It also works on observation of some changes like the Basal Body Temperature; this can be noticed on the cervical mucus. At the time of ovulation, cervical mucus becomes watery clear resembling raw egg white, smooth, slippery and profuse. After ovulation, under the influence of progesterone, the mucus thickens and lessens the quantity. It is recommended that a woman uses a tissue paper to wipe the inside of the vagina to assess

the quantity and characteristics of the mucus, although this should not be totally depended on as it can introduce germs or infection into the inside of the vaginal.

(3) **Symptothemic Method**:

The symptom-themal method (STM) assesses fertility levels during the monthly cycle by measuring body temperature, and observing cervical secretions. This method combines the temperature, the cervical mucus and the calendar techniques for identifying the fertile period. If the woman cannot clearly interpret one sign, she can "double check" her interpretation with another. The Human Reproduction study found using STM correctly led to a rate of 0.4 pregnancies per 100 women per year. UK experts said natural family planning was effective - provided it was taught properly and carried out correctly. A University of Heidelberg team assessed STM in a study of 900 women and found that the lowest pregnancy rate occurred among women who abstained from sex during their most fertile period, as defined by STM (BBC News, 2007). Therefore this method is more effective than the "Billing method" To sum up, natural family planning demands discipline and understanding of sexuality. It is also not meant for everyone because only women with some level of education can use it correctly.

Traditional Methods

These include: Periodic abstinence, Withdrawal (Coitus interrupts), Safe period (rhythm method) and Standard Days Methods (SDM). Abstinence is a process by which a woman or man totally keep away or avoid sexual intercourse. It is known to be the only birth control that is completely effective. It is easy theoretically but a little difficult in practice. It amount to repression of a natural force and is liable to manifest itself in other direction such as temperamental changes and even nervous breakdown (Park, 2000).

Withdrawal is the behavioural action where a man pulls his penis out of the vaginal before he ejaculates. This form of contraception is classified under natural birth control method. It is the oldest method of voluntary fertility control but fails if not carefully done. It involves no cost or appliances. It continues to be a widely practiced method because of its simplicity. The male withdraws before ejaculation and thereby tries to prevent deposition of semen into the vagina. Some couples are able to practice this

method successfully, while others find it difficult to apply. The major disadvantage of this method is that the pre-coital secretion of the male may contain sperm and even a drop of semen is enough to cause pregnancy.

The safe period method works through a woman's monitoring of the calendar that is why it is also called the calendar method. The method is based on the fact that ovulation occurs from 12 to 16 days before the onset of menstruation. One can calculate the period when fertilization can occur. For example, 18 days minus the shortest cycle of a woman's menstrual period gives the first day of the fertile period. While 10 days is subtracted from a woman's longest menstrual cycle gives the last day of the fertile period. But where such calculations are not possible couples are advised to avoid intercourse from the 8th day to the 22nd day of the menstrual cycles, counting from the first day of menstrual cycle. The major disadvantages of this method are that; (a) a woman's menstrual cycle is not always regular. If the cycles are irregular, it is difficult to predict the safe period; (b) It can be best practiced by responsible couple who have a high degree of motivation and cooperation; (c) Compulsory abstinence from sexual intercourse for nearly one half of every month may not be realistic for some couple especially during the postnatal period. For example, research carried out in India reported a high failure among couples who practice this method with a rate of 21 per 100 women who took part in the study (Population Council India, 1963).

Standard Days Method (SDM) is a simple and effective fertility awareness-based method of family planning; it is an innovative approach to addressing unmet need. Women with menstrual cycles between 26 and 32 days long can use the SDM to prevent pregnancy by avoiding unprotected sex on days 8 to 19 of their cycle. Surveys show that well over 30 million women worldwide report that they are using "periodic abstinence" to prevent pregnancy (PRB, 2003). The majority of them do not know when they are most likely to get pregnant-making their effort to avoid pregnancy often unsuccessful (Institutes for Reproductive Health, 2007). They thus require a method such as SDM so as to be able to avoid unwanted pregnancies.

SDM is based on a woman's physiology. A woman is fertile a total of six days each month-five days before ovulation plus the day of ovulation (Wilcox et al., 1998). This is because of the life span of the sperm, which remain viable in the woman's

reproductive tract for up to five days, and the fact that the ovum can be fertilized for up to 24 hours following ovulation. SDM, specifically the CycleBeads was developed by Institute for Reproductive Health at Georgetown University Medical Centre with support from the U.S. Agency for International Development.

CycleBeads are a string of coloured beads that represent each day of a woman's menstrual cycle. They are a visual aid to; help woman track the days of her menstrual cycle, increase her understanding about fertility, promote communication between partners and help partners to make decision about sex during fertility days. CycleBeads also help the woman to know when she is likely to get pregnant if she has unprotected sexual intercourse. CycleBeads have two colours namely; white and brown. White beads mark the days a woman is likely to get pregnant while brown beads mark the days she is not likely to get pregnant. CycleBeads are for women who want a natural, effective approach to family planning.

Advantages of Cyclebeads

1. They are natural option and do not have side effects.
2. They do not involve surgery or drugs.
3. They do not require frequent visits to the health care provider or pharmacy.
4. They help partners to understand fertility cycle.
5. They help partners to decide when to have sex.
6. The option is reversible if the couples decide to change the method.

Disadvantages of Cyclebeads

1. They are not effective for women who do not have their periods between 26 and 32 days.
2. They are not good for partners who cannot avoid sexual intercourse during the fertile period.

3. Some women cannot use it because they cannot remember the counting of days and monitoring of colours.

4. They do not protect against STIs and HIV/AIDs.

Modern Methods

Modern contraceptive methods are the recent methods of contraception which have faster mode of action; they are easily accessible and can be used by women with different contraceptive needs. There are different types, so a woman can choose the one that fit with her body system or with minimal side effects. They include; female sterilization, male sterilization, IUD, injectables, implants, male condom, female condom, diaphragm, lactation amenorrhea method, spermicides, oral contraceptive pills and the concern of this study which is emergency contraception. Details about each of these methods are provided below.

Female Sterilization

Female sterilization is permanent contraception for women who will not want more children. Two surgical approaches are most often used namely; Minilaparotomy and Laparoscopy.

Minilaparotopy is a process which involves making a small incision in the abdomen. The fallopian tubes are then brought to the incision to be cut or blocked (http://www.infoforhealth.org/globalhandbook/book/fph_chapter11/index.shtml).

Laparoscopy involves the insertion of a long thin tube with a lens into the abdomen through a small incision. The laparoscopy enables the doctor to see and block or cut the fallopian tubes in the abdomen.

Female sterilization is also called tubal sterilization, tubal ligation and tubal occlusion. Other people call it voluntary surgical operation, tubectomy, bi-tubal ligation, trying the tubes, minilap, and the operation. It is a low-risk, highly effective one-time procedure that offers lifelong protection against pregnancy. Female surgical sterilization is performed by blocking the fallopian tubes and thereby preventing sperm from reaching and fertilizing the eggs. Although the ovaries continue to function normally, the eggs

they release break up and are harmlessly absorbed by the body. Tubal ligation is performed in a hospital or outpatient clinic under local or general anesthesia. In the US, about 7,000 women undergo this procedure each year, and it is the most popular form of contraception. Sterilization does not protect against STDs (http://www.healthscout.com/ency/1/guides/000091 9.html). Female surgical sterilization does not cause menopause as believed by some people. Menstruation continues as before, with usually very little difference in length, regularity, flow, or cramping. The most popular type of female sterilization is called Laparoscopy.

Male Sterilization

Male sterilization also known as Vasectomy is a permanent contraception for men who decide they will not want more children. It is a safe, simple, and quick procedure. It can be done in a clinic or office with proper infection-prevention procedure. It is not castration, it does not affect the testes, and it does not affect sexual ability. Vasectomy is very effective and Robert et al., (2005) reported that only 0.15 pregnancies per 100 men could occur in the year following the procedure.

Advantages of Male Sterilization

1. It is very effective.
2. It is permanent. A single, quick procedure leads to lifelong, safe, and very effective family planning.
3. There is nothing to remember except to use condoms or another effective method for at least the first 20 ejaculation for the first 3 months.
4. There is no interference with sex i.e. does not affect a man's ability to have sex.
5. It increases sexual enjoyment because no need to worry about pregnancy.
6. There is no supply to get, and no repeat visits to clinic are required.
7. It does not have any apparent health risks.

Disadvantages of Male Sterilization

1. It may give common minor short-term complications of surgery, which includes; pain in the scrotum, swelling and bruising. There may also be feeling of faintness after the procedure.

2. It requires minor surgery by a specially trained provider.

3. A reversal surgery is difficult, expensive, and not available in most areas of the world. Success cannot be guaranteed.

4. It does not protect against STDs.

Intrauterine Device (IUD)

An Intrauterine Device (IUD) is a small object that is inserted through the cervix and placed in the uterus to prevent pregnancy. There is a small hang down from the IUD which fit into the upper part of the vaginal. The IUD is not usually noticeable during intercourse and could last 1-10 years. A report by Population Council (1995) showed that IUDs now availably offer almost complete protection from pregnancy. There is also international evidence by the USFDA that continue use of IUDs are both safe and effective for a long period of time with the example of TCu-380 IUD which when inserted is not noticeable during sexual intercourse and could be used for up to 10 years. IUDs work by changing the lining of the uterus and fallopian tubes affecting the movements of eggs and sperm and so that fertilization does not occur. IUDs are 99.2-99.9% effective as birth control. However, they do not protect against STIs including HIV/AIDS. After use, an IUD can be removed at any time and the procedure is quicker and easier than insertion. If it is removed near ovulation, a woman may become pregnant from recent intercourse before IUD removal. There are two types of IUDs namely: ParaGard and Mirena. The ParaGard has a tiny copper wire wrapped around the plastic body and should not be used by anyone who is allergic to copper. The Mirena releases small amount of a synthetic progesterone hormone. The hormone was added in attempt to decrease the bleeding and cramping that some women have with the IUD.

Every woman is different and IUDs are not recommended for all women. Due to the risk of serious health problems such as: recent or repeated pelvic infection, known or suspected pregnancy, severe cervicitis, salpingitis, malignant lesions in the genital tract, unexplained vaginal bleeding, HIV/AIDS, history of ectopic pregnancy, history of toxic shock syndrome and physical inability to check IUD. It is advisable that such women should not use IUD.

In addition, IUDs are not recommended for women who are at risk for Pelvic Inflammatory Disease (PID). Those who have lower immune response, abnormal pap smear, heart disease, anemia, a history of severe menstrual cramping and heavy flow, a history of ectopic pregnancy, or previous problems with an IUD.

Injectables

Injectable which is commonly known as Depo-Provera is a contraceptive that is administered by intramuscular injection every three months. It is a hormone, much like the progesterone a woman produces during the last two weeks of monthly cycle. Injectables stop the woman's ovaries from releasing an egg and have other contraceptive effects. Among typical couples who initiate use of injectables, about three percent of women will experience an accidental pregnancy in the first year (http://www.advocateforyouth.org/youth/health/contraceptives/injectible.htm).

Advantages of Injectables

1. There is no need to take any pill daily or at the time of sexual intercourse.
2. Injectables are extremely effective (1 in every 333).
3. Women lose less blood during menstruation when they are using injectables and have less menstrual cramps.
4. There is privacy which is a major advantage. No one has to know a woman is using this method.
5. Nursing mothers can receive injections; it is best to receive after the baby is six weeks old.

6. It is okay for a woman to start another contraceptive method if it is less than 13 weeks since the last shot.

7. Injectables may lead to improvement in PMS (premenstrual symptoms), depression or symptoms from endometriosis.

Disadvantages of Injectables

1. Injectables do not protect from HIV infection or other STIs.

2. Injections can lead to very irregular periods. If a woman's bleeding pattern is bothersome, there are medications which can be given to help have a more acceptable pattern of bleeding.

3. Some women gain weight. To avoid weight gain, women should watch their calorie intake and get lots of exercise.

4. A woman has to return every three months for her injection.

5. Depression and premenstrual symptoms may become worse.

6. It may be a number of months before a woman's period return to normal after her last shot.

7. Injectables may cause bone loss, especially in smokers. Women should get regular exercise and consider taking extra calcium to protect their bones from osteoporosis.

8. Some women are allergic to injectables.

Implants

The contraceptive implant (Implanon) is a single implant inserted into the upper arm. After a woman is given a local anesthetic, insertion takes only a few minutes. Usually it does not hurt. Implants give off very small amounts of a hormone much like the progesterone a woman's body produces during the last two weeks of each monthly cycle. Among typical couples who initiate use of implants, five women in 1,000 will experience an accidental pregnancy in the first year. Complete information about this

contraceptive is available through a clinician or the package insert accompanying the implant.

Advantages of Contraceptive Implants

1. Implanon is effective for three years. In a recent study, no pregnancies occurred among the first 70,000 cycles of Implanon users.
2. There is nothing to do on a daily basis or at the time of intercourse.
3. Women lose less blood during menstruation. They also have less cramping, headaches, and breast tenderness.
4. Depression and premenstrual symptoms may improve.

Disadvantages of Contraceptive Implants

1. Implants do not protect from HIV/AIDS or other STIs. It is advisable to use a condom during intercourse.
2. Implants are quite likely to cause irregular periods in some women. A woman needs to contact her clinician in case of side effects. There are drugs that a woman may take to have a more acceptable pattern of bleeding. As time goes on a woman's periods may become more regular.
3. It has side effects such as weight gain, loss of hair, headaches and darkening of the skin. Implants may also cause some arm discomfort.
4. Depression and premenstrual symptoms may become worse.
5. A woman may have trouble finding a clinician who will remove her implants.

Male Condom

It is a sheath or covering which fits over a man's penis, and which is closed at the other end. It is usually made of latex or polyurethane. Latex condom is the most popular and widely used because it is reliable and readily available; it is made of latex and thus derived its name from this. Latex condom can be used with water as lubricant not oil based such as Vaseline or cold cream as these can break down the latex. Polyurethane condoms are made up of plastic and are thinner than latex condoms and so increase the

sensitivity and are more agreeable in feel and appearance. They are more expensive than latex condom and slightly less flexible so more lubricant may be needed. Polyurethane condoms use both oil and water as lubricant. Condoms help prevent both pregnancy and STDs. When used correctly, they keep sperm and any disease organisms in semen out of the vaginal. Condoms also stop any disease organisms in the vagina from entering the penis. If used correctly, 3 pregnancies per 100 women can occur in the first year of use (Robert et al., 2005). During sex, condoms are the best protection against catching STDs or giving STDs to a partner. Condoms can stop sexual transmission of many diseases including HIV/AIDS, gonorrhea, syphilis, chlymydia and trychomonas. Condoms protect somewhat, but not as well, against herpes, genital wart virus (HPV), and other diseases that can cause sores on skin not covered by condoms. People who use condoms correctly every time face less risk of disease. They can reduce their risk of STDs to a very low level.

Advantages of Male Condom

1. Prevent STDs, including HIV/AIDs, as well as pregnancy, when used correctly with every act of sexual intercourse.
2. Help protect against conditions caused by STDs-pelvic inflammatory disease, chronic pain, and possibly cervical cancer in women, infertility in both men and women.
3. Can be used soon after childbirth.
4. Safe. No hormonal side effects.
5. Help prevent against ectopic pregnancies.
6. Can be stopped at any time.
7. Offer occasional contraception with no daily upkeep.
8. Easy to keep in hand in case sex occurs unexpectedly.

9. Can be used by men of any age.

10. Can be used without seeing a health care provider first.

11. Enable a man to take responsibility for preventing pregnancy and disease.

12. Increased sexual enjoyment because no need to worry about pregnancy or STDs.

Disadvantages of Male Condom

1. Latex condoms may cause itching for a few people who are allergic to latex. Also, some may be allergic to the lubricant on some brands of condoms

2. May decrease sensation, making sex less enjoyable for either partner.

3. Couple must take the time to put the condom on the erect penis before sex.

4. Supply must be ready even if the woman or man is not expecting to have sex.

5. Condoms can weaken if stored too long or in too much heat, sunlight, or humidity, or if used with oil-based lubricants-and then may break during use.

6. May embarrass some people to buy, ask partner to use, put on, take off, or throw away condom.

7. Many people complain that it does not allow for real enjoyment during sex, so they do not always use it during sexual intercourse.

Female Condom

A female condom is a sheath made of thin, transparent, soft plastic. It is a development on the male condom and similar to it. It is a woman controlled method to prevent against STDs including HIV/AIDs and against pregnancy. To use, a woman places the closed end of the sheath in her vaginal before sex. The closed end contains a flexible, removable ring to help with the insertion. A large flexible ring around the open end of the sheath stays outside the vagina. During sex the man's penis goes inside the

female condom through the open end It is very effective if correctly and consistently used as only 5 pregnancies per 100 women would occur in the first year of use.

