



NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
DEPARTMENT OF NURSING

**KNOWLEDGE, ATTITUDES AND PRACTICES OF CONTRACEPTIVE
METHODS AMONG STUDENTS IN PUBLIC AND PRIVATE HIGH
SCHOOLS IN CAMEROON**

M.Sc. THESIS

CHARLOTTE ALVIANE GNIMPIEBA KASSEP

NICOSIA

January, 2023

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
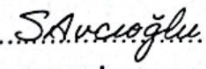

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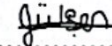
Approval

We certify that we have read the thesis submitted by Charlotte Alviane Gnimpieba Kassep titled “**Knowledge, Attitudes and Practices of Contraceptive Methods Among Students in Public and Private High Schools in Cameroon**” and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Nursing Sciences.

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Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Charlotte Alviane Gnimpieba Kassep

30/01/2023

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Charlotte Alviane Gnimpieba Kassep

Abstract

Knowledge, Attitudes and Practices of Contraceptive Methods Among Students in Public and Private High Schools in Cameroon

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Background: Contraceptives methods use still remains a controversial subject in the society of developing country. Considering the sexual satisfaction needs of young people, the importance of determining and eliminating this need will be revealed.

Purpose: This study aims to assess the knowledge, attitudes and practices of contraceptive methods among students aged between 15 to 25 years in public and private schools in the district of Bonaberi, Douala, Cameroon.

Material and Methods: This research was modelled based on the pattern of descriptive and relations-seeker. The population in this study was composed of students (N=1649) from the five public and private high schools of Bonaberi, Cameroon. The sample size of this study is 379 students. Data were collected face-to-face by researcher between June 1-30, 2022. Data collection tools are the student information form, the knowledge and practices of contraceptive methods questionnaire and contraceptive attitude scale (CAS). The data of this study were analysed using descriptive statistics tests, kruskal wallis test, pearson chi-square, kolmogorov-smirnov, student's t test, mann-whitney test and the one way annova.

Findings: It was found that almost half (45.91%) of students are 19-22 years old, 59.1% of them were male, almost half (49.3%) of them were sexually active. Male condom is the most commonly current used and known method of contraception among students. It was determined that, students take average 3.409 points (Std Deviation=0.514), from total score of CAS. The result indicated a positive attitude about contraceptive methods. There were no statistically significant differences between gender, religion, sexual activity and contraceptive attitude. There was a statistically significant differences between age, marital status and contraceptive attitude.

Conclusion: It is recommended to provide family planning counselling services in these schools in order to increase the use of effective methods and obtain contraceptive methods information from the right sources for students.

Keywords: Adolescent, contraceptive, Cameroon, family planning.

Özet

Kamerun'daki Devlet ve Özel Liselerdeki Öğrencilerin Kontraseptif Yöntemlere İlişkin Bilgi, Tutum ve Uygulamaları

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Giriş: Gelişmekte olan ülkelerde kontraseptif yöntemler hala tartışmalı bir konu olmaya devam etmektedir. Gençlerin cinsel doyum ihtiyaçları dikkate alındığında, bu ihtiyacın belirlenmesinin ve giderilmesinin önemi açığa çıkacaktır.

Amaç: Bu çalışmanın amacı, Bonaberi, Douala, Kamerun bölgesindeki kamu ve özel okullarda 15 ile 25 yaş arası öğrenciler arasında kontraseptif yöntemlerin bilgi, tutum ve uygulamalarını saptamaktır.

Gereç ve yöntemler: Bu araştırma, tanımlayıcı ve ilişki arayıcı tipde tasarlanmıştır. Bu çalışmanın evreni, Kamerun Bonaberi'nin beş lise öğrencilerinden (N=1649) oluşmaktadır. Bu çalışmanın örneklem büyüklüğü 379 öğrencidir. Veriler, 1-30 Haziran 2022 arasında araştırmacı tarafından yüz yüze toplandı. Veri toplama araçları öğrenci bilgi formu, kontraseptif yöntemlere ilişkin bilgi ve uygulamalar anketi ve kontraseptif tutum ölçeğidir. Bu çalışmanın verileri tanımlayıcı istatistik testleri, pearson chi-square testi, kruskal wallis testi, kolmogorov-smirnov, student's t testi, mann-whitney testi ve tek yönlü annova kullanılarak analiz edildi.

Bulgular: Öğrencilerin neredeyse yarısının (%45.91) 19-22 yaşında olduğu, %59.1'inin erkek, neredeyse yarısının (%49.3) cinsel yönden aktif olduğu bulunmuştur. Erkek kondomu, öğrenciler arasında en yaygın olarak kullanılan ve bilinen kontrasepsiyon yöntemidir. Öğrencilerin kontraseptif tutum ölçeğinden aldıkları toplam ortalama puan 3.409 (Standart sapma=0.514) olarak belirlenmiştir. Bu sonuç, kontraseptif yöntemler hakkında olumlu bir tutum göstermektedir. Cinsiyet, din, cinsel aktivite ve kontraseptif tutum ölçek puan ortalaması arasında istatistiksel olarak anlamlı bir fark bulunmamıştır. Yaş, medeni durum ve kontraseptif tutum ölçek puan ortalaması arasında istatistiksel olarak anlamlı fark vardır.

Sonuç: Etkili yöntemlerin kullanımını artırmak ve öğrenciler için doğru kaynaklardan kontraseptif yöntemler bilgi elde etmek için bu okullarda aile planlaması danışmanlığı hizmetleri sunulması önerilmektedir.

Anahtar Kelimeler: Adolesan, kontraseptif, Kamerun, aile planlaması,

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List of Abbreviations

- aOR:** adjusted Odd Ratio
- BC:** Birth Control
- AUC:** Area Under the Curve
- CDC:** Centre for Disease Control
- CI:** Confidence Interval
- CM:** Contraceptives methods
- ECP:** Emergency Contraceptives Pills
- FP:** Family Planning
- HIV:** Human Immunodeficiency Virus
- Int. range:** Interquartile Range
- IUD:** Intra-Uterine Device
- IUS:** Intra-Uterine System
- LARC:** Long-Acting Reversible Contraceptives
- OR:** Odd Ratio
- POOC:** Progestin-Only Oral Contraceptives
- SBHC:** School Based Health Centre
- STD:** Sexually Transmitted Disease
- STI:** Sexually Transmitted Infection
- US:** United States
- USAID:** United States Agency for International Development
- WHO:** World Health Organisation

CHAPTER I

Introduction

This chapter include the statement of the problem, the purpose of the study, the research questions, the significance of the study, the limitations, and the definition of terms.

1.1. Statement of the Problem.

Family planning (FP) is a practice that help individual and couples to organize their family, i.e., define their desired number of children, the interval between births and the period at which the births will start (Program et al., 2009). The practice has been on use since the 16th s in West Africa where physician was advising women of Djenné to give a three-year interval between births (McKissack & McKissack, 1994), and has gradually expanded around the world till been among the 10 public health achievements of the 20th c according to the centre for Disease Control and prevention (CDC, 2022). To achieve it aims, FP relies on various methods that permit to prevent pregnancy, these are called contraceptive methods (CM). There are various contraceptive methods, depending on the composition and their role we distinguish. These methods are classified as modern, natural and traditional methods. Modern contraceptive methods include the pill, injectables, intrauterine device (IUDs), implants, female and male condoms, female and male sterilization, other barrier methods and modern fertility-awareness methods. On the other hand, traditional methods include mainly withdrawal and periodic abstinence (Darroch, Woog, Bankole & Ashford, 2016). Despite this plurality of methods available, unmet need for contraception. According to estimates provided by the United States Agency for International Development (USAID), there are approximately 225 million women and girls who do not get their annual contraceptive needs addressed (USAID, 2022). Women who want to postpone having children but are not already utilizing a contemporary method of contraception are considered to have an unmet need for contraception. It is anticipated that providing these women with access to contraception will prevent a total of 52 million unwanted pregnancies, in addition to preventing 36 million abortions and 70,000 maternal deaths (Schivone & Blumenthal, 2016).

A knowledge of contraceptive techniques includes being able to identify the many types of contraceptives, as well as the associated risks and advantages.