Advantages of Female Condom

1. It is controlled by the woman.

2. Designed to prevent both STDS and pregnancy.

3. There are no medical conditions after use.

4. No apparent side effects; no allergic reactions.

Disadvantages of Female Condom

1. It produces unpleasant noise when use, so most people do not like it.

2. Usually need partner's approval.

3. Woman must touch her genitals, when putting it on.

Diaphragm

A diaphragm is a flexible ring covered with thin soft rubber to make a shallow cup. It must always be used with a spermicidal cream or jelly. As a barrier method, the diaphragm fits securely in the vagina and covers the cervix. The cup portion stands as a support for the spermicide against the cervix. The diaphragm comes in different sizes from about 50 mm to 85 mm. The measurement indicates the distance from the pubic bone to the cervix (http://www.ohio.edu/hudson/topics/diaphram.cfm). The diaphragm acts as a container to hold spermicidal cream or jelly against the cervix, and as a physical barrier blocking the passage of sperm from the vagina to the uterus. A good fit is essential. The cream or jelly kills the sperm in the vagina. The actual use effectiveness rate range is 80-95%. The effectiveness of the diaphragm is directly related to the woman's motivation not to become pregnant. Other factor that increases effectiveness of the diaphragm is correct insertion by the user, which could be master during practice.i.e.,

a careful fitting and an insertion practice session with a follow-up visit to check the fit and client insertion ability.

To effectively use a diaphragm, a woman begins by putting about two tablespoons full of jelly or cream into the cup of the diaphragm and spread some around the internal rim. Then, she folds the diaphragm and slides it in as far back as it will go into her vagina. She later inserts her finger into her vagina to check the position of the diaphragm; which would be directly over the cervix. The cervix feels like a small "o" about the same texture as the tip of her nose and at most time the diaphragm goes into the correct position. The diaphragm can be inserted up to six hours ahead of time. It can also be inserted at the time of intercourse. A woman can insert the diaphragm while she is standing with one of her legs up, or if she is in a lying down position. The diaphragm must be left for at least 6-8 hours after the last act of intercourse. A woman is not expected douche while it is in place. At each additional act of intercourse, an extra spermicidal should be used. This can be added with an applicator which should be purchased at the same time as the spermicide. Due to the risk of Toxic Shock, the diaphragm should not be left in the vagina for more than twelve hours at a time especially during menstruation. After use, a woman should wash her hands with soap and water, rinsed and pat dry. She can also dust her vaginal using cornstarch but it is advisable not to use powder and to check for holes. The diaphragm should be put back into its containers after use and store away from heat for heat can damage it. The diaphragm should be replaced every two to three years; however, a woman should check the fit with her gynecologist every year.

Advantages of Diaphragm

1. It is highly effective and has no medical side effects.
2. It can be inserted up to six hours in advance or just prior to sexual intercourse.
3. A woman's partner can participate in inserting the diaphragm and therefore it will not interrupt love making.
4. It cost less.
5. It is to be used only when needed so does not give unnecessary discomfort.

Disadvantages of Diaphragm

1. It produces an allergic reaction to the rubber, spermicidal cream or jelly. When this happen it is advisable for a woman to try another contraceptive.
2. There can also be recurrent cystic (bladder) infection due to pressure against the urethra can occur.
3. There can be some discomfort if the diaphragm is not in the right size.
4. It produces a slight risk called Toxic Shock Syndrome (TSS).

This method requires a prescription i.e. a pelvic examination which is to fit the diaphragm properly and is gotten during education session on insertion, use, care and removal. A trained physician should also help determine the right size for the client. Although the insertion of a diaphragm requires the expertise of a trained physician, a woman can still use it herself and if used properly, the effective rate is 4-8% that means if 100 women use it correctly for one year, four to eight of them will become pregnant. On the other hand, it is disadvantaged in the sense that women find it difficult to insert at first, others find out that it doesn't fit them tightly. There is also a chance of developing a urinary tract infection while using it and it does not prevent against STIs and HIV (http//www. sexuallyandu.c/adult/contraception-2-10-asp). Findings from a research work carried out by Iriuchijima and colleagues in 1990 on Investigation of Contraception with the diaphragm method showed that there is a positive relationship between diaphragm size and body weight. But diaphragm size was not related to delivery, duration of labour, and birth weight (Iriuchijima et., al 1990).

Lactation Amenorrhea Method

Lactation Amenorrhea Method (LAM) is the use of breastfeeding as a contraceptive method. It is based on the physiologic effect of suckling to suppress ovulation. It is an effective temporary contraceptive method based on natural infertility resulting from certain pattern of breastfeeding. Women who want to use it must meet the following three criteria;

1. Menstrual period has not resumed.

2. The infant is fully or nearly fully breastfed frequently, day and night.

3. The infant is under six months of age.

LAM is a temporary contraceptive method which when introduced can serve as alternative contraception to women who do not meet the three criteria, or when the woman no longer wishes to rely on it for family planning. In fact, changing to another method can be discussed well before the woman discontinues LAM, in order to ensure there is no time she is at risk for unintended pregnancy. Research has shown that women who breastfeed are less likely to ovulate. This is in line with the data published in the early 1970s which showed that women who breastfed were less likely to ovulate in their early postpartum, and that if breastfeeding were more intensive, they were less likely than partial or non-breast feeders to experience a normal ovulation prior to the first menstrual-like bleed (Perez et al., 1992).

In another research in 1988 at the Rockefella Bellango Conference Centre, a group of researchers found out and agreed that the three criteria mentioned above could be sufficient to predict fertility return in a woman who uses LAM. The findings were then presented to a group of family planning service providers at Georgetown University in the USA, resulting in the codification of LAM as a family planning method (Labbok et al., 1994).

Advantages Lactation Amenorrhea Method

1. Effectively prevents pregnancy for at least 6 months and may be longer if a woman keeps breastfeeding often, day and night.
2. Encourages the best breastfeeding patterns.
3. Can be used immediately after childbirth.
4. No need to do anything at time of sexual intercourse.
5. No direct cost for family planning or for feeding the baby.
6. No supply or procedure needed to prevent pregnancy.
7. No hormonal side effects.

Disadvantages Lactation Amenorrhea Method

1. Effectiveness after 6 months is not certain.
2. Frequent breastfeeding may be inconvenient or difficult for some women, especially working mothers.
3. No protection against STDs including HIV/AIDS.
4. If the mother has HIV, there is a small chance that breast milk will pass HIV to the baby.

Spermicide

The spermicide is a chemical used to reduce the number of living sperm. The fewer the sperm swimming around the vaginal, the less likely a woman's chance of becoming pregnant. It functions by killing or disabling sperm so that it cannot cause pregnancy. Spermicide comes in different forms: foam, jelly, film and suppositories. Most of the spermicides use the chemical called nonoxynol-9 which works against the sperm. Spermicides provide lubrication and can be used with other methods of birth control. They are most effective when used consistently and correctly with a barrier method of birth control, like condom. Spermicides are 71-82% effective as birth control and if used alone it does not protect against HIV/AIDS. Spermicide like some other methods of birth controls is available without prescription, it can be use as part of sex play and if lubricated it may increase sex pleasure and it does not affect future fertility. On the other hand, spermicide can be messy, can cause genital irritation and when used frequently may irritate the vaginal making it easier to catch HIV/STI.

Oral Contraceptive Pills

The idea of oral contraception with hormones dates back to the 1920s (Greep, 1984). Oral contraceptive (OC) pills are medications taken by mouth for the purpose of birth control. They are however inexpensive and orally effective synthetic hormones (Djerassi, 1979). They were approved after a decade of research by the (USFDA, 1997). Since then OC pills have become important drugs in the reproductive health need of girls and women. For over 40 years since oral contraceptives (OCs) were marketed, they have

symbolized modern contraception worldwide. It provides millions of women with effective, convenient and safe protection from pregnancy. Currently, more than 100 million women rely on the pills (Population report, 2000). It is the top modern family planning method among married women in half of the countries surveyed in Western Europe and developing countries but has its least use in the China, India and Japan (Population report, 2000). In 44 of 68 developing countries surveyed, data on ever used of contraception revealed that more married women have used the pills than any other modern family planning method. In those 68 countries, about 40% of married women who have ever used the family planning have used the pills at some point. OCPs contain two types of synthetic (man-made) female hormones, progestin and estrogen. These hormones are normally produced by the ovaries (Medical uses of oral contraceptive pills: A guide for girls). Women who use OCs swallow a pill each day to prevent pregnancy. OCs are very effective when used correctly and consistently-0.1 pregnancies per 100 women in first year of use i.e. 1 in every 1,000 (Robert et al., 2005).

Advantages of Oral Contraceptive Pills

1. Very effective when used correctly.
2. No need to do anything at time of sexual intercourse.
3. Increased sexual enjoyment because no need to worry about pregnancy.
4. Monthly periods are regular; lighter monthly bleeding and fewer days of bleeding; milder and fewer menstrual cramps.
5. Can be used at any age from adolescence to menopause.
6. User can stop taking the pills any time.
7. Can be used as emergency contraceptive after unprotected sex.
8. Can prevent or decrease iron deficiency anemia.

9. Help prevent ectopic pregnancies, endometrial cancer, ovarian cysts and cancer, pelvic inflammatory disease and benign breast disease.

Disadvantages of Oral Contraceptive Pills

1. Have some common side effects such as; nausea, bleeding, mild headaches, breast tenderness, slight weight gain, and amenorrhea.
2. Not highly effective unless taken every day.
3. New packet of pills must be at hand every 28 days.
4. It is not recommended for breastfeeding women because they affect quality and quantity of milk.
5. In a few women, may cause mood changes including depression, less interest in sex.
6. Do not protect against STDs including AIDs.

Emergency Contraceptive Pills

Emergency contraception (EC) refers to methods which women can use within 72 hours after unprotected sexual intercourse to prevent an unwanted pregnancy. It is sometimes referred to as "the morning after pills" which is a form of birth control, a pre-packaged dose of pills containing the hormone progestin, the same hormone found in daily oral contraceptives. It is not intended for use as a regular contraceptive but rather as a back-up in the event of unprotected sex or a contraceptive failure, such as condom breaking (Kaiser Family, 2005).

EC has been in existence for more than 20 years, but its use is restricted to the US and other developed countries in Europe (Charles, 2006). Even pharmacists still lack correct information about it. In a 1999 Planned Parenthood of New York City Survey of 100 pharmacists in the US, 97 provided incorrect information or no information at all about how EC works, and 38 did not know that it was available. In some places, however, many health care providers do not know that some of the same pills used for ongoing

contraception can also be used for EC. Another study in the US in 2003 among women aged 18-49 reported that only 6% of them had ever used EC. Other providers may confuse ECPs with abortifacient drugs. which in contrast to ECPs, act after implantation to disrupt an established pregnancy (Population Reports, 2000). But training of pharmacists has proved effective in improving their prescription of use of ECPs. According to Population Report (2000), a pilot study in the US state of Washington which allowed pharmacists to provide ECPs according to a clear written protocol, found that within the first several months the pharmacists had prescribed over 2,000 ECPs and users had no adverse outcomes. Another survey of women who had received ECPs from these pharmacists found that half obtained them on a weekend or in the evening times when they could not usually visit a doctor's office for prescription.

ECPs are most effective most especially within the first 24 hours of unprotected sexual intercourse (Hellersledt and Wendy, 2005) and it was discovered in the U.S.A. studies that women may be more inclined to use condoms if ECPs are readily available (Kelly et al., 2005). According to the World Health Organization (WHO) (1998) of the more than 75 million unwanted pregnancies which occur every year 45 million resulted in abortions with Africa having about 5 million of this abortion and 30 million live births. Also about 70,000 deaths occur from unsafe abortion annually and 585,000 deaths from pregnancy related causes (Jane, 2002). Another study by the WHO (2000) in Nigeria showed that 75 per cent of women who abort pregnancies suffer severe injuries or illness. For example, one study of 144 women who underwent unsafe abortion in Ilorin, Nigeria, found that each had complication such as sepsis, pelvis abscess, anemia, cervical tear, injury to gut, chemical virginities, uterine perforation, laceration of vaginal wall, vesico-vaginal fistula and death, whereas, most of these injuries could have been averted if those women had used ECPs (IPPF, 2006).

EC can also refer to the use of estrogen and progestin-containing pills i.e. combination ECPs or levonorgestrel-only pills i.e. progestin-only pills ECPs (Melanie et al., 2004). Same thing applies to Plan B; the most widely used form of EC in the U.S.A., it is a two-dose regimen that must be taken within first few days of unprotected sex in order to be effective (Trussell et al., 1997). Studies indicate that EC prevents pregnancy,

by inhibiting or delaying ovulation (Glaster and Baird, 1997) or by preventing implantation of a fertilized egg in the uterus (Trussell and Raymond, 1999).

EC drug therapy requires two doses, one within 72 hours of unprotected intercourse and the second 12 hours later (Pharmacy Press, 2006). The use of these combined oral contraceptive pills (CCCP) is not new as it is sometimes referred to as Yuzpe regimen after its developer, Canadian researcher Albert Yuzpe (Yuzpe et al., 1974). Initially there was argument about the function of the drug as some people believed that it is an abortifacient and some even said it may encourage riskier sexual behaviour and poorer use of regular contraception especially among adolescents (Kaiser Family Foundation, 2005). But in 1997, the USFDA declared that six brands of COCP could be used safely and effectively as ECPs (Population Report, 2000). In 1999, USFDA went ahead to approve the drugs for use with a doctor's prescription (Kaiser Family Foundation, 2005). In December 2003, a joint hearing of the FDA Nonprescription Drugs and Reproductive Health Drugs Advisory Committees voted 23 to 4 to recommend that the FDA make EC available over the counter, with virtually all the major medical and health care organization, including American Medical Association, the American College of Obstetricians and Gynecologists and the American Public Health Association, accepting that EC should be available without prescription.

ECPs awareness is on the increase in many countries of the world and more women are accessing them (average chance of pregnancy due to one act of unprotected intercourse in the second or third week of the menstrual cycle is 8%; after ECPs, 1-2%). In some countries combined and progestin-only oral contraceptives are packaged specifically for use as EC and are sold as over the counter or with the referral of a pharmacist (Population Report, 2000).

Mode of Action, Benefits, and Side Effects of Emergency Contraceptive Pills

One important area of ECP that has not been fully understood is its mode of action. Many researchers had dealt with this but no definite conclusion has been arrived at. This is because the mode of action of EC is a function of period a woman takes it. For example, if it is taken prior to ovulation it inhibits ovulation, if it is taken during ovulation, then it can prevent a fertilized egg from implanting in the uterus. This is

justified by Farrel et al., 1997 and Trussell and Raymond, 1999 who stated that the precise mode of action of ECPs is uncertain and may be related to the time they are used in a woman's cycle or by preventing implantation of a fertilized egg in the uterus. Studies indicate also that EC prevents pregnancy by inhibiting or delaying ovulation (Gasier and Baird, 1997). At the same time, some people thought that ECPs may prevent ovulation in the beginning of the cycle the way OCP do or may possible delay ovulation ((Grou and Rodrigues, 1994). Research has also shown that ECPs work by delaying or preventing the release of an egg from the ovary, thereby preventing fertilization (Fundes et al., 2004). However, the possibilities that ECPs may prevent a fertilized egg from implantation in the uterus cannot be completely ruled out, because there is no way of telling whether an egg has been fertilized (Population Council, 2006).

There are four types of emergency contraceptive pills namely:

1 Progestin-only dedicated products.

2 Progestin-only oral contraceptives.

3 Combined oral contraceptives.

4 Combined progestin-estrogen dedicated products.

The four types of ECPs contain either the progestin levonorgestrel or norgestrel. Progestin-only pills are more effective and cause much less nausea and vomiting than the combined pills. Examples of dedicated Progestin-only ECPs are Plan B, and Postinor 2, while that of the Dedicated Combined ECPs include Preven, and Tetragynon. Progestin-only Oral Contraceptives pills are Microval and Ovrette, and that of COCP are Microgynon, Nordetta. A survey of selected pharmacies in Ibadan and Lagos showed that Postinor Plane and Postinor 2 are the most common ECPs in these areas.

With respect to effectiveness. research confirms that EC are very effective especially if a woman follows the instructions carefully. For instance, if 100 young women used ECPs once, typically two (2) of them would become pregnant given an effective rate of 2% ECPs (Pathfinders International, 2000). Also, among 100 women, if each had sex in the second or third week of her menstrual cycle without using

contraception, 8 women are likely to become pregnant. If all the 100 women use progestin-only ECPs, only one is likely to become pregnant but if all 100 women use COCP for EC, only two are likely to become pregnant (Population Council, 2000). ECPs reduce the risk of pregnancy after unprotected sex, preventing approximately 80% to 85% of pregnancies that would otherwise occur (Trussell et al., 1999; Trussell et al., 2003; Von et al., 2002). The sooner a woman starts using it the more effective it becomes. If taken within 72 hours of intercourse, it reduces the like hood of pregnancy by 81% to 90% (Rodrigues et al., 2002), while delaying the first dose of ECPs by 12 hours from the time of unprotected intercourse the odds of pregnancy increases by almost 50% (Piaggio et al., 1999) and the chance of this risk increases with the passage of time. Like other contraceptives, ECP's are not 100% safe. If they fail, however, the available research suggests that ECPs will not harm the fetus or the course of pregnancy. No matter the rate of its effectiveness, one certain point is that ECPs are not effective once the process of implantation has begun or when pregnancy has been established.

ECP is a new and effective way to reduce unintended or unwanted pregnancies and abortion. Globally and in Nigeria especially, if one would go by the rate of abortion in the country there are 25 abortions per 1,000 women of reproductive aged 15-44 who engage in abortion (Stanley et al., 1998). Researchers estimate that widespread use of ECPs could potentially prevent up to half of the approximately 3 million unintended pregnancies that occur annually in US (Trussell et al, 1992). Progestin-only ECPs are more effective than ECPs containing estrogen and progestin (Raymond et al., 2004).

Every drug no matter its effectiveness and safety has its own side effects, so also does ECP. According to FDA ECPs are safe and effective (Federal Register, 1999). However, they will not cause birth defects if a woman inadvertently takes them while pregnant (American College of Obstetrician and Gynecologist, 1996). However, EC has side effects including nausea, vomiting, headaches or dizziness, cramping, heavy or lighter menstrual bleeding and breast tenderness but these do not last more than 24 hours (Pathfinders International, 2003). Repeated use of the drug do not cause harm (Shelton, 2002). The task Force on Postovulatory Methods of Fertility Regulation, (1998) reported that 23% of women who used progestin-only EC experienced nausea and 6% vomited. But there has been a way out to the side effects as antinausea medication containing

meclizine hydrochloride can help prevent nausea and vomiting (Raymond et al., 2000). Anti-emetics taken 1 hour before the combination ECPs can decrease the incidence of gastrointestinal side effects. Providers are encouraged to offer anti-emetics in conjunction with combination ECPs to prevent these side effects (Position Paper of the society for Adolescent Medicine, 2004). Taking the pills with food or milk also may help reduce or prevent these side effects (WHO, 1998). According to the information published in the Population Report (2002) if there is severe vomiting, vaginal administration of a second dose of ECPs should be recommended.

Emergency Contraception, Religion and Abortion

Whenever contraception is being discussed, issues relating to religion and abortion also come up. Some Muslim and Catholic religious bodies do not support the use of ECPs not to talk of the abortion drug. Their injunctions also prevent some of the health providers such as pharmacists who are expected to have positive attitudes from dispensing the ECP drug. According to Stanley Hauerwas (Excerpt from Chapter 9 of SACRED CHOICES), "All the religions have taken strong positions on abortion; they believe that abortion encompasses profound issues of life and death, right and wrong, human relationships and the nature of society. Hence, it is a major religious concern. In Islam, as in all the religions, fertility is highly prized and children are considered gifts of God to bring 'joy to our eyes' (Surah 25: Al-Furqan: 74). Conservatives argue also that family planning is a lack of trust in the sustaining God. They cite texts namely 'there is no creeping being on earth but that upon God is its sustenance' (Surah 11: Hud: 6) but buttress their claims. The Qur'an also says that if one place his/her trust in God is enough and there is no need to bother on family planning Daniel C.Maguine, (Excerpt from Chapter 9 of SACRED CHOICES). Christianity as a religion is divided into different factions on the issue of contraceptives including the Pentecostal, Catholic, and Orthodox. Most of the Orthodox and Pentecostal do not preach against contraceptive but the Roman Catholic Church does. Roman Catholics believe that use of contraceptives is a deliberate act of causing abortion which is morally wrong. This is based on natural law and on the written word of God. The church says that human life begins when the women's egg is fertilized by a sperm. From that moment a unique life begins, independent of life of

mother and father (www.bbc.co.uk/religion/religion/islam/islamethics/abortion).

There is therefore a lot of misconception on whether the use of ECPs would cause abortion or not. ECP has been confirmed by many researches not to cause abortion and it is also clear that it is not the same thing as the abortificient drug RU-486. According to Raman-wilms et al., (1995) EC does not affect an established pregnancy, nor is it a medical abortion like mifepristone (RU-486) or methotrexate that ends an established pregnancy. Studies on women who inadvertently continued to take their daily birth control pills (the same hormones as EC) during the early weeks of pregnancy show no evidence of negative effects on the fetus. Although no study has yet examined the long-term effect of taking EC once a pregnancy is established. American College of Obstetrician and Gynecologist (ACOG) also confirmed that ECP will not cause birth defect if a woman mistakenly takes it while pregnant. Even repeated use is not harmful (Shelton, 2002). Health care providers including pharmacists are not excluded in the campaign that ECP does not cause an abortion. There has been ongoing confusion between EC pills and medical abortion drugs. In a 2003 survey only one in four reproductive age women in California US knew that EC pills are different from the medical abortion drugs, RU-486 (Kaiser Family Foundation, 2004). However, many health care providers do not know that some of the same pills used for ongoing contraception can also be used for EC. Other providers may even confuse ECPs with abortificient drugs, which could cause implantation to destruct an established pregnancy (Weisberg et al., 1995). In another study, about 38% of responding pharmacists incorrectly believed that EC was also known as RU-486 the abortion drug (Matthew et al., 2006). A review of newspaper coverage of EC from 1992 to 2002 found that 44.5% of newspaper articles confused EC with abortion, and 32% inaccurately described how it works (Pruitt and Mullen, 2005). Meaning that majority of women and girls who could have had correct information on the mode of action and side effects of ECP were denied and ended up with incorrect knowledge about the drug.

If the misconception about ECPs and abortion are addressed there is high probability that the high rate of abortion will reduce. Of the approximately 5.4 million pregnancies recorded in the United States in 1994, 49% were unintended, and 54% (1.43 million) of these unintended pregnancies ended in abortion (Henshaw, 1998). Widespread

use of EC could prevent 2.3 million unintended pregnancies and 1 million abortions yearly, according to estimates (Trussell et al., 1992).

Access and Availability of Emergency Contraceptive Pills

EC is becoming more popular and more people are using the pills because it can be purchased as an over-the-counter drug. There is still need to get more people to know about the drug especially girls and women of reproductive ages, the service providers most especially the pharmacists who could be accessed at night and during the weekend when other service providers are not available. In 1999, Kaiser Foundation recommended that EC should be discussed with women at routine health care visits, although this is seldom done. One study conducted in 1997 found that only one in ten health professionals routinely discussed EC with their clients, and that 41% of Americans were completely unaware of its existence (Kaiser Family Foundation, 1997). Although some efforts have focused on making EC more readily available to survivors of sexual assault; some studies in the USA have documented that a sizable share of hospitals do not routinely offer counseling, referral, or dispensing of EC to women who have been sexually assaulted (Patel et al ., 2004; Polis et al ., 2005).

Adolescents are another group to be considered in the use of EC because sexual activities among them tend to be more sporadic and less likely to be planned for than among adults. Research also shows that adolescents tend to wait for some time between starting sexual activity and seeking reproductive health care, including contraception (Alan Guttamach Institute, 1994; Finer and Zabin, 1998). Other reasons why adolescents especially need ready access to ECPs include their psychological, social, and health risk of unwanted pregnancy which have great impact on their lives (McCauley and Salter, 1995; WHO, 1998). Although EC would be of benefit to many adolescents who are known to have unprotected sex, few in this population have access to the drug. Adolescents are one of the vulnerable groups and one major category that need the drug. Wanapa and Siripon found out that more than half of the young people who purchased ECPs from drugstore personnel felt that the information was inadequate and that they wanted to know more about the side effects, contraindications and long-term consequences. Unfortunately, this information was not provided. A study carried out

among US college students found out that those who had correct information about ECPs particularly about their ingredients and side effects had more favorable attitudes toward their use than those with incorrect information (Harper and Ellertson, 1994; Task Force on Postovulatory Methods of Fetility Regulation, 1998). Although birth rate in the USA has declined in the last decade from 28% to 43 per 1000, reports showed that it remains higher in developing countries (Policy Statement, 2005). This calls for more work in the area of access and availability of ECPs to adolescents in developing countries where most are not allowed to access the drug. Women's access to ECPs has increased in the recent times, especially those who have access to information or prescription before taken the pills. Findings from studies in Great Britain and USA showed that women who have an advance prescription or supply of EC are more likely than women without an advance prescription to use EC when they need it. In addition, such women are less likely to have unprotected sex (Raine et al., 2005; Martson et al., 2005). Other studies revealed that adult women and teenagers who have readily available ECPs are no more likely to engage in unprotected sex or abandon use of other contraceptive methods than women who do not have easy access to the pills (Roye, 2001; Graham et al ., 2002; Raine et al., 2005).

With the endorsement of use of EC by many medical organizations such as the American Academy of Pediatrics, American College of Obstetricians and Gynecologists, American Medical Association, American Nurses Association, American Public Health Association as well as other professional associations (AMA Policy, 2005) pharmacists should no longer be restricted to prescribe EC as over-the-counter drug. Surprisingly, however, many health care providers including pharmacists, and patients still have misconceptions and inadequate information about ECPs which limit patient access to and use of ECPs (Gold et al ., 1997; Sills et al ., 2000; Golden et al ., 2001).

The Role of Pharmacists in Dispensing Emergency Contraceptive Pills

Most women decide for themselves when they need EC and a physical examination is not necessary. Therefore, well-labeled EC should not require a prescription and can be offered over the counter. Over-the-counter access can make the

use of EC more effective because women can get it sooner than when it is prescribed (Population Report, 2000).

Women who must wait for clinic or physician appointment to gain access to the medication could face significant delay to access which in turn would compromise the efficacy of the medication (UNFPA, 2005). For this reason, pharmacists have been identified as important access point for ECPs since many pharmacy shops operate for long hours and are readily accessible to customers. A survey of women who had received EC through trained pharmacists found out that half obtained them on a weekend, or in the evening-times when they could not usually visit a doctor's office for a prescription (Population Report, 2000).

While counseling is valuable when providing any contraceptive method, access to EC should not be denied because a health care provider cannot counsel the woman face-to-face. Women can learn about EC in other ways. If necessary, pharmacists can give women EC and refer elsewhere, if they wish, for later counseling about ongoing contraception (Population Report, 2000).

Pharmacists are therefore well positioned to help women acquire EC in a timely manner-before they need it or within 72 hours of unprotected sexual intercourse. EC are not prescription drugs; therefore pharmacists can sell them as drugs over-the-counter.

Pharmacies are often opened during evening and weekend hours when most doctors' offices and health clinics are closed. Pharmacists can educate women clients about EC by providing educational materials such as brochures and wallet cards as well as inserts with prescriptions. Pharmacists can offer in-depth counseling on EC use, and some drugstores have private counseling spaces which make it easy to provide confidential counseling and information for those who need EC (Sue, 2006).

Pharmacists are uniquely positioned to improve access to EC, and leadership within the pharmacy community and can facilitate efforts to improve access. Increased education and training of pharmacists about EC such as continuing education programs are available online. One of such popular web site for this purpose is http: //www.pharmacyaccess.learnsomething.com. Continuing education is critical in ensuring that EC is available in pharmacies and that pharmacists are equipped to meeting the reproductive health needs of women.

Pharmacists are a critical point of access for EC. In many cases, they are also significant educational resources for health care consumers. It is therefore expected of them to have accurate knowledge, positive attitudes and good dispensing practices towards ECPs. Also at facilities where ECPs are being provided all the staff should have the knowledge of ECPs, but this is not true as findings from most researches on the subject have shown. According to Kelly et al (2005), most of the 34 pharmacists in the US whose knowledge, attitude and dispensing practices were assessed mistakenly believed that repeated use of ECPs was associated with health risks. However, the knowledge and attitude of the pharmacists may affect whether they carry the medication and whether individual pharmacist dispenses it (Hellerstedt and Wendy, 2005). There are some factors that usually make pharmacists decline to dispense ECPs. For example studies in Pennsylvania, South Dakota, and New Mexico in USA found that a majority of pharmacists either did not stock or could not fill a prescription the same day it was requested. These studies also found that many pharmacists did not understand how ECPs worked and the time frame for its effectiveness (Riper and Hellerstedt, 2005; Bennett et al., 2003; Espey et al., 2003). Religious, moral, and political factors also influence some pharmacists' willingness to prescribe ECPs, and factors such as educational and practice environment must be addressed if more pharmacists are to accept this prescriptive authority in meeting the needs of women who seek nonprescription of EC products.

Table 2.1 documents the matrix of publications on Knowledge, Attitude and Dispensing Practices of Emergency Contraceptive Pills.

Table 2.1: Matrix of Publications on Knowledge, Attitude and Dispensing Practices relating to ECPs.

Authors, Year, Country	Sample Size	Design	Key Findings
Kelly Balnchard, Teresa Harrison and Mosala Sello, 2005, South Africa	34	In-depth Interview	Nearly all pharmacists sold ECPs. Most did not know ECP side effects, mechanism of action. Respondents did not support ECP for clients younger than 18years.
Diana Green.,2006, U.S.A	426	Cross-sectional Survey	Eighty-six percent of women wanted ECPs for use. Those younger than 16 could not get it on time. Women who chose pharmacy access did so because they thought it was faster (54%) and convenient (47%).
Kristi K. Van Riper and Wendy L. Hellerstedt, 2005, U.S.A	810	Cross-sectional Survey	Thirty-seven percent of the respondents did not understand the mechanisms of mode of action of ECP. Eighty-four believed that ECP should not be available as over-the-counter. One-third of respondents felt comfortable counseling women about emergency contraception.
Gary Sutkin, Brenda Grant, Brian K. Irons, Tyrone F. Borders, 2008, U.S.A.	75	Cross-sectional Survey	None carried EC in his/her pharmacy, and scientific understanding of EC was generally poor. Fourteen percent stated EC conflicts with their religious views, 17% considered it a method of abortion, 11% would not be willing to fill an EC prescription written by a doctor. Fifty-eight percent would be willing to offer EC over the counter.
Denise Ragland P and Donna West. U.S.A.	394	Cross-sectional Survey	A majority (91%) of the respondents knew that Plan B had been FDA-approved for nonprescription use by women age 18 years or older. Thirty percent of participants agreed that they were uncomfortable and 45.2% of participants disagreed.

Conceptual Framework

Precede Framework

The **Precede** framework was adapted for this study. It is a model framework for the process of systematic development for health education. **Precede** is an acronym for Predisposing, Reinforcing, Enabling, Causes in, Educational Diagnosis and Evaluation. It was developed as a health education planning model by Green, Kreuter, Patridge and Deeds, (1980). It is used for determining antecedents of behaviours, and as a guide to selection of Health Education intervention.

This model is multidimensional and founded in the social/behavioral sciences, epidemiology, administration and education. It has three major components which interplay to urge an individual to taking specific or desired action/behaviours towards their health and/other aspects of their lives.

The first component factor is known as the Predisposing factors, which determine the cognitive and effective conditions that motivate an individual towards certain behaviours. They include knowledge, skills, self efficacy, value expectations, beliefs, perception and perceived benefits about the behaviour, attitude and practices.

PROCEED was added to the model in the late 1980s based on Lawrence Green's and Marshall Krueter experiences in various positions with the US federal government and the Kaiser Family Foundation. **PROCEED** is an acronym for Policy, Regulatory, Organizational Constructs in Educational and Environmental Development. (Green et al, 2006). It was added to the framework in recognition of the emergence of and need for health promotion interventions that go beyond traditional educational approaches to changing unhealthy behaviours. The administrative diagnosis is the final planning steps to "precede" implementation. From there "proceed" to promote the plan or policy, regulate the environment, and organize the resources and services, as required by the plan or policy.

The components of **PROCEED** take the practitioner beyond educational interventions to the political, managerial, and economic actions necessary to make social systems environments more conducive to healthful lifestyles and a more complete state of physical, mental and social well-being for all.

The purpose of the **PRECEDE/PROCEED** model is to direct initial attention to outcomes rather than inputs. This forces planners to begin the planning from the outcome point of view and intervention is targeted at the preceding factors that result in the outcome.

The planning process outline in the model rests on two principles:

The principle of participation, which states that success in achieving change, is enhanced by the active participation of members of the target audience in defining their own high-priority problems and goals and in developing and implementing solutions. This principle is derived from the community development root theories and the empowerment education model exemplified by Freire et al.1986.

The role of the environmental factors as determinants of health and health behaviour are as important as that of media, industry, politics, and social inequities.

DESCRIPTION OF THE MODEL:

PRECEDE - the first 5 phases

Phase 1 - Social Diagnosis

Phase 2 - Epidemiological Diagnosis

Phase 3 - Behavioral & Environmental Diagnosis

Phase 4 - Education & Organizational Diagnosis

Phase 5 - Administrative & Policy Diagnosis

PROCEED - the second 4 phases

Phase 6 - Implementation

Phase 7 - Process Evaluation

Phase 8 - Impact Evaluation

Phase 9 - Outcome Evaluation

In knowledge, attitude, and dispensing practices relating to ECPs among pharmacists in Ibadan and Lagos metropolis, awareness about the method, their reproductive health knowledge, attitude towards EC, creating time to listening to radio and television regularly, and seeing EC as family planning method not abortion will encourage women and girls in visiting pharmacy shops and in purchasing ECPs for

pregnancy prevention. This will also make pharmacists to stock ECPs and freely discuss it with women who visit their shops.