In developed countries, modern contraceptive methods are well known and use. For example, in the USA according to the CDC, among women aged 15-49, 14% use pill, 10.4% use contraceptive implant or intrauterine device, 18.1% currently use female sterilization, and 5.6% currently use male sterilization (CDC, 2022). Unfortunately, females in underdeveloped nations still face significant hurdles in getting contemporary methods of contraception. Particular issues include lack of availability owing to limited number of qualified providers, fewer method alternatives, lack of knowledge, health concerns, limited supplies and high cost (Schivone & Blumenthal, 2016). The direct consequence of all these is the risk of adolescent pregnancies, abortions, and sexually transmitted disease; and these in developing nation is mostly observed among teenagers at the age of reproduction.

In certain countries, such as Cameroon, evaluating a person's knowledge, attitudes, and actions about various methods of contraception might pose legal problems. Women get abortions in secret solely because the law prohibits them from doing so, and after having an abortion, many of these women endure complications that lead to the need for a hysterectomy or even loose of life (Bearak et al., 2020).

Unwanted pregnancies and sexually transmitted disease are a problem that affects the public health all around the world. The World Health Organisation (WHO) estimate that more than one million sexually transmitted infections (STIs) are picked up every single day around the globe, with the vast majority of those cases going undiagnosed (WHO, 2021), and a 0.043 prevalence of abortion. The problem of unwanted pregnancy could have been solved using methods of contraception that are currently available, which are both dependable and easy to access. The rise in the number of pregnancies that were not planned for can be associated with a lack of literature that addresses women's knowledge of methods of contraception. This likely lack of awareness might explain the high rates of abortion that have been observed in a variety of nations throughout the world. An incorrect belief about the efficacy of condoms was discovered during the course of a study that was carried out in the United States (US) with the purpose of evaluating the level of information that women had regarding methods of birth control. This observation of an incorrect perception showed that a great deal has to be done regarding educational opportunities and research on contraceptive measures since these techniques will empower women with regard to contraceptive procedures.

The population of Cameroon is constituted at 20% of youths aged between 15-25 years (Index mundi, 2019). As of 2018, 15.40 percent of women between the ages of 15 and 49 were using at least one contemporary form of contraception themselves or had sexual partners who did so (contraceptive prevalence). Its lowest value was 0.60 in 1978, while its maximum value and peak during the previous 40 years was 19.90 in 2014 (Index mundi, 2019). It can be observed that contraceptive prevalence is much lower than the percentage of youth with age range included in that of the contraceptive prevalence. Normally with a sufficient knowledge and use of contraceptive in the country, these two values were supposed to be almost equal. Therefore, there is a real concern about the knowledge and practice of contraceptive among Cameroonians youths.

1.2. Purpose of the Study

This study aims to assess the knowledge, attitudes and practices of contraceptive methods among students aged between 15 to 25 years in public and private schools in the district of Bonaberi, Douala, Cameroon.

1.3. Research Questions

Four research questions guided this study

- 1-) What is knowledge and practices of contraceptive methods among students in Cameroon?
- 2-) Are there relationships between contraceptive methods use and sociodemographic characteristics among students in Cameroon?
- 3-) What is the average score of contraceptive methods attitudes scale among students in Cameroon?
- 4-) Are there relationships between average score of contraceptive methods attitudes scale and sociodemographic characteristics among students in Cameroon?

1.4. Significance of the Study

In undeveloping countries, contraception use among students, particularly among female students, is still very low, despite the fact that reports indicate a rise in the number of unintended pregnancy (Sobngwi-Tambekou et al., 2022). It is possible to avoid unwanted pregnancies, unsafe abortions, and sexually transmitted illnesses, including HIV, by using contraception in the appropriate manner (Ong et al., 2012). Students enrolled in higher education institutions who become pregnant unintentionally pose a significant threat to public health, particularly in less developed nations; this places their education as well as their future employment opportunities at jeopardy (Kara et al., 2019). Adolescent with more favourable attitudes toward contraception can use contraception methods, and knowledge about contraception could improve contraceptive behaviour and practices (Guzzo and Hayford, 2018).

In a world where adolescent constitute the most population, where we account 1 to 4 million new sexually transmitted infection (WHO, 2022), and where Approximately 12 million women aged 15–19 years and at least 777,000 women under 15 years give birth each year in developing regions. Eighty-five percent of the 252 million adolescent women aged 15–19 in developing countries are not at risk of unintended pregnancy and do not need contraceptives (Darroch, Woog, Bankole & Ashford, 2016). It is considered important to assess the knowledge, attitudes and practices of contraceptive methods among adolescent.

1.5. Limitations

The study was limited to the specified schools. The data of this study can't generalize the entire schools in Cameroon. The data of this study represent students in the schools on the 1st of June 2022 – 30 September 2022. The duration of the data collection period, the fact that the study did not consider all age groups, and the fact that the study considered only students 15 years and above who also consented to participate in the study all contribute to the possibility. The results of this study are not representative of the entire Bonaberi district, but this study does present one of the students' limitations concerning a social fact in this district.

1.6. Definition of Terms

Family planning: a person's or a couple's potential to plan for and achieve their ideal family size, including the number of children they wish to have and how far apart their births should be space (Sonia Sultant, 2018).

Contraception: the term "contraception" refers to any and all treatments that are utilized to achieve the short-term goal of preventing conception in either a man or a woman by inducing a state of temporary infertility in them (Sonia Sultant, 2018).

Contraceptives: elements that assure contraception (Sonia Sultant, 2018).

Knowledge: the state of being familiar with something via previous experience or association; the fact or circumstance of having such familiarity. familiarity with, or comprehension of, a scientific discipline, artistic practice, or technical process (Rakhi & Sumathi, 2011).

Practice: the action of carrying out or applying, as well as doing something frequently, regularly, or routinely. to be actively involved in on a professional level (Rakhi & Sumathi, 2011).

Attitude: Opinions held by an individual, a social group, or an institution, which lead to action that is either habitual or based on circumstantial evidence (Rakhi & Sumathi, 2011).

CHAPTER II

Literature Review

This chapter provides research-related conceptual definitions and descriptions, as well as material connected to the topic that already exists in the literature.

2.1. Theoretical Framework

2.1.1. *Chronology of Family Planning*

The chronology of family planning, also referred as birth control, refers to the many techniques or technologies that have been used historically to prevent conception. Other names for birth control include fertility control and contraception. In some eras and societies, there was little social shame attached to having an abortion, which resulted in birth control being less of a priority (Stenvoll, 2007). The ancient period, the medieval and early modern period, and the contemporary period are the three stages that have occurred during the development of contraception.

Contraceptive in the Ancient Period.

There is abundant evidence that ancient Egypt used both birth control and abortion. Some of the earliest documented descriptions of birth control can be found in the Ebers Papyrus, which dates back to 1550 BC, and the Kahun Papyrus, which dates back to 1850 BC. These papyri describe the use of honey, acacia leaves, and lint to be placed in the vagina in order to block sperm (O'Reilly, 2010). Acacia gum, which current research has demonstrated to have spermicide properties and which is still utilized in the production of contraceptive jellies, is one of the several contraceptive pessaries that are discussed. Other methods of contraception described in the papyrus include the use of gummy substances to cover the "mouth of the womb" (also known as the cervix), the application of a mixture of honey and sodium carbonate to the interior of the vagina, and the use of a pessary made from crocodile dung. All of these methods were used to prevent pregnancy. In ancient Egypt, one method of birth control was to breastfeed a child for as long as three years, and this practice may go for as long as five (Lipsey et al., 2005).

Ancient people in Greece and the ancient Near East may have employed an African variety of gigantic fennel called silphium as an oral contraceptive. Silphium is endemic to north Africa. The use of silium in medicine is significantly less well recorded than the use of silium in food, which was its primary function. Silphium was largely utilized in the culinary industry. There is a good chance that the effectiveness of silphium as a contraceptive has been significantly overestimated (Totelin, 2009). By the first century AD, it had become so rare that it was worth more than its weight in silver, and by the time late antiquity rolled around, it was completely extinct. Asafoetida, which is a close cousin of silphium, was likewise utilized for the contraceptive effects it had. Queen Anne's lace (*Daucus carota*), willow, date palm, pomegranate, pennyroyal, artemisia, myrrh, and rue were some of the other plants that were extensively employed for birth control in ancient Greece. Some of these plants are poisonous, and the safe doses for them are specified in ancient Greek manuscripts. Recent research has demonstrated that several of these plants have the ability to prevent pregnancy, such as demonstrating that Queen Anne's lace possesses post coital anti-fertility characteristics. The method of birth control known as Queen Anne's lace is being practiced in India today (Lipsev et al., 2005).