Enabling factors refers to availability of ECPs, government involvement in policy formulation and effort of other international organizations. The provision of these will enhance those in need of ECPs to get them at the appropriate time. For women who need ECPs, the support of government, international organizations, NGOs in making ECPs available at the time of need in hospitals and clinics either free or at cheaper rate will improve its use.

In reinforcing pharmacists' attitude towards dispensing ECPs, the influence of significant others like religious leaders, pharmacy Association, lecturers will make them show positive attitude towards ECPs. Increase in awareness programmes, organization of seminars, refresher courses for pharmacists and sensitization for rural women would also reinforce pharmacists' attitude towards the dispensing of ECPs. The details of this description can be seen in figure 1 of page 50.

Using this model the framework was operationalized by formulating a number of questions on the level of pharmacists' knowledge and they were requested to pick true or false. Among these questions were – ability to differentiate ECP from abortion drug, its effectiveness, whether EC could disrupts an already established pregnancy and the maximum time a woman can use the drug. Pharmacists' attitude was also tested with some attitudinal questions that directed on their moral and religious beliefs towards the drug. They were asked whether they have moral or religious objection to dispensing ECP as over-the-counter drug, if they could dispense ECP as over-the-counter-drug and to patients younger than 18 years old. Respondents were to agree, disagree or be undecided to these statements. The final part, focused on respondents dispensing practices. It was here that pharmacists asked to either pick yes or no response or comment freely to the open ended questions. Some of these included; have you ever dispensed ECP? Are you currently dispensing ECP? The number of patient pharmacists has dispensed ECPs to in the last one week preceding the study and the brand name(s) of ECPs dispensed and confidentiality. All these were used as determining factors in assessing pharmacists' knowledge, attitude and dispensing practices on ECP.

A Pharmacy therefore decides on whether to display ECP on its counter or sell to women in need based on his awareness, attitude towards it and the frequency at which women demand for it –these are the **predisposing factors**. While pharmaceutical rules, religion and beliefs are the **reinforcing factors** that may enable the pharmacist to dispense EC. Government policies toward dispensing EC, what operate in other pharmacy shops are the **enabling factors**. More so, some pharmacists prescribe and counsel patients on EC if they see that their colleagues are doing the same thing or if they are permitted to do so. They can also engage in dispensing the drug if their community supports it.

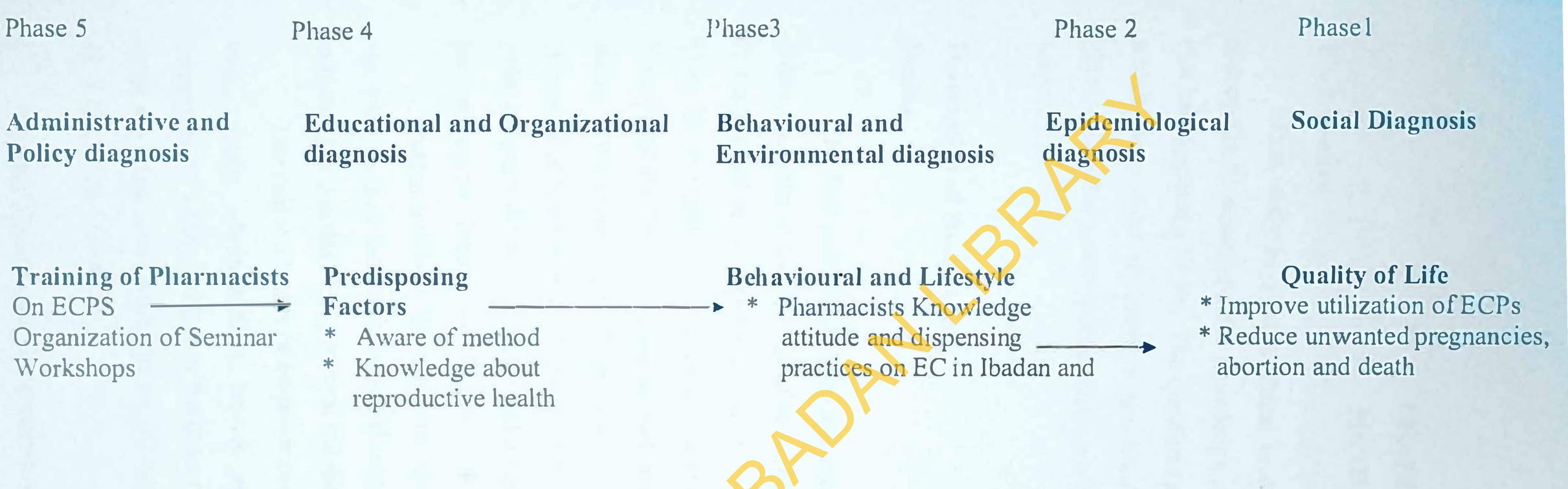


Fig. 2.2: THE PRECEDE/ PROCEED Framework applied to Knowledge, Attitude and Dispensing Practices relating to Emergency Contraceptive Pills among Pharmacists

CHAPTER THREE

METHODOLOGY

Study Design

This study is cross-sectional in design. It was conducted in Ibadan and Lagos metropolis to determine the knowledge and attitude of pharmacists and the proportion that had dispensed ECPs. The questionnaire was developed from pre-test questionnaires which were used to measure the knowledge, attitude and dispensing practices of pharmacists. Two metropolitan cities were used for the study. The cities were Ibadan and Lagos.

Description of Study Area

Ibadan

The first part of the study was conducted in Ibadan metropolis. Ibadan (Ìlú Èbá-Ọdàn, the town at the junction of the savannah and the forest) is the capital of Oyo State. It was created in 1892 under the old Oyo Empire as a war camp for warriors coming from Oyo, Ife and Ijebu. It is the third largest city in Nigeria by population (after Lagos and Kano), and the largest in geographical area. At independence, Ibadan was the largest and the most populous city in Nigeria and the third in Africa after Cairo and Johannesburg. It is located in south-western Nigeria, 78 miles inland from Lagos and is a prominent transit point between the coastal region and the areas to the north. According to 2006 population census results, Ibadan which has 11 local government areas has 2,550,593 people.

Ibadan had been the centre of administration of the old Western Region Nigeria since the days of the British colonial rule, and parts of the city's ancient protective walls still stand to this day. The principal inhabitants of the city are the Yoruba people.

The major sources of employment, in descending order of importance, are retail trade, public administration, service and repair industries, and education. Ibadan comprises 11 LGAs, with 5 in the inner city and 6 in the outer areas. The five (5) inner cities are urban areas while the six (6) outer cities are rural-urban areas making a total of 11 (LGA). The LGAs are:

1 Ibadan North Local Government Area.

2 Ibadan North East Local Government Area.

3 Ibadan South East Local Government Area.

4 Ibadan South West Local Government Area.

5 Ibadan North West Local Government Area.

6 Iddo-Local Government Area.

7 Lagelu Local Government Area.

8 Oluyole Local Government Area.

9 Ona ara Local government Area.

10 Egbeda Local Government Area.

11 Akinyele Local Government Area.

Lagos

Lagos is the most populous city in Nigeria. It has a population of more than nine million (9,000,000) people. Lagos metropolis comprises of several islands and the adjacent mainland areas. Notable among the places on the Island are Victoria Island, Ikoyi and Isale-Eko;

The Mainland are:

1. Ebute-Metta
2. Yaba,
3. Surulere,
4. Apapa,
5. Ikeja
6. Agege.

The metropolitan area, an estimated 300 square kilometers, is a group of islands endowed with creeks and a lagoon. Lagos was projected to be one of the world's five largest cities by 2005.

In an effort to reduce massive urbanization in the metropolitan area, the Federal Government moved the Nigerian capital from Lagos to Abuja in 1991. The original settlers of Lagos, or Eko as it is called by the indigenous population, were of Benin and Awori Eko heritage. The city began in the fifteenth century as a Portuguese trading post exporting ivory, peppers, and slaves. Although Nigeria gained independence in 1960, a

two-and-a-half year civil war broke out in 1967; it subsequently fell into the hands of the British, who began exporting food crops from Lagos after outlawing slavery in 1807.

After the war, migration to the city, coupled with huge waves of refugees and migrants from other African countries, produced a population boom that has continued to the present day. Lagos metropolis is the commercial and industrial hubs of Nigeria, with a GNP that triple any other West African country. Lagos and its metropolitan areas have greatly benefited from Nigeria's natural resources in oil, natural gas, coal, fuel wood and water. Light industry was prevalent in post-independence Nigeria and petroleum-related industry dominated in the 1970's, directly affecting the rapid growth of Lagos.

Study Population

The study population consisted of all registered pharmacists who operate in pharmacy shops and those practicing in hospitals owned by federal and state governments in Lagos and Ibadan. Pharmacists who practice in retail outlet were excluded from the study because they sell in bulk to other pharmacy shops who latter sell directly to customers.

Pharmacists are expected to have the knowledge and abilities to dispense ECPs based on their training in school which lead to the award of Bachelor of Pharmacy (B. Pharm.) degree. They only specialize due to the choice of their place of practice, area of interest or profession.

Sampling Procedure

In Ibadan, all the Pharmacists who practiced in federal, state and private hospitals with those in pharmacy shops were invited to participate in the study. A census of all the pharmacies in Ibadan was conducted by the researcher who found that there were 268 registered pharmacies in the city. This information was obtained from the Ministry of Health, Oyo State, Office of Director of Pharmacists and Pharmacy Society of Nigeria (PSN), Oyo State branch. From the 268 registered pharmacists, only 252 registered pharmacies were still in operation in the city. A total number of 240 questionnaires were distributed, of this number; 145 (57.5%) consenting pharmacists who practiced in the pharmacy shops returned the questionnaires. In Lagos, a review of the list of pharmacists'

Council of Nigeria showed that 624 (28.7%) were registered as community pharmacists out of the 2176 registered in 2004 and the list of hospital ~~pharmacists~~ obtained from The Pharmaceutical Society of Nigeria (Lagos State) also revealed that 412 were employed by the government owned health facilities in the state. Systematic selection of every fifth individual on these lists was chosen to make up to one hundred and ninety two respondents consisting of 132 community and 60 hospital pharmacists in the state. From the 192 given the questionnaire, only 66 (34.4%) consented by returning them. In all a total of 432 questionnaires were administered in the two states, of which 211 were returned and used for analysis (Refer to Figure 2).

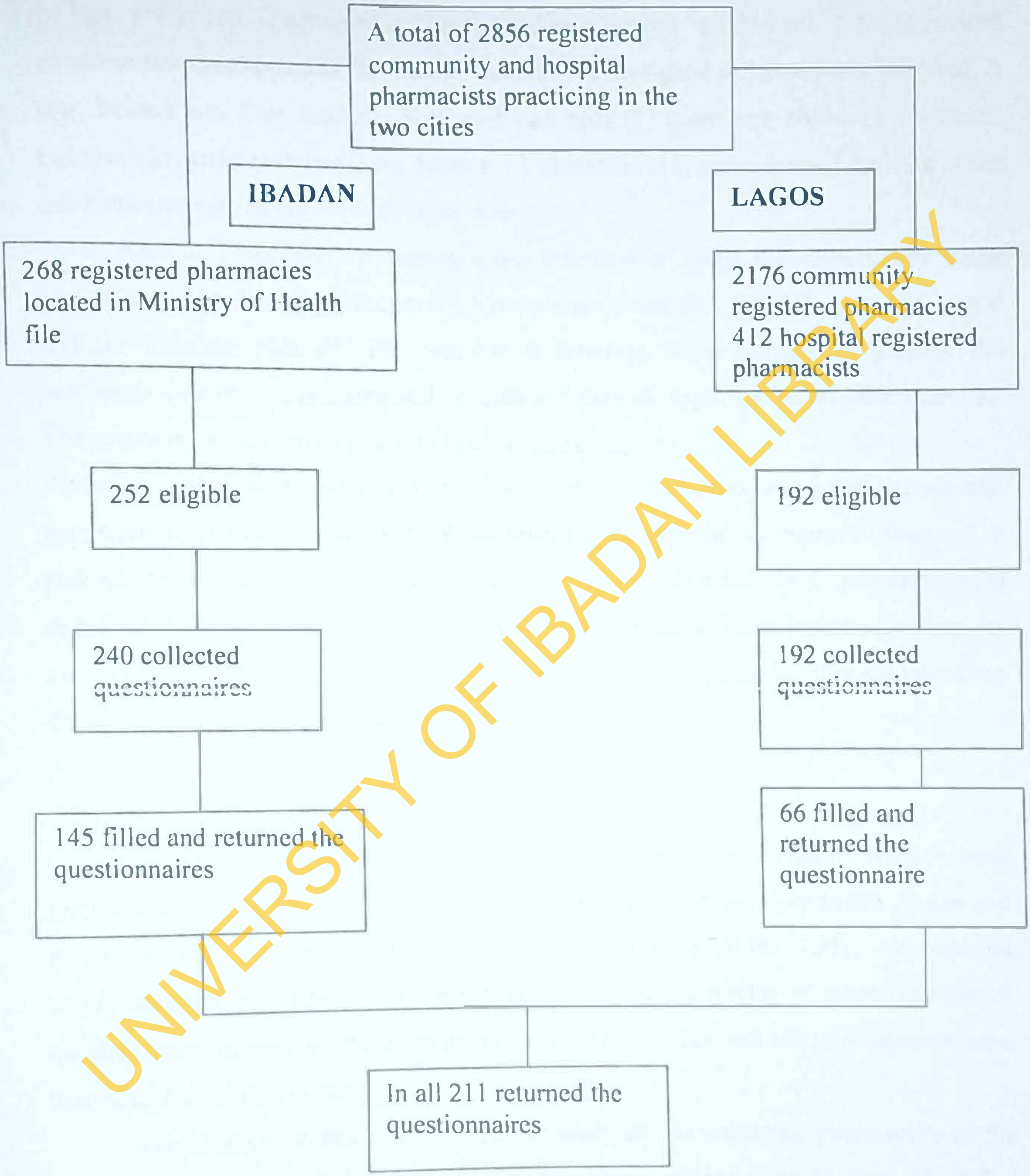


Fig. 3.1: Sampling Procedure for Selection of Pharmacists

Instrument for Data Collection

The pre-tested questionnaire was used to design a 69-item semi-structured questionnaire (see appendix 2). The instrument was designed to be self-administered. It was divided into four sections. Section 1 had nine (9) questions; section 2 contained eighteen (18) statement questions. Section 3 had sixteen (16) and 4 formed the bulk of the questionnaire with twenty-six (26) questions.

Section 1 focused on demographic information about the respondents while section 2 explored respondents level of knowledge about EC, the difference between it and the abortion pills RU-496, whether it interrupt an established pregnancy, the maximum time of use, the risks and benefits and they all require a true or false response. The questions were used to generate hypotheses for the study.

Section 3 contained questions in form of statements aimed at exploring the attitude that the respondents have toward ECPs. Respondents were expected to "agree", 'disagree' or pick not "not sure' to each of the statements. Section (4) asked both open and closed ended questions on respondents dispensing practices of ECPs. These include questions on dispensing of ECP, pharmacists training, number of ECPs dispense in the week preceding the study, the types and likely side effects.

Method of Data Collection

Seven research assistants who had previous experiences on data collection were recruited and trained. They helped with the administration of questionnaire in Ibadan and in Lagos. The contents of the training included purpose of the study, interpersonal communication and data collection procedures. Also, the modes of administration of questionnaires as well as ethical issues such as confidentiality and informed consent were discussed during the training.

Since the study was a cross-sectional study all the practicing pharmacists in the study locations were identified for the study. Some criteria were used for eligibility which included:

(1) Pharmacy must be a retailer which dispenses ECPs to customers.

(2) Pharmacy must have a practicing pharmacist.

(3) Pharmacy must have ECPs in stock at the time of study and must have been dispensing it to customers in the last one month.

The questionnaire took an average of 35 minutes to complete. After the filling of questionnaire, the interviewer thanked the interviewee.

Validity and Reliability

Validity and reliability describe expected measure and the accuracy of the research measuring instrument. The following steps were taken to ensure the validity and reliability of the instrument. First, a draft of the questionnaire was developed with the help of lecturers and colleagues in the Department of Health Promotion and Education, and some practicing pharmacists in Ibadan. Secondly, a pilot study was carried out in a similar location (Ibadan North Local Government Area) which has similar characteristics with the study area to determine its effectiveness. Thirdly, a revision was made based on the analysis of the results of the pre-test. Forty pharmacy shops were used for the pre-tested questionnaires. A test-retest reliability test was done with the pre-test questionnaires which gave (p=0.906). The pre-tested questionnaires were now used to develop a more accurate version which was now administered to the main study participants. Finally, research assistants were trained for data collection. A total of 432 questionnaires were administered out of which 211 completed questionnaires were returned. They were administered under the supervision of the researcher.

Ethical Considerations

The questionnaire observed the rules of ethics by obtaining a formal informed consent from the research participants. Each questionnaire contained a consent form which respondents were asked to read and sign (see appendix 1).

A written consent was obtained although it did not ask for the names of the participants but required their signatures and date. They were informed that participation was voluntary and that data collected would be used solely for research purposes. Anonymity and confidentiality of responses were ensured.

During data administration, each respondent was given permission to distant him/herself from people around. This helped in maintaining confidentiality of the

respondents. Only respondents who willingly agreed to participate in the study were administered questionnaires on. This made the purpose of informed consent achieved.

Data Management and Analysis

The data collected was checked for completeness and accuracy in the field. Serial number was assigned to each question for easy identification and for correct data entry and analysis. This helped to develop a coding guide which was used to code each question. Analysis was done using the Statistical package SPSS Version 12.00. The questionnaire contained a total of 18 questions on knowledge, 16 questions on attitude and 26 questions on dispensing practices. They were each given a score/point. Two points was given for every correct response while one point was awarded for every wrong response during the analysis. Variables on Knowledge were scored in this manner: Two marks was given to correct question, while incorrect question had 0 mark. The total maximum obtainable score was 18 points and 0 point for minimum. Mean scores were computed and compared with related variables.

Equally, each positive attitudinal question had two marks, while negative attitude had 1 mark with a total maximum obtainable score of 16 points and 0 point for minimum obtainable score. Also, questions which require agree, disagree and not sure were scored as follows: Agree-Two marks, Disagree-One mark and not sure-O mark. Mean scores were generated along side frequencies and cross-tabulation of some important variables was done.

CHAPTER FOUR

RESULTS

The results of this research are presented systematically, starting with the socio-demographic information of the respondents, their knowledge, attitude and their dispensing practices relating to ECPs. Also, results on mean scores of pharmacists' knowledge, attitudes are presented in line with their frequencies, all in quantitative ways.

Demographic Characteristics of Respondents

Table 4.1 shows the socio-demographic characteristics of the respondents. There was a total of 211 respondents who collected and returned the questionnaires. Their ages ranged from 22-72 years with a mean of 38.8 ± (10.92) years. There were more males (57.3%) than females (42.7%). Most of the respondents were Yoruba (89.1%) and followed by Ibo (5.7%). Majority of the pharmacists practiced Christianity (75.4%); while (22.7%) were Muslims. Seventy-six percent were married while only 21.8% were still single. Seventy-two percent of the respondents practiced in pharmacies (71.6%), and (28.4%) in hospitals. Most of the respondents (65.9%) had bachelor degrees, (21.3%) had masters degrees, while only (1.9%) had postgraduate degree. Thirty-eight percent of the respondents practiced as staff, (34.1%) were manager/supervisor, while (25.6%) were owners of pharmacy shops. Only 17 pharmacists had practiced for more than 30 years while, 194 had less than 30 years of practiced.

Table 4.1: Socio-Demographic characteristics of survey respondents (211)

Characteristics	No	%
Sex		
Male	121	57.3
Female	90	42.7
Ethnic group		
Hausa	1	0.5
Yoruba	188	89.1
Igbo	12	5.7
Others	10	4.7
Marital Status		
Single	46	21.8
Married	160	75.8
Others *	3	1.4
No response	2	1.0
Educational Qualification		
B (pharm)	139	65.9
Masters of Science/Business admin	45	21.3
Doctor of Pharm	4	1.9
Doctor of philosophy	1	0.5
Others +	19	9.0
No response	3	1.4
Religion		
Christianity	159	75.4
Islam	48	22.7
Traditional	1	0.5
Others	1	0.5
No response	2	0.9
Place of Practice		
Hospital	60	28.4
Pharmacy	151	71.6
Primary position		
Staff	80	37.9
Manager/ Supervisor	72	34.1
Owner	54	25.6
Others	5	2.4

Note: * Widow or Widower + Pharmacists Technicians, Other Professions

Knowledge about Emergency Contraceptive Pills

This section described the responses of pharmacists to the eighteen questions on knowledge of ECPs which could be found in Appendix 2. The questions required Yes/No responses and have been divided into three segments for easy discussion; these could be found in tables 4.2, 4.3 and 4.4. A higher percentage of the respondents (23.7%) did not know that Ru-486 the abortion pills is not the same thing as oral contraception compared with 17.5% who knew with 19.7% in Lagos and 16.6 in Ibadan; while 58.8% were not sure of the right answer. This result correlates with that of Pruitt and Mullen (2005) in a survey of newspaper coverage of EC from 1992-2002, which found that 44.5% of newspaper articles confused EC with abortion drug and 32% inaccurately described how it works. Out of the respondents who correctly differentiated ECPs from abortion drug in this study, only 23.2% knew about ECPs from classroom. More than half of the respondents (55.0%) knew that ECPs will not cause abortion. Thirty-six percent of the respondents in Lagos correctly answered that ECPs would not interrupt already established pregnancy compared to knowledge of 46.2% of their counterparts in Ibadan. On whether ECPs would not cause abortion, less than half (47.6%) respondents got the questions correctly while more than half (71.2%) of Lagos respondents knew it would not cause abortion. In the same vein, Lagos pharmacists had better knowledge (56.1%) on the approved type of ECPs when compared with those in Ibadan with (35.2%) as seen in table 4.2.

Table 4.2: Proportion of Pharmacists with correct knowledge of EC by location

Statements	Lagos N=66 %	Ibadan N=145 %	Total N=211 %
Oral Emergency contraception is also known as RU-486	19.7	16.6	17.5
Emergency contraceptive pills interrupt an established pregnancy	36.4	46.2	51.7
Emergency contraception will not cause an abortion	71.2	47.6	41.7
The only approved oral emergency contraceptives are combination estrogen/progestin products	56.1	35.2	41.2
If a woman is more than 2 weeks late for a contraceptive injection, she cannot use oral emergency contraceptives.	33.3	51.7	40.3
Known pregnancy is the only contraindication for oral emergency contraception.	60.6	50.3	80.1
When interviewing a patient to assess the need for oral emergency contraception, it is important to determine when last menstruation occurred	72.7	83.4	74.9
Blood clots, migrains and liver disease are absolute contraindication for progestin oral emergency contraception	66.7	69.0	68.2
If a person requesting emergency contraception is under the age 18, a parent or guardian has to approve it in order to prescribe it	72.7	82.8	70.6
Emergency contraceptive pills can be used with more than one act of unprotected sex	54.5	62.8	60.2
Emergency contraceptive pills are very effective when used as a regular contraceptive method	34.8	53.1	47.4
Emergency contraceptive pills cannot be taken before intercourse	34.8	53.1	51.2
If during interviewing process you find out a sexual assault occurred, do you think you have to notify a proper authority?	75.8	65.5	68.7

Knowledge of Pharmacists on Mode of Action of ECPs

Generally the pharmacists from the two cities had low knowledge on the mode of action of ECPs. The question on the maximum time a woman can take ECPs and expect optimum result; respondents in Lagos (51.2%) had average knowledge while Ibadan (36.6%) scored below average with a total of 41.2% for the two cities. Most of them did not know that Meclizine could be used to manage the side effects and contraindication of ECP as only 28.8% in Lagos and 36.8% in Ibadan had correct knowledge of it.

When requested to provide answer to the question on the maximum time ECPs could be used to provide effective protection against pregnancy, respondents from both Lagos (65.2%) and Ibadan (82.8%) had above average knowledge score and they also knew that ECP is 75% effective in reducing the risk of pregnancy. Please see table 4.3 for more information.

Table 4.3: Proportion of Pharmacists with correct knowledge on Mode of Action of EC

Statement	Lagos N=66 %	Ibadan N=145 %	Total N=211 %
The maximum time a woman can take emergency contraceptives and expect effectiveness is 5days or 120 hours after unprotected sex.	51.2	36.6	41.2
If the next menstrual cycle does not begin in the next 21 days, the patient should follow up with a pregnancy test	78.8	73.1	74.9
Emergency contraception effectiveness is optimal when used within 24 to 48 hours of unprotected sexual intercourse	65.2	82.8	77.3
Meclizine 500mg cannot be used to manage nausea and vomiting associated with emergency contraception	28.8	33.8	32.2
Use of emergency contraceptives reduces pregnancy risk by at least 75%	69.7	75.9	73.9

Respondents' Knowledge on Emergency Contraceptive Pills by Gender, Location, Age-Group and Years of Practice

Respondents overall mean knowledge score was 8.9± 2.6 out of 18. No significant difference was found in means of knowledge score of male (9.0 ±2.6) and female (8.9 ±2.6) respondents' ($p>0.05$). Younger pharmacists aged less than 40 years had higher mean knowledge of 9.4 compared to those older that had 8.4 ($p<0.05$). Respondents who had practiced for up to 30 years had higher mean knowledge of 9.1 when compared to those with higher years of practice 7.7 ($p<0.05$). Pharmacists who practiced in Ibadan had higher mean knowledge score (9.0) than their counterparts from Lagos (8.9) ($P>0.05$). The mean score for pharmacists age-groups were assessed and it ranged from (6.8) for those who were 60 years and above, (8.2) at age-group 41-50, (8.7) at age-group 51-60, (9.1) at age-group 21-30 and (9.6) at age-group 31-40. The difference was significant ($p<0.05$). The high mean score values seen at age-groups 21-30 and 31-40 are expected as these are the very active age-group and most pharmacists who had just finished the degrees fall into these groups. They are also more likely to dispense the drugs. See tables 4.4 for more information

Pharmacists practicing in Pharmacy shops (8.3) had a lower mean score compared to those in hospitals (9.3). This is contrary to expectation for those practicing in pharmacy shops are closer to women and girls in need than those in the hospitals. There was no significant difference ($p>0.05$). Respondents who speak Igbo (7.1) had the lowest mean score, followed by Yoruba (9.1) and others (9.6) but it was not significant ($p>0.05$). Mean scores of respondents ranged from doctoral degree (10.0), Bachelor degree (8.9) and Masters degree (8.9). More of respondents mean scores on religion, educational qualification could be found on table 4.5.

Table 4.4: Respondents' knowledge on Emergency Contraceptive Pills by Gender, Location, Age Group and Years of Practice.

Demographic Variables	No	Mean	S.D	P-value
Gender				
Male	121	9.0	2.6	0.729
Female	90	8.9	2.8	
Location				
Ibadan	145	9.03	2.7	0.440
Lagos	66	8.86	2.5	
Age in Group				
21-30	57	9.05	2.7	0.018
31-40	81	9.62	2.3	
41-50	39	8.15	2.7	
51-60	26	8.73	3.1	
61 and above	8	6.75	2.8	
Years of Practice				
1-10	119	9.26	2.5	
11-20	45	9.07	2.6	
21-30	34	8.47	3.0	0.89
31-40	11	7.09	2.5	
41-50	2	9.00	0.0	
Total	211	8.98	2.6	

Note: The percentages of pharmacists who did not respond or were not sure of answers were not included.

Table 4.5: Respondents' Knowledge on Emergency Contraceptive Pills by Religion, Educational Qualification, Ethnic Group and Place of Practice.

Demographic Variables	No	Mean	SD	P-Value
Religious Group				
Christianity	159	8.8	2.6	0.082
Islam	148	9.5	2.6	
Educational Qualification				
Bachelor of Pharmacy	139	8.9	2.5	
Masters of Science/Business	45	8.9	3.1	0.878
Doctor of Pharmacy	5	10.0	2.7	
Others	19	9.1	2.7	
Ethnic Group				
Yoruba	188	9.1	2.6	
Igbo	12	7.1	3.6	0.144
Others	11	9.6	2.0	
Place of Practice				
Hospital	60	9.3	2.6	0.197
Pharmacy Shops	151	8.3	2.7	

Attitude towards the dispensing of Emergency Contraceptive pills

In order to explore the attitudes of respondents toward the dispensing of ECPs, they were asked sixteen 16 attitudinal questions. Table 4.6 shows their responses.

A higher percentage (89.5%) of respondents believed that pharmacists are important point of patients contact to ECPs than other health care providers. Ninety-three percents of respondents agreed they have professional responsibility to become educated about dispensing ECPs to clients, of this number, (67.6%) said they would refer clients to another pharmacist who dispense ECP, (32.4%) disagree that they would not if their employers did not allow them to dispense ECP to clients.

More than half of the respondents (66.3%) agreed that they needed certification before they could dispense ECP, (33.7%) disagree. When asked whether the use of ECPs would decrease adherence to regular contraception, (55.1%) agreed, 44.9% disagreed.

Of the overall question on moral and religious objections, a total of (46.9%) pharmacists did not have moral objection to dispensing ECPs, (38.9%) did, while (14.2%) did not respond. When asked about their religious beliefs, (41.2%) had religious objection, while (58.8%) did not. Majority of the respondents (70.6%) said they would not dispense ECPs to patients younger than 18 years, and only (28.4%) supported ECPs as over-the-counter drugs. Other responses on attitude of pharmacists toward ECPs are presented in table 4.6.

Table 4.6: Respondents Attitude on Emergency Contraceptive Pills

	Lagos (66)		Ibadan N=145		N = 211
Attitudinal Items	**Agree**	**Disagree**	**Agree**	**Disagree**	**Total**
Pharmacists are an important point of patient access to emergency contraceptive pills when other health care providers are not available.	51	11	128	10	200
I have a professional responsibility to become educated about pharmacists dispensing ECP.	53	6	126	7	192
I would refer patient to another pharmacist who prescribe ECP if my employer would not let me prescribe it.	33	22	84	34	173
I am concerned about the recognition of ECP failure and follow-up by the patient.	51	9	108	15	183
I am concerned about the dispensing of ECP without knowledge of the patient's medical history.	39	20	92	37	188
Emergency contraception prescribing by pharmacists would decrease health care cost.	44	20	69	41	171
Providing adequate counseling on ECP is my responsibility as a pharmacist.	45	17	124	10	196
Emergency contraceptive will promote unsafe sex.	32	23	69	53	177
I would like to be certified to dispense ECP.	39	18	71	38	166
The use of ECP will decrease adherence with regular oral contraceptive.	35	25	62	54	176
I have a moral objection to dispense ECP.	35	24	47	75	181
I have a religious objection to dispense ECP.	30	27	45	80	182
I am reluctant to dispense ECP because of the potential side effects.	28	34	53	69	184
ECP should only be given in the case of rape and incest.	23	40	30	102	195
I can dispense ECP to patients younger than 18 years old.	14	46	21	103	184
ECP should be available over the counter without prescription.	23	41	37	97	198

NB: The no of respondents who were not sure and who did not respond have been removed.

Respondents Attitudes relating to ECPs by Gender, Location, Age and Years of Practice

The overall mean attitude of the respondents was 8.8 (±2.7) out of 16 points. The mean attitude score of pharmacists with less than 30years of practice was greater (8.7) (±2.7) than that for pharmacists with higher years of experience (7.3) ($p=0.08$). Males (8.8) had more positive attitude towards dispensing EC than females (8.6) ($p>0.05$). Also, respondents from Ibadan (8.9) had more positive attitude than those from Lagos (8.4).

There was no significant difference between respondents attitude and age-group ($p<0.05$). Respondents mean scores increases from 7.4 to 9.6 (Table 4.7).

Respondents' attitude relating to religion, educational qualifications, ethnic groups and place of practice were also assessed. Pharmacists who had masters of Science had the least mean score (8.4) while those with doctoral degree in pharmacy had the highest mean score (10.0). There was no significant difference in respondents' educational qualifications ($p>0.05$) (Table 4.8 shows the details).

Table 4.7: Respondents' Attitude relating to Emergency Contraceptive Pills by Gender, Location, Age Group and Years of Practice.

Demographic Variables	No	Mean	S.D	P-value
Gender				
Male	121	8.8	2.7	0.479
Female	90	8.6	2.8	
Location				
Ibadan	145	8.9	2.8	0.118
Lagos	66	8.4	2.5	
Age in Group				
21-30	57	7.9	2.6	0.002
31-40	81	9.6	2.3	
41-50	39	8.8	3.3	
51-60	26	8.2	2.7	
61 and above	8	7.4	2.4	
Years of Practice				
1-10	119	8.6	2.5	0.08
11-20	45	9.7	2.9	
21-30	34	8.7	2.7	
31-40	11	6.6	3.1	
41-50	2	7.5	3.5	

Table 4.8: Respondents' Attitude relating to Emergency Contraceptive Pills by Religion, Educational Qualification, Ethnic Group and Place of Practice.