According to Norman E. Himes, the vast majority of the birth control techniques that were utilized in ancient times were most likely ineffectual. Coitus interruptus was very certainly the single most successful method of birth control that was available in ancient times. Before engaging in sexual activity, the ancient Greek philosopher Aristotle advocated for the application of cedar oil to the womb. This technique may have had some degree of success on occasion due to the fact that the oil may have gummed up the external and therefore inhibited the motility of the sperm. However, success with this technique would have been extremely sporadic and highly variable (Carrick, 2001). According to the Hippocratic literature *On the Nature of Women*, a woman who did not want to have children and did not wish to become pregnant could consume copper salt that has been dissolved in water. According to the later medical writer Soranus of Ephesus (about 98–138 AD), this procedure is not only unsuccessful but also harmful. He adopted a logical approach to the problem, dismissing the use of superstition and amulets in favour of mechanical solutions based on common reason, such as vaginal plugs and pessaries made from wool as the foundation and coated with oils or other sticky substances. According to Himes, a good number of Soranus's strategies were most likely unsuccessful as well (Carrick, 2001).

The Chinese physician Master Tung-hsuan reported both coitus reservatus and coitus obstructs in the 7th century BC. Both of these conditions limit the flow of semen

during intercourse. On the other hand, it is unknown if these practices were primarily utilized as measures of birth control or to maintain the man's yang. Sun Simiao was a scholar who lived during the Tang Dynasty in the Middle Ages. He is credited for documenting the "thousands of gold contraceptive prescription" for ladies who no longer want to have children. This remedy, which was intended to result in the induction of sterility, consisted of oil and quicksilver that had been combined, heated for one day, and then administered orally (Maurice I. Middleberg, 2003).

Contraceptive in the Medieval and Early Modern Period.

Coitus interruptus, the prevention of ejaculation, and the use of pessaries to block the cervix were all methods of birth control that were reported by the Persian physician Muhammad ibn Zakariya al-Razi somewhere in the late 9th and early 10th centuries. He gave an account of a number of pessaries, such as those made of elephant dung, cabbages, and pitch, which may be utilized singly or in combination (Bullough, 2002). During the same time period, the Persian scholar Ali ibn Abbas al-Majusi described the usage of pessaries composed of rock salt for pregnant women who faced risks associated with their pregnancy. In the early 10th century, the Persian polymath Abu Ali al-Hussain ibn Abdallah ibn Sina (Persian), who is better known in Europe as Avicenna, included a chapter on birth control in his medical encyclopaedia *The Canon of Medicine*. In this chapter, he listed 20 different strategies for avoiding conception (Maurice I. Middleberg, 2003).

Pessaries composed of honey, ghee, rock salt, or the seeds of the palasa tree were among the many forms of birth control utilized by Indians from ancient times. Other birth control methods utilized by Indians included a concoction made of powdered palm leaf and red chalk. Both the *Ratirahasya* ("Secrets of Love") from the 12th century and the *Ananga Ranga* from the 15th century contain a range of birth control prescriptions. These birth control prescriptions are mostly made up of herbs and other plants ("The Stage of the God of Love") (Maurice I. Middleberg, 2003).

According to (O'Reilly, 2010), the Catholic Church in western Europe during the middle ages regarded as sinful any attempt to stop or prevent pregnancy in a woman. Women during this time period continued to practice a variety of birth control methods, including coitus interruptus, the insertion of lily root and rue into the vagina, and the killing of newborn children after they were born (Robin et al., 2007).

John M. Riddle, a historian, has put up the theory that women in ancient times, the middle ages, and the early modern period utilized herbs to regulate their fertility in

order to avoid having children (Riddle, 1992). Riddle is quoted by the historian Etienne van de Walle as saying that "most women" in the Middle Ages were aware of the fact that some plants and medicinal herbs could be chosen to take to evoke a termination of pregnancy in the early stages, and that this information was primarily communicated amongst women, giving them "more control over their lives than we thought possible" (Bullough & Brundage, 2013). Riddle has more theorized that "these drugs were perfected over centuries in a female culture of which males who were doing the writing had only a partial and imperfect understanding" (van der Walle, 1994). He believes is responsible for the relatively static population size in the Western world prior to the 18th century, rather than the high rate of infant mortality. This theory has been challenged by a number of historians, including Gary Ferngren, who pointed out that Riddle's evidence was largely circumstantial and concluded that the ideas remained "unproven and unlikely" (Riddle, 1999).

Even while barrier measures like the condom have been available for a much longer time, traditionally, they have been largely seen as a means of avoiding sexually transmitted illnesses rather than pregnancy. In the 18th century, Casanova is credited with being one of the first men to be documented wearing "assurance caps" to protect his mistresses from becoming pregnant (Mindel, 2000). Richard Richter invented the first intrauterine device in 1909, and it was constructed from the gut of a silkworm. Ernst Grafenberg improved upon Richter's design and brought it to market in Germany in the late 1920s (Fritz & Speroff, 2011).

Contraceptive in the Modern Period.

During the 19th century in Britain, birth control developed become a politically contentious topic. Anglican clergyman, statistician, and economist Thomas Malthus argued in *An Essay on the Principle of Population* (1798). Positive checks, which increase the mortality rate, and preventative checks, which reduce the birth rate, were the two forms of population controls that he stated were necessary in order to maintain the population within the constraints of the available resources. Hunger, sickness, and war are examples of positive checks, whereas abortion, birth control, prostitution, and delaying marriage are examples of preventative checks (London, 1998). Malthus, in his capacity as a cleric, denounced birth control as "morally indefensible," placing it in the same category as abortion, killing infants, and adultery. Later on, Malthus elaborated on his contention that human misery (such as hunger, disease, and war) was the primary

limitation on population growth and would inevitably afflict society along with volatile boom-and-bust economic cycles.

The first permanent birth control clinic was established in Britain in 1921 by the birth control campaigner Marie Stopes, in collaboration with the Malthusian League. Stopes, who exchanged ideas with Sanger (Greer, 1984) wrote her book *Married Love* on birth control in 1918; - it was eventually published privately due to its controversial nature. The book was an instant success, requiring five editions in the first year and elevating Stopes to a national figure. Its success was followed up with *Wise Parenthood: A Book for Married People*, a manual on birth control, published later that year. She originally tried to publicize her message through the dissemination of pamphlets in the slums of East London, but this approach failed to work, as the working class was too mistrustful of well-intentioned meddlers at the time (Rado, 2004).

The first birth control pills were created by Gregory Pincus and John Rock in the 1950s with assistance from the Planned Parenthood Federation of America. These pills did not become widely available to the general public until the 1960s. After the discovery of prostaglandin analogues in the 1970s and the discovery of mifepristone in the 1980s, the medical termination of pregnancies became a viable option to the surgical termination of pregnancies (Kulier et al., 2011).

2.1.2. Types and Effectiveness of Contraceptives

There is a wide variety of contraceptive methods available, ranging from those that are natural to those that are artificial. These methods are classified as modern and natural or traditional methods (Table 1).

Table 1.

Type and Effectiveness of Contraceptive Methods

| Method | How It Works | Effectiveness: pregnancies per 100 women per year with consistent correct use | Effectiveness: pregnancies per 100 women per year as commonly used |
|---|--|--|---|
| Combined oral contraceptives (COCs) or Progestogen-only pills (POPs) | inhibits the ovary's ability to produce eggs (ovulation) Cervical mucus is thickened, which hinders ovulation by preventing | 0.3 | 7 |
| | | 0.3 | 7 |

| | | | |
|---|---|---|---|
| | sperm and egg from meeting. | | |
| Implants | Increases the thickness of the cervical mucus, which serves as a physical barrier between the sperm and the egg, so preventing ovulation. | 0.1 | 0.1 |
| Progestogen only injectables | Cervical mucus thickens to restrict sperm-egg contact and hinder ovulation. | 0.2 | 4 |
| Monthly injectables or combined injectable contraceptives (CIC) | Inhibits the ovary's ability to produce eggs (ovulation) | 0.05 | 3 |
| Combined contraceptive patch and combined contraceptive vaginal ring (CVR) | impedes the ovary's natural ability to produce offspring (ovulation) | 0.3 (for patch) 0.3 (for vaginal ring) | 7 (for patch) 7 (for contraceptive vaginal ring) |
| Intrauterine device (IUD): copper containing | Copper in the environment causes harm to sperm, preventing them from reaching the egg. | 0.6 | 0.8 |
| Intrauterine device (IUD) levonorgestrel | mucus in the cervix gets thicker to prevent sperm and egg from coming into contact | 0.5 | 0.7 |
| Male condoms | creates a barrier that stops sperm and egg from coming into contact | 2 | 13 |
| Female condoms | creates a barrier that stops sperm and egg from coming into contact | 5 | 21 |
| Male sterilization (Vasectomy) | inhibits sperm from entering the ejaculated sperm | 0.1 | 0.15 |
| Female sterilization (tubal ligation) | Eggs are blocked from meeting sperm | 0.5 | 0.5 |
| Lactational amenorrhea method (LAM) | Inhibits the ovary's ability to produce eggs (ovulation) | 0.9 (in six months) | 2 (in six months) |
| Standard Days Method or SDM | Pregnancy can be avoided if vaginal intercourse is avoided during the most fertile times of the month. | 5 | 12 |
| Basal Body Temperature (BBT) Method | Pregnancy can be avoided if vaginal intercourse is avoided during the most fertile times of the month. | There are no dependable rates of efficacy that can be used. | |
| Two-day Method | avoids getting pregnant by not having vaginal intercourse without protection at peak reproductive times, | 4 | 14 |