Demographic Value	No	Mean	SD	P-Value
Religion				
Christianity	159	8.9	2.7	
Islam	48	8.8	2.8	0.298
Educational qualification				
Bachelor of Pharmacy	139	8.8	2.6	
Masters of Science/Business	45	8.4	2.9	0.546
Doctor of Pharmacy	5	10.0	2.0	
Others	19	9.1	3.2	
Ethnic group				
Yoruba	188	8.8	2.7	
Igbo	12	7.2	3.1	0.40
Others	11	9.7	2.4	
Place of Practice				
Hospital	60	8.7	2.7	0.831
Pharmacy Shops	151	8.8	2.7	

Dispensing practices on Emergency Contraceptive Pills

Overall (79.1%) of the respondents reported that they had ever dispensed ECPs, (28.9%) had never. By location, (69.4%) had ever dispensed in Lagos and (77.4%) in Ibadan. About half (53.1%) claimed they had time in their current practicing setting to dispense ECPs to patients, (46.9%) did not. Majority (70.6%) of the respondents had ECP in stock at the time of study but only (27.0%) have a private place for counseling and dispensing of ECPs. Also, overall (60.7%) felt that there is a need for training before a pharmacist can adequately dispense ECPs to patients but only (17.5%) have ever participated in such training, while 65.9% signified their intention to participate if such training is available see tables 4.9 and 4.10. A lot of the respondents (73.5%) said they were comfortable dispensing ECPs to clients who come to them but only (22.3%) asked questions on family background from clients while dispensing ECPs to them. Out of the (22.3%) who asked questions on family background, (11.8%) did so in Lagos while (40.2%) did so in Ibadan. A total of (53.1%) said they have time in their current practice to dispense ECPs with (59.7%) who claimed that there has been an increase in demands of ECP use.

Also respondents' were assessed based on their places of practice. Majority (72.4%) in Lagos said they had time in their current practicing practice to dispense ECPs than their Ibadan (57.4%) counterparts. More than half (63.1%) of pharmacists in Ibadan agreed that they asked reasons from clients before dispensing ECPs compared to (22.7%) who did the same thing in Lagos. The details of respondents dispensing practices on different places of practice could be found on tables 4.9 and 4.10.

Table 4.9: Respondents' Opinions on questions relating to Dispensing Practices on Emergency Contraceptive Pills

	Lagos (66)		Ibadan (145)	
Question	**Yes(%)**	**No(%)**	**Yes(%)**	**No(%)**
Do you think a pharmacist should dispense ECP?	91.9	8.1	84.6	15.4
Have you ever dispensed ECP before?	69.4	30.6	77.4	22.6
Do pharmacists require training before they can adequately dispense ECP to patient?	48.4	51.6	73.7	26.3
In the past one month have women sought your advice about pregnancy and contraceptive?	66.1	33.9	57.5	42.5
During ECP dispensing to your last patient, did you ask client questions on family background?	11.8	88.2	40.2	59.8
While dispensing ECP do you encourage women/girls to check back in case of side effects?	62.3	37.7	71.8	28.2

Table 4.9: Respondents' Opinions on questions relating to Dispensing Practices on Emergency Contraceptive Pills

	Lagos (66)		Ibadan (145)	
Question	**Yes(%)**	**No(%)**	**Yes(%)**	**No(%)**
Do you think a pharmacist should dispense ECP?	91.9	8.1	84.6	15.4
Have you ever dispensed ECP before?	69.4	30.6	77.4	22.6
Do pharmacists require training before they can adequately dispense ECP to patient?	48.4	51.6	73.7	26.3
In the past one month have women sought your advice about pregnancy and contraceptive?	66.1	33.9	57.5	42.5
During ECP dispensing to your last patient, did you ask client questions on family background?	11.8	88.2	40.2	59.8
While dispensing ECP do you encourage women/girls to check back in case of side effects?	62.3	37.7	71.8	28.2

Table 4.10: Respondents' Dispensing Practice on Demand, Privacy and Comfort

	Lagos (66)		Ibadan (145)	
Questions	**Yes (%)**	**No (%)**	**Yes (%)**	**No (%)**
Do you have time in current pharmacy practice setting to dispense ECP to patients?	72.4	27.6	57.4	42.6
Has there been an increase over time in demand of ECP use?	82.5	17.5	68.7	31.3
Do you ask reasons for ECP demand from patients before dispensing it?	22.2	77.8	63.1	36.9
Does your pharmacy a private place for ECP dispensing?	34.5	65.5	31.4	68.6
Are you comfortable counseling women about ECP?	75.9	24.1	92.5	7.25

Respondents' Dispensing Practice by Location, Gender and Place of Practice

Tables 4.11 and 4.12 compared the dispensing practices of pharmacists by location, gender and place of practice. Table 4.11 explained pharmacists who had ever dispensed ECPs by location, gender and place of practice while table 4.12 showed those who were currently dispensing ECPs also by location, gender and place of practice in the week preceding the survey. Table 4.11 showed that 95 male and 57 female had ever dispensed ECPs but the difference was significant ($p>0.05$) while by location, the result showed a significant difference as $p=0.032$.

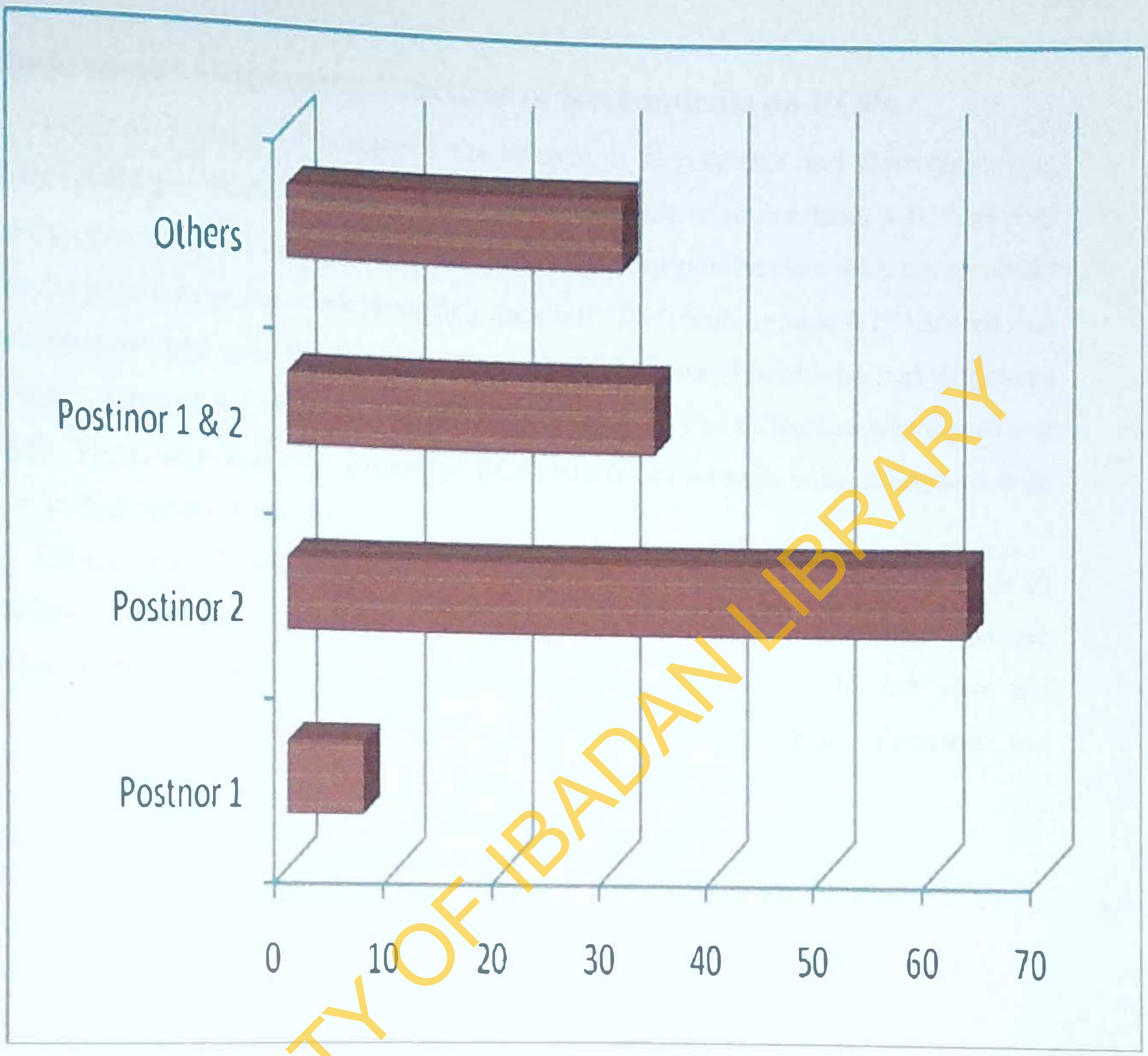
On currently dispensing ECPs, the result showed significant difference by place of practice $p=0.03$. More male (95) than female (62) were currently dispensing ECPs but no significant difference (Table 4.11 and 4.12).

Table 4.11: Respondents' Ever Dispensed Practice by gender, location and Place of Practice

Demographic Variables	Ever Dispensed		X^2	P-value
	Yes	No		
Gender				
Male	95	26	1.480	0.477
Female	57	24		
Location				
Ibadan	106	31	6.896	0.032
Lagos	43	19		
Place of Practice				
Hospital	36	24	21.761	0.000
Community	117	28		

Table 4.12: Respondents' Current Dispensing Practice by gender, location and Place of Practice

Demographic Variables	Current Dispensing		X^2	P-value
	Yes	No		
Gender				
Male	95	26	2.510	0.151
Female	62	28		
Location				
Ibadan	112	33	1.955	0.176
Lagos	45	21		
Place of Practice				
Hospital	36	24	9.596	0.03
Community	117	28		



***Others: Microgynon, Nordetta**

Figure 4.1: Types of Emergency Contraceptive Pills Dispensed by Pharmacists in the week Preeceding the surveys

Attitude versus Dispensing Practices of Respondents on ECPs

Table 4.13 and 4.14 compared the attitude of respondents and their dispensing practices relating to ECPs. Table 4.13 analyzed the attitude of respondents with their ever dispensing practices, while table 4.14 showed attitude of pharmacists with their current dispensing practices in the week preceding the study. The result in table 4.13 showed that 149 pharmacists had ever dispensed ECPs while 50 had not. Those who had dispensed had a mean value of 9.2 while those who had not had 7.8. The difference was significant ($p<0.05$). Those who had ever dispensed ECPs had better attitude when compared with those who had not see table 4.13.

On currently dispensing practices of respondents on ECPs in table 4.14, only 80 respondents were currently dispensing against 131 who were not. Those who are currently dispensing had a higher mean score of 9.3 than those who 8.4 were not dispensing. There was also significant association between currently dispensed and attitude of respondents ($p< 0.05$) (Table 4.14).

Table 4.13: Respondents' Attitude and Ever Dispensed of ECP

Ever Dispensed ECPs	Attitude			
	No	Mean	SD	P-Value
Yes	149	9.2	2.5	0.02
No	50	7.8	2.8	

Table 4.14: Respondents' Attitude and Current Dispensing practice of ECP in the week preceding the study

Currently Dispensing ECP	Attitude			
	No	Mean	SD	P-Value
Yes	80	9.3	2.2	0.047
No	151	8.4	2.9	

Testing of Hypotheses

In this research work, some hypotheses were tested. Mean score Knowledge of respondents on ECPs was tested against variables such as respondents' gender, age, location ethnic group, religion, and year of practice.

Hypothesis 1 "states that there is no significance difference between the gender and knowledge of respondents on ECPs.

It was observed that the mean knowledge of male (9.0) was higher than their female counterparts (8.9); however the difference is not significant; therefore the null hypothesis is rejected. The detail result of the hypothesis is presented in tables 4.4 and 4.5.

Hypothesis 2 was between age and knowledge of ECPs. It state that "there is significant association between the age and knowledge on ECPs". Pharmacists whose ages were less than 40 years had higher mean score of (9.4) than those older (8.4). The knowledge of respondents on ECPs was seen to be significantly associated with their ages (p=0.008). Tables 4.4 and 4.5 highlight the details. The null hypothesis was therefore rejected.

For hypothesis 3, there is no significant association between location and knowledge of respondents on ECPs. Although pharmacists from Ibadan had higher mean scores, the difference was not significant; therefore, the null hypothesis is accepted.

The fourth hypothesis states that 'there is no significant association between years of practice and knowledge of ECP drugs". Table 4.4 revealed that respondents' knowledge on ECP drugs was observed not to be significantly associated with the years of practice (p= 0.037). Pharmacists who had practiced for less than 30years had a better knowledge (9.1) when compared with those who had more years of practice (7.6).

For the fifth hypothesis, "there is no significant association between the gender of the respondents and their attitude towards the dispensing of ECP". The male respondents (8.8) had higher mean score attitude compared with their female counterparts (8.6). The result indicated on table 8 showed that there is no significant association between these two variables as p=0.479, so, accept null hypothesis.

The sixth hypothesis states that "there is no significant association between the age of the respondents and their attitude to ECP dispensing". Tables 4.7 and 4.8 showed that these variables have no significant association as (p= 0.475). Hypothesis 7 states that

"there is no significance association between location and attitude of the respondents on ECP". Also, the mean attitude of respondents in Ibadan (8.9) was higher than Lagos (8.4) respondents. Although attitude of respondents was positive towards the dispensing of ECP drugs, there is no statistical association between the two variables as p=0.12. See table 8 for details.

The seventh hypothesis states that "there is no significant association between the years of practice and attitude towards ECP". Pharmacists who had practiced for less than 30 years had better attitude (8.8) to dispensing ECP when compared with their counterparts with higher years in practice (7.3).

The relationship between respondents' knowledge on ECPs, their attitude, and their dispensing practices relating to the drug across gender, place of practice, ethnic group, religion, and primary setting of practice; age-group and years of practice are highlighted in Tables 4.4, 4.5, 4.7 and 4.8 respectively.

CHAPTER FIVE

DISCUSSION

The explanation of the results presented in the previous chapter is given in this chapter. First, the socio-demographic profiles of the respondents are discussed. Secondly, pharmacists' knowledge on the drug using specific questions on its mode of actions is explained. Thirdly, respondents' attitude and dispensing practices relating to ECPs are explained with comparison across the age-group, years of practice and primary setting of practice. Finally, conclusion and recommendation are given.

Socio-Demographic Profile of Respondents

The demographic characteristics of pharmacists reflect their social features. Among these are respondents' primary setting of practice (pharmacy shops and hospitals); ethnic groups, and the years of been in practice. A large proportion of the respondents (65.9%) had bachelor degree as their highest level of educational qualification. This is not unusual as the majority of the respondents needed Bachelor degree to practice whether as community or hospital pharmacists. More than halt (71.6%) of the respondents practiced in pharmacy shops but only (28.4%) practiced in hospitals. The reason being that clients find it easy to get ECPs from Pharmacy shops than hospitals where they could be gotten as over-the-counter drugs and that most hospitals do not dispense ECPs to clients, they only give information. Pharmacy shops also open in the evening and at weekends when most hospitals and clinics might have closed. The majority (89.1%) of the respondents is Yoruba; this is due to the fact that Yoruba is the dominant ethnic group in the study area and this is expected.

More than half of respondents (75.4%) practice Christianity, while only (22.7%) were Muslims. There is a strong reason for this as Muslims religion does not support the use of ECPs for it is referred to as abortifacient, although some Christian sects also believe in this but the proportion is small and it is strong among Catholic. The marital status of respondents showed that most of them (75.8%) were married. This is expected as more than half (56.9%) of respondents were between the age group of 30-50 years. More so, a larger proportion of the respondents were either staff (37.9%) or manager/supervisor (34.1%). This could be due to the fact that establishing a pharmacy

shop or hospital required some processes among which are registration and financial implications.

The age profile of the pharmacists showed that their ages ranged 21-72 years; with a mean of 38.8 years (±2.3). Majority fell within the 21-40 years age bracket. This age range fell in line with the expected ages of practicing pharmacists. There is no significant difference between male and female respondents ($p>0.05$). This explained that pharmacy is a profession of both male and female.

Knowledge on Emergency Contraceptive Pills

Overall, the pharmacists surveyed in this study had inadequate knowledge of EC; they obtained 8.9 out of 18 point EC Knowledge score (Sutkin et al., 2006; Conard and Gold, 2004). The low level of knowledge of the pharmacists surveyed may be attributed to the fact that (43%) had religious objection, (47%) had moral objection to dispensing EC (Matthew et al.,2006); when asked whether ECP interrupts an already established pregnancy or cause abortion, less than half (43.1%) did not know that ECP does not interrupt already established pregnancy, and a little more than half (55.0%) knew that it does not cause abortion (Hellerstedt and Riper, 2005). Moreover, a few (32.2%) of the respondents knew that Meclizine 500mg could be used to manage contraindication such as nausea and vomiting associated with EC.

Of the three sources of continuing education provided in the questionnaires; live presentation, paper based education and web based education, only (18.5%) of respondents combined the three sources of continued education methods. This might be attributed to the reasons why respondents had low knowledge on ECP. The finding differs from the result of Kelly (2005) who reported that pharmacists from Alabama USA had above average level of knowledge (75% knew the correct dosing schedule and 70% knew the side effects).