| | | | |
|---|--|---|----|
| Symptom-thermal Method | Avoiding unprotected vaginal intercourse during ovulation can prevent pregnancy. | <1 | 2 |
| Emergency contraception pills | slows or stops the ovary from producing an egg. Contraceptive pills can be used up to 5 days after unprotected intercourse to prevent pregnancy. | < 1 for ulipristal acetate ECPs 1 for progestin-only ECPs 2 for combined oestrogen and progestin ECPs | |
| Calendar method or rhythm method | Abstaining or wearing a condom during the first and last predicted fertile days will prevent conception for the pair. | There are no dependable rates of efficacy that can be used. | 15 |
| Withdrawal (coitus interruptus) | Attempts to stop conception by limiting sperm access to the female reproductive system. | 4 | 20 |

WHO, 2020. <https://www.who.int/news-room/fact-sheets/detail/family-planning-contraception>

Natural Methods for Birth Control.

The term "natural birth control" refers to any technique of contraception that does not include the use of medical drugs. These ideas originated from an awareness and an accumulation of observations on the female body and the menstrual cycle. Various natural births control is to be distinguished:

Calendar method or rhythm method: The ovulation cycle is the foundation of this all-natural form of contraception. This entails avoiding sexual activity on the days when you are at your most fertile and have the highest chance of conceiving a child (Simmons & Jennings, 2020). This method has a prevalence of 3.2% in the country (WHO, 2020).

Withdrawal: It is a method of birth control to withdraw the penis from the vagina before ejaculating in order to prevent pregnancy. The probability of becoming pregnant is 22 times out of 100 for individuals who rely solely on withdrawal as a means of contraception (Marston et al., 2018).

Basal body temperature: Taking a woman's temperature first thing in the morning is a necessary step in the basal body temperature approach. When a woman's temperature lowers by roughly one degree Fahrenheit 12 to 24 hours before her ovary releases an egg, this is a sign that she is in a very fertile phase of her cycle. If you want to avoid becoming pregnant at this time, you should avoid having sexual contact with other people. This time

span begins when the temperature begins to decrease and ends between 48 and 72 hours after it returns to normal (Shilaih et al., 2018).

Symptothermal: when using symptothermal contraception, women learn about their menstrual cycles and then use that knowledge to plan for pregnancy (Thao et al., 2020).

Two-Day Method: an individual adhering to the Two-Day Method does so at least twice daily to check for cervical secretions. Today is a fruitful day if there have been secretions of any kind, colour, or consistency "today" or "yesterday." The days that secretions occur are recorded and noted on a simple card (Institute for Reproductive Health, 2022).

Natural methods of birth control are the least expensive methods now available, although they do need a solid comprehension of the ovulation period. Due to the fact that this process is challenging for some users, they opt to turn to alternative forms of birth control instead (Institute for Reproductive Health, 2022).

Modern Contraceptives Methods.

The artificial methods of birth control require the use of a medicine or a physical device, in contrast to the natural methods, which do not entail either (Nelson, 2017).

Long-acting reversible contraception

Long-acting reversible contraception refers to birth control techniques that are able to offer effective birth control for a long length of time without needing any activity on the part of the user (Nelson, 2017). The method include: (Nelson, 2017).

Intrauterine devices: A Tiny, T-shaped contraceptive device called an IUD or an intrauterine system (IUS) is put into the uterus to prevent pregnancy. Both of these terms refer to the same thing. The gadget will only be inserted by a qualified medical professional. An IUD can be left in place and continue to perform its intended purpose for a period of several years at a time. After the period of time that is suggested, or when the woman decides that she no longer requires or prefers contraception, a medical professional will either remove or replace the device (Nelson, 2017). We differentiate between the hormonal IUD or IUS and the copper IUD. A progestin hormone called levonorgestrel is released into the uterus through a hormonal IUD or IUS. The hormone that is secreted causes the cervical mucus to become thicker, prevents sperm from accessing the egg or fertilising it, causes the uterine lining to become thinner, and may hinder the ovaries from producing eggs (Lichtenstein Liljeblad et al., 2022). A hormonal IUS has a success rate of less than 1%; nevertheless, a tiny number of women may have

expulsion of the device, which requires them to have it reinserted into their bodies. According to the findings of certain studies, the efficacy of these IUDs can be maintained for up to an additional year after the amount of time that is indicated for their usage. Because the hormone often lessens or eliminates uterine bleeding, this approach can also be used to treat severe menstrual bleeding (Diane Duke Williams , 2015). Copper IUDs prevent sperm from accessing the egg and fertilising it, and they may also prevent an egg from adhering to the uterine wall. Even if fertilisation of the egg does take place, the presence of the device ensures that the fertilised egg cannot attach itself into the endometrial lining of the uterus and result in a pregnancy. A copper IUD has rates of failure and expulsion/reinsertion that are comparable to those of a hormonal IUD. IUDs made of copper can stay in the body for up to ten years (Diane Duke Williams, 2015; Ingle et al., 2021).

Implant: They are implantable rods. Each rod is about the size of a matchstick and is made of a plastic that is bendable. The technique has a success rate that is lower than one percent (Diane Duke Williams, 2015). A surgeon makes an incision in the woman's upper arm, and then inserts the rod there through the skin. It is possible to leave the rod inserted for up to five years, during which time it will secrete a progestin. In the United States, the only implantable rods now available are the brands Implanon® and Nexplanon®, both of which are designed to deliver levonorgestrel. The two-rod approach known as Jadelle®, which is authorised by the FDA and causes the release of levonorgestrel, is not currently supplied in the United States. A novel procedure called Sino-implant (II)®, which involves two rods and releases levonorgestrel, is now in the clinical development stage (Ali et al., 2017).

Hormonal Contraception Methods.

The hormonal technique of contraception is one of the most successful forms of birth control. This method requires the woman to take hormones on a regular basis in order to prevent pregnancy from occurring. Pills, injections, skin patches, transdermal gels, vaginal rings, intrauterine devices, and implanted rods are just some of the ways that hormones may be delivered into the body. Other techniques include transdermal gels and vaginal rings. These treatments can stop ovulation by thickening cervical mucus, which helps prevent sperm from reaching the egg; thinning the lining of the uterus, which makes it more difficult for sperm to reach the egg; or all three of these things, depending on the types of hormones that are used (Polis et al., 2016).

The many hormonal contraceptive techniques include of the following: (Polis et al., 2016).

Short-acting hormonal methods: they are methods of contraception that need to be taken or replaced every day, week, or month. These methods of contraception are sometimes referred to as 'hormonal implants.' They are all made up of hormones. While these methods of birth control are highly efficient in reducing the likelihood of a woman becoming pregnant, they do not protect against sexually transmitted diseases. These include the combination oral contraceptive pill, the progestogen only pill (also known as the mini pill), the contraceptive patch, and the contraceptive ring. Other short-acting contraceptives include the contraceptive ring (NuvaRing). (Polis et al., 2016).