Going by the professional of pharmacists and provision of ECP as over-the-counter drug one would expect that pharmacists should have adequate knowledge of the drug but only (47.4%) of them could differentiate between ECPs and oral contraception in the overall result. In the same vein, only (17.5%), knew that EC is not the same with oral contraception, while (58.8%) were not sure, so, did not respond. These findings

agree with those of Kristi and Wendy (2005) who found that thirty-seven per cent of surveyed pharmacists in South Darkota did not know that ECPs and OCPs have similar mechanism action. The reasons for this low knowledge levels might be because EC is a new drug in the market and that it is not included in the pharmacy curriculum.

Although overall pharmacists had inadequate knowledge of EC, younger pharmacists had superior knowledge of EC than older ones. This may be due to the fact that younger professionals are more likely than older ones to participate in continue education including attending conferences, seminars and workshops.

Of all the knowledge questions, pharmacists had least knowledge on how to differentiate abortion drug RU-486 from ECPs as only (17.5%) of them got the question correctly. This support the survey carried by Kaiser Family Foundation (2004) which reported that only one in four reproductive age women in California knew that EC pills are different than the medical abortion drug, RU-486, an information they would have received from health providers-mainly phamacists. This could be due to pharmacists' low knowledge about ECPs, and the reason that most of them believed that ECP causes abortion whereas this question is very important because if pharmacists could not differentiate between ECP and abortion drug it would be difficult for them to dispense it.

Attitude towards emergency contraception

It was observed that more than half (51%) of the respondents did not have religious objection to dispensing ECP while only (39%) showed moral objection. Overall attitude towards dispensing ECP was positive; this might be due to the fact that EC could be purchased as over-the-counter drug and at a cheap price. However, the negative religious and moral attitude was noticed among Muslims and Catholic respondents. This was observed during the administration of the questionnaires as some of the respondents intentionally omitted and did not fill the dispensing practices section of the questionnaires.

Furthermore, this study also strengthens the widely accepted fact that pharmacists are always the first point of contact when other health care providers are not available as most of them agreed to this fact when asked, a statement which is in line with Dianna et al., 2006, Kaiser Family Foundation, 2005 and Jacqueline et al., 2001. For majority

(84.8%) of the respondents agreed that they are the first point of patient access to ECP when other health care provider are not available, especially on weekends. Not only did they have this knowledge, but the same percentage (84.8%) of respondents also said they have professional responsibility to become educated about the drug. Their willingness showed the importance of the drugs and their profession as (55.5%) of those who might not be willing or permitted by their managers to dispense the drug said they would refer clients to another pharmacist who dispense the drug.

With the fact that some respondents had religious and moral objection to dispensing ECPs, there is hope that they too could have a change of mind as data showed that almost all (84.8%) of them agreed that they have professional responsibility to become educated about the drug. Seventy-five percent respondents showed concern about the recognition of ECP failure and it's follow-up. In addition to these, when asked whether they would like to be certified so as to dispense ECPs to clients, two-third of the respondents agreed (Matthew et al., 2006).

Although respondents had positive attitude toward ECPs, majority (70.6%) had said they would not dispense ECP to patients younger than 18 years old (Kelly et al., 2005) and of those who would dispense it, three-quarter said they could only do this if approval or informed consent (verbal or written) is guaranteed by either the parent or the guardian. Meanwhile, this factor could be responsible for why more than half (65.4%) of them did not want ECPs as over-the-counter drug, though majority (67.3%) said ECPs should not be restricted to people with case of rape and incest (Goliath, 2007). Moreover, their decline in dispensing ECPs to patients younger than 18 years could be a factor of high rate of teenage pregnancy, abortion, complications and pregnancy related death in the country. Respondents' attitudes are in agreement with other studies such as Kelly et al, 2005, National Women Law Centre, 2005, National Conference of State Legislatures, 2005 and Kaiser Family Foundation, 2005 which showed that pharmacists have negative attitude towards dispensing ECPs to adolescents. Because pharmacists working in the research areas have negative attitudes towards ECPs as over-the-counter-which is against the law of their profession, many women may have less access to the medication.

Dispensing Practices of Emergency Contraceptive Pills

Majority (79.1%) of the respondents believed they should engage in dispensing ECP while most of them (71%) reported that they had ever dispensed EC; only (37.9%) did so the week preceding the survey with mean of 1.77 (±3.318). When pharmacists attitude was compared to their dispensing practice of ECP, those who had ever dispensed (9.2) the drug had positive attitude than those who had not (7.8) at the same time, those who were currently dispensing (9.3) the drug the week preceding the study had positive attitude than those who were not (8.4). This result was expected for those who had either ever dispensed or currently dispensing would continue to learn more about the drug by attending conferences, seminars and training where issues on ECPs are discussed and these would have influenced their attitude positively. This finding confirms the fact that pharmacists are responding to the needs of women who need EC. It can be compared with results of Kelly et al.,(2005) which reported that nearly all the pharmacists sold at least one of the two dedicated products available in South Africa, with two-thirds selling Postinor 1 and Postinor 2 in this study. When respondents were asked whether they have time in their current practice to dispense ECP to clients, more than half (53.1%) reported positively and said most clients (51.2%) had sought advice from them on pregnancy and contraceptive in the month before the study. However, a greater proportion of younger pharmacists than older ones had dispensed EC. The reason may be because of their involvement in continuing education where they might have gotten information on ECP, its mode of action and these might have influenced their attitude and dispensing practices.

Concerning questions relating to privacy and background information from clients before dispensing ECPs, only (27.0%) of the respondents had private place where they dispense ECPs, (36.4%) asked reasons for ECPs demand from clients, and (24.2%) requested for background information from clients before dispensing the drugs. These results showed that respondents did not follow the normal process when they dispense ECPs to clients; they assumed clients should know it all since ECP is over-the-counter drug. Although there has been an increase in ECPs demand over time, but most clients have used them indiscriminately, and this can either cause drug resistance thus reducing its effectiveness.

In addition, more community-based pharmacists (CBPs) had dispensed EC than those working in hospitals (Hospital Based Pharmacist-HBPs). There may be several reasons for this finding. One, CBPs are more accessible than HBPs to women and girls who need them and are sold without prescription as over-the-counter drug. Since most these pharmacists are based in the communities they are more accessible than hospitals. Secondly, CBPs have more flexible hours of operation than hospitals which typically open on week days and between 8am and 4pm. The efficacy of ECPs has been proved to a widely acceptable stage so; most pharmacists are expected to be involved in dispensing it. This corresponds with the study as most of the respondents (70.6%) had ever dispensed ECPs to patients. Among the brand names commonly dispensed are Postinor 1, Postinor 2, Microgynon, Nordetta of which Postinor 1 and 2 were widely dispensed with Postinor 2 having the highest demand (please see figure 3 on page 77 for details). Most pharmacists (56.4%) who dispensed the pills did not have private places for its prescription and they held the belief that there has been misused or abused of the drug. Not having a private place for counseling means counseling will be done poorly or not at all, secondly confidentiality cannot be ensured. The effects of these are that, most women might not come to pharmacy shops for the drugs and those who do might misuse the drugs.

On pharmacists' responsibility in dispensing ECPs, more than three-quarter of respondents said that pharmacists should engage in ECPs prescription, although with different reasons. Majority supported it because they believed it was their responsibility to fill prescription for customers. Others saw themselves as first point of contact while some were indifferent. This means women and girls who need ECPs will not have same reason for use, secondly they might be delayed and the primary reason for ECP use being denied.

When asked whether there was a need for training before a pharmacist could adequately dispensed ECPs to customers, sixty-one percent agreed. Eighteen percent had ever participated in such training and sixty-six percent signified intention to participate if such opportunity is available. This shows that there is opportunity to improve the low knowledge of pharmacists on ECPs, secondly, it is an avenue to change their negative attitude, and thirdly, it will help pharmacists to correctly dispense ECPs to clients.

Conclusion

Emergency Contraceptive Pills have become an important drug in preventing unplanned pregnancy. Pharmacists, especially the Community-based are always the first point of contact when other health care providers are not available. Data gathered from those who practiced in Ibadan and Lagos metropolis in Nigeria established these facts. Although pharmacists lack some knowledge about the drug, but some of them still have positive attitude towards it. Nevertheless, majority of them showed interest in training that could boost their knowledge of the drug.

Government and other international authorities should take the advantage of pharmacists willingness to gain knowledge through training in order to educate them on the drug and also make them have positive attitude in dispensing ECPs to customers especially adolescents. As they do this pharmacists will be able to raise women's awareness on the drug and reduce the high rate of unplanned pregnancy in Ibadan, Lagos and Nigeria as a whole.

Limitations of the Study

The following are the limitations of the study:

1. Record from the Ministry of Health, Office of the state Director of Pharmacists showed that there are 252 Pharmacy Shops in Ibadan, but field experience revealed that only 231 registered, others in the process, some no longer in operation. Therefore Ministry of Health did not have up to date information which is not too good. This delayed the study as pharmacists in another location Lagos were sought for the study.
2. Unlike developed countries where Pharmacy shops dominate the drug market, reverse is the case here as patent Medicine vendors outnumber the Pharmacy shops and thus do dispense Emergency Contraceptive Pills although secretly.
3. A small fraction of the numerous Pharmacists who graduate every year end up as practicing pharmacists so, there is no enough number on sites to serve the women in need, and this contributed to the lower number found at pharmacy shops.

4. Another limitation is that pharmacists were asked for self-reports rather than pharmacy sales records for information on stocking and sales of emergency contraceptive pills. Since some of them were not easily seen the period of study was therefore prolong

RECOMMENDATIONS

The following recommendations are provided to improve pharmacists' knowledge, attitude and dispensing practices on emergency contraceptive pills.

1. Pharmacy curriculum should be updated regularly as this will help the students to be well equipped on the new drugs that are brought into the market.
2. Pharmaceutical association should revitalize their profession by making laws that will make pharmacists who own pharmacy shops or those who work in hospitals to attend their meetings.
3. The state ministry of health, Pharmacy department should regularly update information regarding list of registered pharmacists and pharmacy shops as this enable people to get correct information.
4. There is need for government, non-governmental and international organizations to be involved in training of pharmacists as most of them are willing to participate if such opportunities are available.
5. There should be commitment from all stakeholders which are involved in the distribution of ECPs from the production to the consumption stage.

REFERENCES

Alan Guttmader Institute, A.G. 1994. 'Sex and America' teenagers New York, AGI, . *Family Planning Perspectives 27.* p88.

Anderson and Blenkinsopp 2008 Human Reproduction.htm. Community pharmacy supply of emergency hormonal contraception a structured literature review of international evidence. 21 (1) 272. *European Society of Human Reproduction and Embryology.*

BBC News / Health/Natural contraception 'effective'. 2007. Retrieved from the February 27, 2007, from http://news.bbc.co.uk/2/hi/health/6375261.stm.

Bennett, W., Petraitis, C, D'Anella, A and Marcella, S. 2003. Pharmacists' Knowledge, and the Difficulty of obtaining EC, Contraception;68:261-7.

Birth Control Option for Women-Female Sterilization. 2005. Retrieved from the July,15, 2008, from http://www.healthscout.com/ency/1/guides/000091_9.html

Charles F. P. 2004. Providers' Knowledge and Attitudes Towards Emergency Contraception.

Condom Effectiveness Studies. 1993. Centers for Disease Control and Prevention, HIV/AIDS Prevention Training Bulletin. Retrieved from the February 15, 2007, from http://www.justrubbers.com/info/studies.html.

Croxatto, H.B., V. Bracle, M. Pavez, L. Cochron, M.L. Forcelledo, F. Alvarez, R. Massai, A. Faundes and A.M. Salvatierra. 2004 " Pituitary –Ovarian funch Fell the slanders levonergestrel ECs dose of a single 0.75-mg dose given on days preceding ovulation" contranception 70(6) 442-450.

Cynthia H, Charlotte E. 1996. Knowledge and Perception of Emergency Contraceptive Pills among a College-Age Population: A Qualitative Approach. *Family Planning Perspectives* 27: 149-154.

Death and Denial: Unsafe abortion and Poverty. 2006. International Parenthood Federation.

Dianna G.2006. Pharmacists Access to Emergency Contraception in Califomia. *Perspectives on Sexual and Reproductive Health,* 38(1), 46-52.

Espeyy E. 2003. EC: Pharmacy Access in Albuquesque New Mexico, ObGyn,.Facts about Emergency Contraceptives Pills. 2006. *Population Council.* http://www.popcouncil.org.

Federal Register: 1997. "Prescription during product: certain combined and contraceptive for use as post-catal emergency contraception: Notice" 62: 8609-8612. Washington D.C.

Firer, L.B. and Zabin, L.S. 1998. Does the timing of the first family planning visit still matter? *Family Planning Perspective* 30 (1): 30-33, 42.

Gold M.A., Schein A, Coupey S.M.1997. EC: A National Survey of adolescent health experts. Farm Plan Respect: 29:15-9.

Golden N.H, Seigel W.M, Fisher M. 2001. EC: Pedeatricians' knowledge, attitudes, and Opinions. Pediatriac: 107:287-92.

Graham, A. Laurence M., Deborah S. and Ian D. 2002. "Improving teenage, knowledge of EC: Chester randomized controlled trial of a teacher xxx intervention" British Medical faxxxx (324 (7342): 1179 – 1183.

Green L. and Kreuter, M. 2006.The Precede/Proceed Model, University of South Florida,Community and Family Health. Retrieved from the December 12, 2007, from http://www.precedemodel.org.

Harispasard,, N.2006.Attitudes and Practice of Pharmacists towards emergency contraception in Durban, South Africa. *European Journal of Contraception, Reproductive Health Care*. June. 6(2) 87- 92.

Harper, C and Ellertson, C. 1994. The ECP: An inquiry on Knowledge and Attitudes. Princeton, New Jessey, Princeton University, Centre of Domestic and comparative Policy studies, pg. 36.

Hellersledt and Wendy. Emergency Contraceptive Pills: Dispensing Practices, Knowledge and Atitudes of South Dakota Pharmacists. Perspective on Sexual and Reproductive Health, 2005, 37(1): 19-24.

Henry J. 1997.Kaiser Family Foundation, National Surveys of American and Health Care provider on Emergency Contraception. Mento Park, CA: Henry J. Kaiser Family Foundation, part 2.

Henry J 2006. Kaiser Family Foundation. Women Fact Sheet: Emergency Contraception. Retrieved from March, 12, 2007, from http://www.kfl.org.

Henshaw, S.K.1998. Unintended pregnancy in the US. Information and Knowledge for Optimal Health (Info Project). 2005. John Hopskin University. Female

Sterilization Chapter 11. Family Planning Perspective. 30: 24-4.

http://www.infoforhealth.org/globalhandbook/book/fph_chapter11/index.shtml.

Iriuchijima A., Kyokuyama S., Toyoshima Y., Kimura H and Kato S.1990. In A midwife's gift: love, skill, and knowledge. Proceedings of the International Confederation of Midwives 22nd International Congress, October 7-12, Kobe, Japan. Tokyo, Japan, Japanese Nursing Association, Midwives' :78-80. Retrieved August 29, 2008.

http://www.ohio.edu/hudson/topics/diaphram.cfm.

Jane E. B.2002. How can Pharmacists Improve Access to Emergency Contraception? *Perspectives on Sexual and Reproductive Health* Vol.34 No.3.

Kaiser Family Foundation. 2004., Emergency Contraception in California, February.

Kaiser Family Foundation's. 2001. Third National Survey of Women's Health Care Providers on Reproductive Health.

Kelly B.2005 Pharmacists; Knowledge and Perception of Emergency Contraceptive Pills in Soweto and Johannesburg Central Business District, South Africa. International Family Planning Perspectives, 31(4): 172-178.

Kristi K. 2005. Emergency Contracceptives Pills: Dispensing Practices, Knowledge and Attitudes of South Dakota Pharmacists (Table Maker Media State). *Perspectives on Sexual and Reproductive Health* Vol. 37, No1 March.

Labbok M, Perez A, Valdes V, Sevilla F, Wade K, Laukaran V, Cooney K, Coly S, Sanders C, and Queenan J. 1994. The Lactational Amenorrhea Method: A New Postpartum Introductory Family Planning Method with Program and Policy Implications. Advances in Contraception June/July; 10:93-109. Retrieved August, 29, 2008) http//www. Sexuality andu.c/adult/contraception-2-10-aspx.

Martson C. 2005. Impact Contraceptive Practice of Making Emergency Normal Contraceptive Available over the counter in Great Britain: Repeated Cross Sectional Surveys, British Medical Journal, July 11.

Mathew, E., B., Jemifer, S., Naomi, H., Gircash, G., Pupali, N., Denise, C., 2006. New Mexico Pharmacist' Knowledge, Attitudes, and Beliefs towards prescribing oral EC.

Journal of American Pharmacists Association; 46(1): 33-43.

Matthew, E. 2006. New Mexico Pharmacists' Knowledge, Attitudes and Beliefs toward

prescribing Oral Emergency Contraception. Journal of the American Pharmacist Association; 46(1): 33-43.

McCaurey, A.P. and Salter, C. 1995. Meeting the need of young adults. Population Reports, Some J, No. 41. Baltimore, Johns Hopkins School of Public Health, Pop. Inf. Program, 44p.

Medical uses of oral contraceptive pills: A guide for girls. IV and AIDS Information on Avert. Using Condoms, Condom types and sizes. Retrieved August, 30, 2008 http://www.avert.org/uscond.htm.

Melanie, A. Gold, D.O. 2006. Provision of Emergency Contraception to Adolescents: Position

Paper of the Society for Adolescent Medicine. Journal of Adolescent Health, vol.35,

No1 pg 66-70.

Naik.R, Cuellar. D. 2006. New Mexico Pharmacists' Knowledge, Attitudes and Beliefs toward

Prescribing Oral Emergency Contraception. Journal of the American Pharmacist Association .Jan.-Feb.; 46(1):33-43.

National Population Commission, 2006.

National Women's Law Centre: Expanding the Possibilities. 2005. Pharmacy Refusal 101. National Women's Law Centre, Washington, D.C. June p. 1-3.

National Women's law Centre, 2004. Pharmacy Access in Albuquerque, New Mexico, Ob/Gyn, Patel, A Under use of EC of Victims of sexual Assault, International Journal of Fertility and Women's Health, Nov/Dec.

Path(inders International. 2003. African Youth Alliance: Emergency Contraceptive Pill (ECPs).

Perez, A, Vela, P, Masnick, G.S, Potter, R.G. First ovulation after childbirth: the effect of breast-feeding. Am J Obstet Gynecol. 1972;114(8):1041-7.

Pggio, G, Von Thertzen, H, Grimes, D.A. Van Hook, P.F.1999. Timing of emergency contraception with levonogestrel or the Yuzpe regmeu. Task Force on lost ovulatory methods of Fertility Regulation. Lancet; 353: 72.

Polis, C. Schaffe, K. Harrison, T. 2005. Accessibility of EC in California and Catholic

Hospital, Ibis Reproductive Health, March.

Population Report., Oral contraceptive-an update, series A, No. 9, Vol. Pruett, S.L., Mullen, P.D. 2005.Contraception or Abortion? Inaccurate descriptions of EC in Newspaper Articles, 1992-2002, Contraception.

Raine, T. 2005. Direct Access to EC through pharmacies and effect on unintended pregnancy and STIs, Journal of American Association.

Rane, Tira, R. Cynthia, C. C., Harper, C.H., Rocca, R. F., Nancy P., Jeffrey, D., Klausior and Philip, D. D. 2005. " Direct access to EC through pharmacies & effect on unintended pregnancy & STIs. A randomized controlled trial "Journal of the American Medical Association 293 (1): 54-62.

Raymond, E.G. Gremin, M.D., Bamlast, K.I., Lovorn, A.E., Rounree, W. and TRussell, J. 2000. Maclizne for prevention of nausea associated with ECPs: A randomized trial obst. & Gyn. 95(2): 271-277, Feb. 2000.

Raymond, E.G., Douglas, T., Trusell, J and Markus J., Slener. 2004 " Minimum effective of the Levonorgestrel regimen of emergency contraception " Contraception 69(1). 72-81.

Religion and abortion: Retrieved http:/www.

Robert, A. H., Ward, R., Richard, B., Judith, S. G. and James D. S. 2005. The Essential of Contraceptive Technology. A Handbook for Clinic Staff. The INFO Project, John Hopkins Center for Communication Program.

Rodrigues I. 2002. Effectiveness of ECPs between 72 and 120 hours after unprotected sexual intercourse, Amer Y. of ob/Gyn,.

Roye, C.F. 2001 " Routine provision of EC to teens & subsequent condon use. A preliminary study". Journal of Adolescent Health 28 (3): 165-166.

Rx Press –Emergency contraception: Emergency Contraceptive Pills (Morning After Pills).

Sara Over the counter access. 2005. Changing WHO guidelines, and contraindicated oral contraceptive use in Mexico. Studies in family planning, Vol. 37 pg 197. September 2006. Sexual and Repre. Health.

Shelten J.D. 2002: "Repeated Emergency Contraception: Facing our fears", contraception N 66 (10: 15-7.

Sills M.R, Chamberlain J.M, Teach S.J. 2000. The associations among pedeatricians' knowledge, attitudes and practices regarding EC. Peaditric; 105: 954-6.

Stanley K. Incidence of induced Abortion in Nigeria. International Family Planning Perspective

Sue, A. Pharmacists' Attitudes and Awareness of Emergency Contraception for Adolescents. Advocate for Youth. Right. Respect. Responsibilities.

Susan, C and Stewart, M.D. 2003. The Latest on Emergency Contraception. Available on linc at http:// www.file:///E|/ women health, the latest on emergency contraception.

Sutkin, G., Grant,.B., Iron, B.K,, Border, T.F. 2006. Opinion of West Texas Pharmacists about Emergency Contraception. Pharmacy Practice. Journal of Pharmacy Practice, www.pharmacypractice.org.

Task Force on postovulatory method of fertility Regulation. 1998. Randomized controlled trial of levangestrel versus the Yuzpe regimen of combined and contraceptives for emergency contraception. Lancet 352(9126): 428-435.

Trussel J. 1992. Emergency contraceptive pills: A simple proposal to reduce unintended pregnancies, Family Plan Perspectives.

Trussel, J., Rodrigiez, G., and Ellerston, C. 2003. Update estimates of the Effectiveness of emergency contraceptive pills. contraception; 67: 259-65.

Trussell, J, Stawart, F, Guest F, Hatcher R.A. 1992. ECPs: A simple proposal to reduce unintended pregnancies. Family Planning Perspective; 24: 269-73.

UNFPA. 2005. State of Nigeria Population. Page 52.

UNFPA/PRB. 2005. Country Profile for Population and Reproductive Health. Policy Development and Indicators.

Van Riper, K.K, and Hellesstedt, N.L.2005. ECPs: Dispensing Practices, Knowledge, and Attitudes of South Darketa Pharmacists, Perspectives on ECPs.

Van Riper, K.K, and Hellerstedt, W.L. 2005. Emeregncy Contraceptive Pills: Dispensing Practices, Knowledge and Attitudes of South Dakota Pharmacists, Perspectives on Sexual and Reproductive Health, March.

Von Hertzen, H, Piggid, G and Ding, J. WHO research Group on Pest – Quarterly Methods of Fertility Regulation. How dose mifepristoneand two regimens of levomogestrel for emergency contraceptive: A WHO multicentre random.

W.H.O. 2005 Levonorgestrel for Emergency Contraception. Fact Sheet, a joint

Sills M.R, Chamberlain J.M, Teach S.J. 2000. The associations among pedeatricians' knowledge, attitudes and practices regarding EC. Peaditric; 105: 954-6.

Stanley K. Incidence of induced Abortion in Nigeria. International Family Planning Perspectives.

Sue, A. Pharmacists' Attitudes and Awareness of Emergency Contraception for Adolescents. Advocate for Youth. Right. Respect. Responsibilities.

Susan, C and Stewart, M.D. 2003. The Latest on Emergency Contraception. Available on line at http:// www.file:///El/ women health, the latest on emergency contracception.

Sutkin, G., Grant,.B., Iron, B.K,, Border, T.F. 2006. Opinion of West Texas Pharmacists about Emergency Contraception. Pharmacy Practice. Journal of Pharmacy Practice, www.pharmacypractice.org.

Task Force on postovulatory method of fertility Regulation. 1998. Randomized controlled trial of levangestrel versus the Yuzpe regimen of combined and contraceptives for emergency contraception. Lancet 352(9126): 428-435.

Trussel J. 1992. Emergency contraceptive pills: A simple proposal to reduce unintended pregnancies, Family Plan Perspectives.

Trussel, J., Rodrigiez, G., and Ellerston, C. 2003. Update estimates of the Effectiveness of emergency contraceptive pills. contraception; 67: 259-65.

Trussell, J, Stawart, F, Guest F, Hatcher R.A. 1992. ECPs: A simple proposal to reduce unintended pregnancies. Family Planning Perspective; 24: 269-73.

UNFPA. 2005. State of Nigeria Population. Page 52.

UNFPA/PRB. 2005. Country Profile for Population and Reproductive Health. Policy Development and Indicators.

Van Riper, K.K, and Hellesstedt, N.L.2005. ECPs: Dispensing Practices, Knowledge, and Attitudes of South Darketa Pharmacists, Perspectives on ECPs.

Van Riper, K.K, and Hellerstedt, W.L. 2005. Emeregncy Contraceptive Pills: Dispensing Practices, Knowledge and Attitudes of South Dakota Pharmacists, Perspectives on Sexual and Reproductive Health, March.

Von Hertzen, H, Piggid, G and Ding, J. WHO research Group on Pest – Quarterly Methods of Fertility Regulation. How dose mifepristoneand two regimens of levomogestrel for emergency contraceptive: A WHO multicentre random.

W.H.O. 2005 Levonorgestrel for Emergency Contraception. Fact Sheet, a joint

UNDP.UNFPA.WHO.WORLD BANK. Special Programme of Research Development and Research Training in Human Reproduction.

W.H.O. 2000. Reduction of maternal mortality, a joint WHO/UNFPA/UNICEF/World Bank statement, Geneva: WHO, 1999. XXVIII, No.1.

Wanapa and Siriporn: Situation analysis of Emergency contraception use among young people in Thailand.

Welsberg E. Fraser, I.S., Carick, S.E. and Wilde, F.M. 1995. EC: General Practitioner Knowledge, attitudes and practices in New South Wales. *Medical Journal of Austria* 162(2): 136-138. Feb 6.

World Health Organization (WHO). 1998. Emergency contraception: A guide for service delivery. Geneva, WHO. 60p.

APPENDIX 1

CONSENT FORM

TITLE OF RESEARCH: KNOWLEDGE, ATTITUDE, AND DISPENSING PRACTICES RELATING TO EMERGENCY CONTRACEPTIVE PILLS AMONG PHARMACISTS IN IBADAN AND LAGOS METROPOLIS, NIGERIA.

Investigator: OMOTOSO OLUKUNLE

SPONSOR: SELF

Dear Respondent,

Good day, you are being asked to participate in a research study design to know the rate at which women and men patronize pharmacies in making use of emergency contraceptive pills so as to reduce the problems of unwanted and unintended pregnancies, abortion and death in Nigeria.

Also the study intends to know the views of pharmacists to the dispensing of emergency contraceptive pills in Lagos.

This study will help develop a better understanding of the rate at which emergency contraceptive pills are being dispensed and used in Lagos.

However, there may not be any direct benefits as a result of participation, but you will have access to the result of the findings if you wish to. In case of any questions about the study Omotoso Olukunle can be reached through 08034239465 or 08077276151.

I wish to participate in this research study.

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Date Respondent's Signature

Research's Signature

APPENDIX 2

SECTION 1:

DEMOGRAPHIY INFORMATION

Please answer the following questions about yourself. Circle the appropriate response to each question.

1. Sex (1) Male (2) Female

2. Age: (1) below 20 years (2) 21-35 (3) 36-45 (4) 46-55 (5) 55 and above

3. What is your ethnic group? (1) Hausa (2) Yoruba (3) Igbo

(4) Others (specify) _____

4. Marital status: (1) Single (2) Married (3) Others specify _____

5. What is your highest educational qualification?

(1) Bachelor of Science in pharmacy (2) Doctor of pharmacy

(3)Master of Science/ business administration (4) Doctor of Philosophy

(5) Others_____

6. What is your religion? (1) Christianity (2) Islam (3) Traditional

(3) Others

7. What is your practicing setting? (1) Hospital (2) Chain community

(3) Pharmacy (4) others (specify) _____

8. What is your primary practicing position? (1) Staff

(2) Manager/Supervisor (3) Other (4) Owner

9. For how many years have you been practicing? _____

Knowledge of Emergency Contraception

Please determine which of the following statement

		True	False
10.	Emergency contraception is also known as RU-496		
11.	Emergency contraceptives interrupt an established pregnancy		
12.	Use of emergency contraceptives reduces pregnancy risk by at least 75%.		
13	Emergency Contraceptive Pills will not cause an abortion		
14	The only approved oral emergency contraceptives are combination estrogen/progestin products.		
15.	The maximum time a woman can take emergency contraceptives and expect effectiveness is 5 days or 120 hours after unprotected sex.		
16.	If a woman is more than 2 weeks late for a contraceptive injection, she cannot use oral emergency contraceptives.		
17.	Known pregnancy is the only contraindication for oral emergency contraception.		
18.	When interviewing a patient to assess the need for oral emergency contraception, it is important to determine when the last menstrual period occurred.		
19	If the next menstrual cycle does not begin in the next 21 days, the patient should follow up with a pregnancy test.		
20.	Blood clots, migraines, and liver disease are absolute contraindication for progestin-oral emergency contraception.		
21.	Emergency contraception effectiveness is optimal when used within 24 to 48 hours of unprotected sexual intercourse.		
22	If a person requesting emergency contraception is under the age of 18, a parent or guardian has to approve it in order to prescribe emergency contraception		
23.	Meclizine 500mg cannot be used to manage nausea and		

	vomiting associated with emergency contraception.		
24.	Emergency contraceptives can be used with more than one act of unprotected sex.		
25	Emergency contraceptives are very effective when used as a regular contraceptive method.		
26	Emergency contraceptives cannot be taken before intercourse		
27.	If during interviewing process you find out that a sexual assault occurred, do you think you have to notify a proper authority?		

SECTION 3

Attitude on Dispensing Practice of Emergency Contraception.

Please tick the appropriate response to the following questions

.	Attitudinal Item	Agree	Disagree	Not Sure
28.	Pharmacists are an important point of patient a access to emergency contraceptives when other health care providers are not available			
29.	I have a professional responsibility to become educated about pharmacist prescribing EC			
30.	I would refer patient to another pharmacist who dispense emergency contraceptives if my employer would not let me prescribe emergency contraceptives.			
31.	I am concern about the recognition of emergency contraceptive failure and follow up by the patient.			

32.	I am concerned about the dispensing emergency contraceptive without knowledge of the patient's medical history.			
33.	Emergency contraception dispensing by pharmacists would decrease health care cost.			
34.	I am concerned about the liability of dispensing emergency contraceptives.			
35.	Providing adequate counseling on emergency contraceptive is my responsibility as a pharmacist.			
36	Emergency contraceptive will promote unsafe sex.			
37.	I would like to be certified to dispense emergency contraceptives.			
38	I have a moral objection to dispensing emergency contraceptives.			
39	I have a religious objection to dispensing emergency contraceptives			
40.	I am reluctant to dispense emergency contraceptive because of the potential side effects.			
41.	Emergency contraception should only be given in the case of rape and incest.			
42.	I can dispense emergency			

	contraceptive pills to patient younger than 18 years old.			
43	ECPs should be available over-the-counter without prescription.			

SECTION 4

Dispensing Practice of Emergency Contraceptive Pills

Please tick and respond appropriately to the following questions

44. Do you think a pharmacist should engage in ECP dispensing?
(1) Yes (2) No

45. Give reason for your answer ----------

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46. Do you feel there is a need for training before a pharmacist can adequately dispense ECP to patients? (1) Yes (2) No.

47. If yes, have you ever participated in any ECP training before? (1) Yes (2) No

48. If no, would you like to participate in any ECP training? (1)Yes (2) No

49. Have you ever dispensed ECP before (1) Yes (2) NO

50. If No, Why ----------

51. How many people/patients have you dispensed ECP to in the last one week? ------

---

52. What is/are the brand names(s) of the ECPs you dispense in your pharmacy?-------

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53. Has there been an increase over time in demand of ECP use? (1) Yes (2) No.

54. If Yes, what do you think may happen? ----------

---

55. Do you have time in your current pharmacy practice selling to dispense ECP to patients? (1) Yes (2) No.

56. If No, why ----------

---

57. How did you get to know about ECP? ----------

58. In the past one month, have women sought your advice about pregnancy and contraceptive (1) yes (2) No.

59. If yes, how many have you counseled on ECP use instead of abortion in the past one month? ----------

60. Do you ask reasons for ECP demand from patients before dispensing it? (1) Yes (2) No.

61. If yes, state some of those reasons you ask for ----------

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62. Does your pharmacy have a private place for ECP dispensing? (1) Yes (2) No.

63. During ECP dispense to your last patient, did you ask questions on family background before dispensing it? (1) Yes (2) No.

64. Give reason for your answer ----------

---

65. While dispensing ECP, do you encourage women/girls to check back in case of side effects? (1) Yes (2) No.

66. Give reason for your answer ----------

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67. If yes to question (62) above, like how many have checked back in the last three months?

68. What is your main source of continuing education? (1) Live presentation (2) Paper based education (3) Web-based education (4) Combination of 1 & 2 (5) Combination of 1 & 3 (6) combination of 2 & 3 (7) Combination of three (8) others (specify) -----

69. Are you comfortable counseling women about ECPs? (1) Yes (2) No.