Combined hormonal method: Combined hormonal techniques include the use of a synthetic oestrogen known as ethinyl estradiol in addition to one of the several progestins that are authorised for use in the United States. Each of the products achieves its desired effect by blocking ovulation and increasing the viscosity of the cervical mucus. Ovulation suppression is the primary purpose of combined oestrogen and progestin medicines, which can be administered in pill form (the pill). A woman takes one tablet each day, preferably at the same time each day; in addition, she applies a patch, which is a small piece of plastic that adheres to the skin and delivers hormones into the bloodstream through the skin. The patch could be applied to the upper torso, the lower belly, the buttocks, or one of the arms. Either a vaginal ring (the ring is thin, flexible, and approximately 2 inches in diameter. A new patch is applied once a week for 3 weeks, and then there is no patch used on the fourth week to enable menstruation), or a vaginal patch (a new patch is applied once a week for 3 weeks, and then there is no patch used on the fourth week to enable menstruation). It administers an amalgam of ethinyl oestradiol and a progestin at the same time. After being placed in the vagina, the ring will continue to discharge its hormone contents for a period of three weeks. The woman takes it off for the fourth week in a row, and then seven days later, she puts on a new ring. The risks associated with this type of birth control are comparable to those associated with the use of combination oral contraceptives. For women who suffer from specific health concerns, such as high blood pressure, heart disease, or certain forms of cancer, it is possible that a vaginal ring will not be suggested. The synthetic oestrogen contained in the product is related with some health hazards, including the formation of blood clots, which are posed by the combined hormonal approaches. Injectable birth control, progestin-only oral contraceptives (POPs), and hormonal long-acting reversible contraceptives (LARCs) have not been shown to have these hazards (CDC, 2013; Williams & MacDonald, 2021).

Barrier Contraceptives Methods.

Barrier methods of contraception are reversible and may be an alternative for women who are unable to use hormonal methods of birth control since they are designed to stop sperm from entering the uterus. The percentage of attempts that are unsuccessful using barrier strategies varies from one method to the next (Trussell, 2011). Types of barrier methods that do not require a health care provider visit include the following:

Male condom: this condom consists of a thin sheath that is placed over the woman's penis in order to catch any sperm that may be present and prevent it from entering the woman's body. Lambskin is a more natural alternative to latex or polyurethane, which are the two most common materials used in the manufacture of male condoms (made from the intestinal membrane of lambs). Condoms made of latex or polyurethane lower the likelihood of a person contracting a sexually transmitted illness (STDs). Lambskin condoms do not prevent STDs. After a single usage, male condoms are intended to be thrown away (Chowdhry et al., 2018).

Female condoms: these are thin plastic bags that are flexible and pliable. Before engaging in sexual activity, a woman should have a part of a condom put into her vagina. This will prevent any sperm from entering her uterus. The female condom protects against sexually transmitted diseases (STDs) as well. After a single usage, female condoms are discarded and replaced (Beksinska et al., 2020).

Contraceptive sponges. these are gentle foam sponges that are disposable and packed with spermicide. Before having sexual relations, one is placed within the vagina. Both the spermicide and the sponge work together to prevent sperm from entering the uterus and destroy the cells that make up sperm. Following sexual activity, the sponge should remain in place for at least six hours, and then it should be removed no later than thirty hours after the activity (SyamRoy, 2017).

Spermicides: a spermicide can destroy sperm cells. It is possible to employ a spermicide on its own or in conjunction with another method, such as a diaphragm or a cervical cap. A substance known as nonoxynol-9 is the spermicidal agent that is used most frequently. You may get it in a variety of concentrations as well as different forms, such as foam, jelly, cream, suppositories, and film. In order to avoid becoming pregnant, a spermicide should be placed in the vaginal area near to the uterus no more than half an hour before sexual activity and should be left there for between six and eight hours following the activity. Spermicides are not effective in preventing the spread of sexually transmitted diseases (STDs) and have the potential to trigger allergic responses or vaginitis (Xia et al., 2020).

Diaphragms: each diaphragm is a shallow, flexible cup made of latex or soft rubber that is put into the vagina prior to intercourse to prevent sperm from entering the uterus. Latex and soft rubber are both examples of materials that may be used to make diaphragms. It is important to use a diaphragm in conjunction with spermicidal cream or jelly. In order to prevent pregnancy, the diaphragm should be left in place for six to eight hours following sexual activity; nevertheless, it should be removed within twenty-four hours. In order to function successfully, traditional latex diaphragms need to be of the appropriate size; a medical professional is the best person to decide how well they will fit (Mustapha, 2022).

Cervical caps: cervical caps are quite comparable to diaphragms; nevertheless, they are more compact and stiffer. Before engaging in sexual activity, a cervical cap, which is made of a thin cup made of silicone, is placed in the vagina in order to prevent any sperm from entering the uterus. Cervical caps, just like diaphragms, are most effective when worn in conjunction with spermicidal cream or jelly. In order to prevent conception, the cap must stay in place for between six and eight hours after sexual activity, although it must be removed within forty-eight hours. Cervical caps are available in a variety of sizes, and the size that an individual should wear is determined by a medical professional (Schickler & Patel, 2020).

Emergency Contraceptive.

The term "emergency contraception" refers to a group of procedures that can be used to prevent pregnancy in the event that sexual activity took place without the use of a birth control method or in the event that the birth control method did not function properly. The methods can be used as emergency contraception is given below.

Copper IUD: The intrauterine contraceptive device made of copper is the most reliable technique of emergency contraception. Within one hundred and twenty hours of having an unprotected sexual encounter, the device can be implanted. This approach has the extra benefit of providing a very effective means of contraception for as long as the device remains in place, in addition to its almost one hundred percent success rate in preventing pregnancies. The use of a copper intrauterine device (IUD) has very few medical conditions that should not be combined with its usage, and there are no health risks connected with using the procedure that are related to weight or obesity (Turok et al., 2021).

Emergency Contraceptive Pills: ECPs, also known as emergency contraceptive pills, are hormonal tablets that can be taken in either a single dosage or two doses that are separated

by 12 hours. They are designed to be used in the case of unprotected sexual activity. If the tablets are taken before ovulation, they have the potential to postpone or block ovulation for at least 5 days, which will provide the sperm enough time to go dormant. In addition to this, they are known to create a thickening of the cervical mucus and may impair the activity of sperm. Although emergency contraceptive pills (ECPs) should be taken as soon as possible following semen exposure, they should not be used as a routine means of contraception. It is possible for a woman to become pregnant if birth control tablets are taken after ovulation or if she has sexual activity that is not protected within the same cycle (Matyanga & Dzingirai, 2018).

Sterilization contraceptive.

A permanent method of birth control, sterilisation either stops a woman from becoming pregnant or stops a man from producing sperm. Sterilisation can be performed on either the woman or the male. The sterilising process, which typically requires surgical intervention, must be carried out by a medical professional. The results of these treatments are typically irreversible (VanBenschoten et al., 2022). The different methods include (VanBenschoten et al., 2022):

Sterilization implant: The fallopian tubes can be permanently blocked via a nonsurgical approach called a sterilisation implant. The fallopian tubes are pronounced fall-oh-pee-uhm. A gentle, flexible insert is inserted into each fallopian tube by a medical professional by means of a tiny tube that is passed via the vagina and into the uterus of the patient. There is no need to make any incisions. The following three months will result in the formation of scar tissue around the inserts, which will eventually block the fallopian tubes and prevent sperm from reaching an egg. After three months, a healthcare professional will undertake testing to check that scar tissue has completely shut the fallopian tubes. These tests are performed after the initial surgery. Until the results of the tests demonstrate that the tubes are completely blocked, a backup form of contraception is utilised (VanBenschoten et al., 2022).

Tubal ligation: A tubal ligation is a surgical treatment in which the fallopian tubes are either cut, tied, or otherwise sealed up by the doctor. Because to this treatment, there is no longer a connection between the ovaries and the uterus. Both the sperm and the egg are unable to reach their respective destinations, preventing fertilisation of the egg and pregnancy respectively (Sung & Aoramovitz, 2019).

Vasectomy: it refers to a surgical technique that involves cutting, closing, or blocking the vas deferens. The urethra is prevented from having access to the testicles by means of this operation. It is impossible for the sperm to get out of the testes and reach the egg. It is

possible that the operation won't be completely successful until after a period of three months has passed. Until it can be determined by testing that there is no sperm present in the sperm sample, a backup form of contraception is utilised (Fainberg & Kashanian, 2018).

2.2. Adolescents and Unplanned-Unwanted Pregnancy

In between childhood and maturity, there is a period of development known as adolescence. WHO considers everybody between the ages of 10 and 19 to be adolescents. By the World Health Organization's standards, a "young person" is someone between the ages of 10 and 24 (WHO, 2022). Adolescents go through a period of fast physical, mental, and social development. The way people feel, think, decide, and deal with the world around them are all impacted. The term "adolescence" is sometimes used interchangeably with "puberty," a term that refers to the period of time when a person's physical appearance changes and ultimately when they reach reproductive maturity (Bob-Manuel Benibo & Azuonwu Goodluck, 2022). This period of maturity is sometime marked by unwanted pregnancy. Adolescent unintended pregnancies are a major public health concern and are linked to several adverse health consequences. Recent studies estimate that 37% to 82% of all pregnancies in teens are unintended. About half of the estimated 21 million annual pregnancies among 15-19 years olds in low and middle-income countries were unintended in 2019, with the majority of these being pregnancies among teenage girls. About half of these unintended pregnancies among teenage girl result in miscarriage, that are frequently unsecure (WHO, 2022). In a study conducted by (Kadek Angie, et alt., 2017), it was found that one of the factors that contributes to adolescent pregnancy that isn't intended is a lack of knowledge on sexual and reproductive health in both the family and the classroom. Another is a lack of confidence in adolescent girls' ability to say no to sexual activity before marriage. Family planning and nursing practitioners can therefore be of a good role to this.

2.3. Counselling Services in Family Planning Services.

Family planning (FP) counselling of high quality is essential to promoting the use of contemporary contraceptives that are suitable for individual partners. There are negative health effects on mothers and babies that may be mitigated if more people used contemporary contraception (Naoko Kozuki & Neff Walker, 2013). When Bruce

constructed a theoretical framework on the quality of family planning services about three decades ago, he started a dialogue that has since spread throughout the world on the topic of the quality of family planning counselling; Included in the framework are considerations for the following areas of contraceptive technology: safety, technique combination alternatives, technical abilities, two-way share in provision of information, adverse reactions management, follow-up care (along with technique or supplier switching), and adoption with other services for reproductive health (Bruce J, 1990). In more recent research on the quality of family planning services, the emphasis has been placed on interpersonal relations, or the experiences of individuals. These include aspects such as counselling that is respectful and considerate of the couple and women's dignity, privacy, and confidentiality, as well as the practical consideration of whether or not the service is ready to provide the quality of care that is intended at the policy level (Jain, Anrudh K & Hardee, Karen, 2018). It is essential to provide couples with family planning counselling that is of a high quality and treats them with respect in order to encourage contemporary contraceptive usage and satisfy the family planning requirements and goals of couples. Previous research on a variety of contraceptive methods has shown that factors associated with the use and continuation of contraceptive methods include characteristics of FP counselling. These factors include proper counselling on side effects and information, clarification of misconceptions, and addressing spousal dynamics such as covert use and communication. A study also show that it is important to give patients with counselling sessions that offer possibilities for information sharing in order to support a choice that is tailored to the patient's reproductive needs and objectives (Dehingia Nabamallika, et alt., 2019).

2.4. Nursing roles and Responsibilities on Family Planning

Over the past several years, the nurse's position in family planning has taken on additional responsibilities and expanded in scope. The role of the nurse has expanded to include participation in all aspects of family planning. There are opportunities to participate as a case-finder during prenatal and postpartum contact, particularly within the context of the family-centred nursing programme. As the first point of contact in the family planning clinic, the nurse has the opportunity to promote a constructive outlook on family planning, evaluate the patient's knowledge, lead group discussions, facilitate communication, and answer questions, as well as prepare the client for examination and

clarify and instructions for the new patient (Loretta Gavin, et al., 2014). Follow-up care, which may include home visits and a “hot line,” is of the utmost significance in order to calm the nerves of newly diagnosed contraceptive patients. The function of the nurse in follow-up care allows for the management of any physical or psychological issues that may be affecting new patients who do not return to the clinic. In situations where the nurse’s personal religious or societal issues are in direct opposition to those of the patient, she must always have a professional demeanour. In certain countries, nurses now have the opportunity to take on a new job known as the nurse practitioner, whereas in other nations, lay employees may take on tasks that were previously regarded to be exclusive to nurses (Vivian Fukumasu da Cunha & Fabio Scorsolini-Comin, 2019). Because of the nurse’s participation in the community and her acquaintance with its requirements, it was proposed that she take part in all elements of the program’s creation and assessment.

2.5. Related Researches on the Knowledge, Attitudes and Practices of Contraceptive Methods

A wide variety of studies have been carried out in order to investigate the levels of knowledge, attitude, and practise about various methods of contraception.

In a study conducted by Thao et al., college students were sexually active (67%) and most of them reported not using condom (Thao et al., 2020).

Bongongo & Govender (2019) sought to determine the knowledge, attitudes and practices of contraceptive methods among women seeking volunteering termination of pregnancy in South Africa. Knowledge was poor for 28 (22.2%) women. It was satisfactory for 91 (72.2%) women and excellent for 7 (5.5%) women. Looking at the attitude: 124 (98.4%) approved the use of contraception, 1 (0.79%) disapproved and 1 (0.79%) abstained because of religious beliefs. Regarding the practice of contraception: 92 (73.0%) have already used contraceptive methods, while 34 (27.0%) have not (Bongongo & Govender, 2019).

Nkwabong et al., (2015) attempted to examine the HIV positive women in Cameroon in terms of their knowledge, attitudes, and behaviours about contraception. 98% of the 200 HIV-positive women participants were knowledgeable of at least one type of contraception. As soon as the women were 30 years old, divorced, had 3 living children, and when the women were educated, the need for a contraceptive method was present in 84% of HIV positive women. The percentage of people who used condoms was 50.7% (Nkwabong et al., 2015).

The knowledge, attitudes, and practises of refugees about contraception were evaluated by Halle-Ekane et al., (2016) in Yaoundé, Cameroon. 213 of the participants (80.7%) were aware of contemporary contraceptives, 209 of the participants (79.2%) had seen modern contraceptive techniques, and 213 of the participants (80.7%) believed that modern contraceptives might prevent pregnancy and sexually transmitted illnesses. Condom usage was selected as the most desired method of birth control by 161 (83.3%) of the total respondents. However, only 96 (36.4% of participants) reported using condoms during their most recent sexual encounter, and the majority of those who did so were male (Halle-Ekane et al., 2016).

Women in Jeddah, Saudi Arabia were polled on their awareness of various kinds of birth control and the frequency with which they used various forms of birth control in order to learn more about the patterns of contraception usage. The study was conducted by (Alhusain et al., 2018). A total of 67.7% of Saudi women residing in Jeddah reported

ever having used some form of contraception. The primary objective of contraceptive use, reported by 69.7% of users, was to avoid becoming pregnant. Oral contraceptives were the type of contraception that was used the most (31.8%), while intrauterine devices were the type that was used the second most (21%). The withdrawal technique was utilised by about 16.4% of people, while the male condom method was used by 13.6% of people. The most prevalent adverse effects reported by patients (34.6% of all cases) were changes in mood and feelings of despair. In addition, those who had just a primary education reported using contraception 47% less frequently than people who had a high degree of education (Alhusain et al., 2018).

Brito et al., 2018 investigated the level of knowledge and actual usage of several methods of birth control among pregnant adolescents in Brazil. Participants pregnant between the ages of 10 and 19 years old were questioned about their awareness of birth control methods and whether or not they had ever used birth control. The study comprised a total of 90 individuals, each of whom had a mean age of 15.4 years (standard deviation: 1.7 years) and a mean age of 13.8 years (standard deviation: 1.2 years) when they had their first sexual encounter. The majority of the participants did not have children (54/90), were unemployed (81/90), did not have a spouse (58/90), were of mixed race (57/90), had a family income that was lower than the minimum wage (59/83), and lived with their parents. When they became pregnant, more than 80% were either not using birth control at all or utilising it in an inconsistent manner. The majority of individuals reported having awareness of several methods of birth control, including condoms (82/90), the combination oral contraceptive pill (75%/90), and injectable contraceptives (68%/90). On the other hand, fewer than half of the respondents claimed having awareness of long-acting reversible contraceptive techniques. When it came to plans for birth control following a pregnancy, the contraceptive injection was mentioned the most (36 out of 90 times), followed by intrauterine devices (17 out of 90 times), and combination oral contraceptive pills (9 out of 90 times) (Brito et al., 2018).

Guzzo & Hayford, (2017) investigated whether or not the knowledge and attitudes of adolescents had any impact on the contraceptive behaviours of adults over the long run. The findings highlighted that in models adjusted for a range of socioeconomic, demographic, and life course factors, positive attitudes toward contraception in adolescence raised the likelihood of using more sophisticated techniques rather than a less successful method or no method of contraception in adulthood. In addition, the findings indicated that more precise condom knowledge and more correct reproductive knowledge increased the odds. Those adolescents who had more positive views about contraception

as teenagers were also more likely to use contraception on a regular basis as adults. This was also true for those adolescents who had more accurate condom knowledge (Guzzo & Hayford, 2017).

Ahmed et al., (2017), conducted a study with the intention of determining the amount of general awareness on contraceptives, sexual habits, and the level of usage of contraceptive devices among students at Bayero University Kano who were not married. The respondents had an overall awareness about contraception that was 87.7%, with the internet (91%) and the media (89.3%) being the most prevalent sources of information. There were 10.67% sexually active students in the student body, and 15.63% of those sexually active students reported using some kind of birth control. About 8 (25%) made their first sexual encounter before the age of 16; 22 (68.75%) did so between the ages of 16 and 20; and just 4 (12.5%) did so after the age of 20. All sexually active responders perform vaginal sex. The majority of respondents' first sexual experiences were premeditated (44.75%), took place in the company of friends (86.4%), and happened between the ages of 16 and 20 years old (70.3%) (Ahmed et al., 2017).

Huber-Krum et al., 2022 tested the association between negative childhood experience and the use of contraceptives among young adults of Honduras and pointed out that Sexual abuse and parental separation decreased the likelihood of using contraception in women (Odds Ratio (OR) < 0.60), but not in males. Orphan status, on the other hand, increased the likelihood of males using contemporary contraception (OR 1.93) and women using condoms frequently (OR 2.22) (Huber-Krum et al., 2022).

CHAPTER III

Methodology

This chapter provides information about the research design, participants/sample, data collection and analysis procedures as well as how the findings are analysed.

3.1. Research Design

This study design is descriptive study and relations-seeker.

3.2. Participants/Population & the Sample / Study Group

3.2.1. Area of study, population & period of study.

The study was conducted in the District of Bonaberi, Cameroon. Bonaberi extends on the right bank of the Wouri estuary between the districts of Bonassama on the southern tip of the peninsula and the confines of the Moungo department in the Bonjongo, Ndobu, and Bonendale districts. The district is located on a peninsula that faces the other districts of Douala, and it is connected to the eastern districts by a double bridge over the river. Bonaberi faces the other districts of Douala from its position on There are two main highways that provide access to Bonaberi: national 3, sometimes known as the “New Route,” and the ancient Douala-Nkongsamba Road. The population according to the religion is constituted of catholic (the most represented), Protestant, and Muslims (All Africa, 2003). The district of Bonabéri has five secondary schools including two high schools and three colleges, three are English-speaking and two French and English-speaking. The schools include the Government High School of Bonaberi, the Technical Government High School of Bonaberi, Dauphin college, Intac College, and Saker college; with respectively 412, 380, 348, 266, and 243 students aged between 15-25 years.

The population in this study was composed of students from the different schools of Bonaberi, Cameroon.

3.2.2. Sample Size Determination

The sample size will be calculated using the Slovin's Formula:

$$n = N / (1 + N * e^2)$$

Where n = Number of samples

N = Total population

e = Margin of error

Given a total population of student aged between 15-25 years as shown in Table 2.

Table 2.

Distribution of students aged 15-25 years per school

| Name of the School | N per school | percentage | n per school |
|--|---------------------|-------------------|---------------------|
| Government High School of Bonaberi | 412 | 25 | 80 (+27) |
| Technical Government High School of Bonaberi | 380 | 23 | 74 (+13) |
| Dauphin college | 348 | 21.1 | 68 |
| Intac College | 266 | 16.13 | 52 (+17) |
| Saker college | 243 | 14.73 | 47 |
| Total | 1649 | 100% | 322 (379) |

The number was calculated using sample size method of sample size determination of the known population. The sample size was calculated as 322 and 379 students who formed the sample group, volunteered to participate in the research. The study used self-selection sampling of non-probability sampling technique. The criteria for inclusion in the sample group were as stated below.

Inclusion criteria:

- To speak and understand English.
- To be student aged between 15-25 years
- To be volunteered to participate in the study
- To be sexually active

3.3.Data Collection Tools / Materials

Data collection tools are the student information form, the knowledge and Practices of Contraceptive Methods Questionnaire and Contraceptive Attitude Scale (CAS).

3.3.1. Student Information Form.

This form was used to collect student information from the participants that included a total of 5 questions: age, gender, grade/years, religion, marital status, sexual activity. (Attachment A)

3.3.2. Knowledge and Practices of Contraceptive Methods Questionnaire.

This structured questionnaire was used to collect information about knowledge and practices of contraceptive methods from the students that included a total of 6 questions: frequency of current contraceptive methods uses and type, known contraceptive methods, frequency of practice contraceptive methods, source of knowledge and service of family planning use. (Attachment B). This questionnaire was prepared by the researchers.

3.3.3. Contraceptive Attitude Scale (CAS).

The study used the Contraceptive Attitude Scale (CAS) developed by Dr. Kell Black in 2013 (Attachment C). The CAS is a 5-item self-report and a 32-item scale. All items are rated based on a 5–point rating scale (strongly disagree =1 to strongly agree = 5). The CAS measure general contraceptive attitudes with 17 positively and 15 negatively phrased items to which respondents indicate their level agreement or disagreement. Negatively worded questions were reversed so that all questions were positively scored. The total score was a sum of the responses to each item. The higher scores indicated more positive attitudes towards contraception while lower scores indicated more negative attitudes towards contraception. A score of 5 of the final result indicated a very positive attitude. The scale has a statistically significant test-retest reliability (Black, 2013). The Cronbach alpha value of this scale was founded 0.820.

3.4. Data Collection Procedures

The data collection was performed during June 1-30, 2022. All participants provided their informed consent before any surveys were distributed. There was a strong emphasis on the fact that the test was completely confidential and that the findings would be utilised for scientific investigation alone. Individual questionnaires were filled out by research participants who volunteered to take part in the survey. The questionnaires were distributed to student during their free time according to the timetable provided by the principals of the different colleges. All questions from the participants regarding some misunderstanding of some part of the questionnaire were answered instantly by the investigator. During the collection, the questionnaire was checked if the participants responded to all the questions, and all the answer were interred into a Ms Excel file. All the participants responded to all the questions in the questionnaire, the study obtained a 100% response rate.

3.5. Data Analysis Procedure

The data for this study were analysed with the statistical software IBM SPSS Statistics version 28. The distribution of the students according to their socio-demographic characteristics is shown by frequency analysis. Cronbach alpha reliability test was performed Descriptive statistics. Frequency and percentage were used to access the level of knowledge and practices of contraceptive methods among students. to access relationships between knowledge and practices of contraceptive methods and sociodemographic characteristics, descriptive statistics frequency and percentage, and bar-plot graphs were used. Median descriptive statistics was used to access the students' attitude toward contraceptives methods. To access the relationships between level of contraceptive methods attitudes scale and sociodemographic characteristics, descriptive statistics mean and median were used. The data of this study were analysed using descriptive statistics tests, pearson chi-square, kruskal wallis test, kolmogorov-smirnoff, student's t test, mann-whitney test and the one way annova.

3.6. Ethics Considerations

This study was approved (YDÜ72022/103-1562) by the Ethics Committee board of NEU Hospital on the 26th May, 2022 (Attachment D). In accordance with the “Declaration of Helsinki on Human Rights”, the participants who voluntarily participated in the research. Each participant was asked to sign a written consent form to allow the use of his/her information in this study (Attachment A).

CHAPTER IV

4. Findings

This chapter presents the finding based on the collected data.

4.1. Findings for the Demographic Characteristics of the Students

Table 3.

Distribution of the Students According to Socio-Demographic Variables (n=379)

| Demographic Characteristic | Categories | n | % |
|-----------------------------------|---------------------|----------|----------|
| Age | 15-18 | 60 | 15.83 |
| | 19-22 | 174 | 45.91 |
| | 23-25 | 145 | 38.26 |
| Gender | Male | 224 | 59.1 |
| | Female | 145 | 38.3 |
| | Missing | 10 | 2.6 |
| Religion | Catholics | 214 | 56.5 |
| | Muslims | 24 | 6.3 |
| | Protestants | 77 | 20.3 |
| | Others | 64 | 16.9 |
| Sexual activity | Sexually active | 187 | 49.3 |
| | Not sexually active | 82 | 21.6 |
| | No response | 110 | 29.0 |
| Marital Status | Single | 208 | 54.7 |
| | Married | 12 | 3.2 |
| | Engaged | 15 | 3.9 |
| | Had a relationship | 111 | 29.2 |
| | Others | 33 | 8.7 |

In Table 3, the distribution of the students' descriptive characteristics is given. It is seen that 15.83% of students are 15-18 years old, 45.91% are 19-22 years old, 38.26% are 23-25 years old. It was found that 59.1% of students were male, and 38.3 were female. Furthermore, 6.3% of the students were Muslim, 20.3 were Protestant, 56.5 were Catholic, and 16.9 did not agree to report that religion. In addition, 49.3 of these students were sexually active, 21.6 were not sexually active, and 29 did not provide their sexual activity status. More ever, 54.7% of students were single, 3.2% were married, 3.9% were engaged, 29.2% were in a relationship and 8.7% had another marital status.

4.2. Findings for Research Question 1

Table 4.

Percentage and Frequency of Known, Used Contraceptive Method, Sources Acquisition and Information of Contraceptive Methods (n=379)

| Title | n | % |
|---|----------|----------|
| Known Contraceptive Methods Use* | | |
| Male Condom | 292 | 76.5 |
| Female Condom | 82 | 21.6 |
| Withdrawal | 52 | 13.7 |
| Oral Contraception | 41 | 10.8 |
| Every 3 month-hormone shot | 25 | 6.5 |
| Intrauterine Devices | 18 | 4.7 |
| Birth Control Patch | 7 | 1.8 |
| Vaginal Ring | 9 | 2.3 |
| Spermicide | 9 | 2.3 |
| Diaphragm | 11 | 2.9 |
| Emergency Contraception | 25 | 6.5 |
| Abstinence | 176 | 46.4 |
| Current Contraceptive Methods Use* | | |
| Male Condom | 310 | 81.7 |
| Abstinence | 213 | 56.1 |
| Withdrawal | 97 | 25.5 |
| Female Condom | 66 | 17.4 |
| Oral Contraception | 56 | 14.7 |
| Emergency Contraception | 34 | 8.9 |
| Intrauterine Devices | 22 | 5.8 |
| Every 3 month-hormone shot | 19 | 5.0 |
| Diaphragm | 9 | 2.3 |
| Vaginal Ring | 7 | 1.8 |
| Birth Control Patch | 5 | 1.3 |
| Spermicide | 2 | 0.5 |
| Sources of Acquisition of Contraceptive Methods* | | |
| Healthcare facilities | 268 | 70.7 |
| Shops | 128 | 33.7 |
| Internet | 13 | 3.4 |
| Status of information searches about Contraceptive Methods | | |
| Yes | 338 | 89.1 |
| No | 41 | 10.9 |

| Source of Knowledge about Contraceptive Methods | | |
|--|-----|-------|
| Family, Friends | 158 | 27.47 |
| Social Media | 132 | 22.95 |
| Books, Journal etc | 114 | 19.82 |
| Family Planning Services | 92 | 0.16 |
| Internet Search | 79 | 13.73 |

*The students gave more than one answer and the percentages were calculated according to n

In Table 4, the frequency of known contraceptive methods, the frequency of current contraceptive methods used, the sources of acquisition of contraceptives methods, the Status of information searches about Contraceptive Methods, and the Source of Knowledge about Contraceptive Methods are given. When the most known and used contraceptive methods are examined; it is seen that male condom accounted for 76.5% of the contraceptive methods known by the students, female condom for 21.6% of the contraceptives methods known by the students, withdrawal method accounted for 13.7% of the contraceptives methods known by the students, oral contraception pill accounted for 10.8% of the contraceptives methods known by the students, and abstinence accounted for 23.56% of the contraceptives methods known by the students. Furthermore, male condom accounted for 81.7% of the current contraceptive methods used by the students, female condom for 17.4% of the current contraceptive methods used by the students, withdrawal method accounted for 25.5% of the current contraceptive methods used by the students, emergency contraception accounted for 8.9% of the current contraceptive methods used by the students, oral contraception accounted for 14.7% of the current contraceptive methods used by the students, and abstinence accounted for 56.1% of the current contraceptive methods used by the students. Healthcare facilities appear to be 70.7% of the source of acquisition of contraceptives by the students, shops represent 33.7% of the sources of acquisition of contraceptives by the students. 89.2% of the students have looked for information concerning contraceptives methods, and 10.8% haven't looked for information concerning contraceptives methods. Family and friends were 27.47% of the student's sources of information about contraceptives methods; books and journals were 19.82% of the student's sources of information about contraceptives methods; family planning services were 0.16% of the student's sources of information about contraceptives methods, social media was 22.95% of the student's sources of information about contraceptives methods.

4.3. Findings for Research Question 2

Table 5.
Contraceptive Method Use According to Demographic Characteristics

| Variables | Contraceptive use n (%) | | x ² | p* |
|-----------------------|-------------------------|--------------|----------------|-------|
| | No n (%) | Yes n (%) | | |
| Religion | | | | |
| Catholics | 26 (12.1%) | 188 (87.9%) | 5.864 | 0.118 |
| Protestants | 5 (6.5%) | 72 (93.5%) | | |
| Muslim | 5 (20.8%) | 19 (79.2%) | | |
| Others | 4 (6.3%) | 60 (93.7%) | | |
| Marital Status | | | | |
| Single | 22 (10.6%) | 188 (89.4%) | 392.377 | 0.000 |
| Married | 3 (25.0%) | 9 (75.0%) | | |
| Fiancé | 3 (20.0%) | 12 (80%) | | |
| Engaged | 5 (4.5%) | 106 (95.5%) | | |
| Others | 7 (21.2%) | 26 (78.8%) | | |
| Sex | | | | |
| Male | 25 (11.2%) | 199 (88.8%) | 0.211 | 0.646 |
| Female | 14 (9.7%) | 131 (90.3%) | | |
| Age | | | | |
| 15-18 | 12 (20%) | 48 (80%) | 10.461 | 0.005 |
| 19-22 | 10 (5.7%) | 164 (94.3%) | | |
| 23-25 | 18 (12.4%) | 127 (87.6%) | | |

* Pearson Chi-Square test result

In the table 5 below it can be observed that there was no significant difference in the status of information searches about contraceptives according to religion ($p > 0.05$), to gender ($p > 0.05$). There was a significance difference when taking age ($p < 0.05$) and marital status ($p < 0.05$) into account; students have more searched of information about contraceptives methods no matter the marital status and the age range.

4.4. Findings for research Question 3

Table 6.
Normality test of the Contraceptive Attitude Scale (CAS)

| | | Kolmogorov-Smirnov ^a | | |
|------------------------|----------|---------------------------------|-----|------|
| | | Statistic | Df | Sig. |
| Contraceptive Score | Attitude | .048 | 379 | .033 |

a. Lilliefors Significance Correction

Table 7.
The level of The Contraceptive Attitude Scale Point (CAS)

| N | % | Mean | Std. Deviation | Median | Int. Range |
|-----|-----|-------|----------------|--------|------------|
| 379 | 100 | 3.409 | 0.514 | 3.406 | 0.72 |

Table 6 shows that the contraceptive attitude score (CAS) variable was not normally distributed (Kolmogorov-Smirnov, $p = 0.033$). In Table 7, the mean CAS score is 3.409 (Std Deviation = 0.514), and the Median is 3.406 (Int. Range = 0.72). A CAS score of 5 of the final result indicated a very positive attitude.

4.5. Findings for Research Question 4

Table 8.
Students Attitude Towards Contraceptive Methods According to the Gender

| Sex | | Female | | t | p* |
|-------|----------------|--------|----------------|--------|-------|
| Male | | Mean | Std. Deviation | | |
| Mean | Std. Deviation | Mean | Std. Deviation | | |
| 3.372 | 0.495 | 3.460 | 0.538 | -1.610 | 0.108 |

* Student's t Test Result

The attitude of the students toward contraceptive methods with regard to their demographic characteristic was also assessed. Controlling for gender, the CAS variable

was normally distributed for both male (n= 224; p = 0.200) and female (n = 245; p = 0.200) students. The student's t Test showed that male and female students are not significantly different in their attitude toward contraceptives methods (p= 0.108). Regarding their average score of attitudes towards contraceptives, it can be observed that both sexes have a weak positive attitude towards contraceptive methods with respectively a mean score of 3.372, and 3.460 for male and female (Table 8).

Table 9.
Students Attitude Towards Contraceptive Methods According to the Religion

| Religions | | | | | | | | | |
|------------------|----------------|-------------|----------------|--------|----------------|--------|----------------|-------|-------|
| Catholics | | Protestants | | Muslim | | Others | | F* | p |
| Mean | Std. Deviation | Mean | Std. Deviation | Mean | Std. Deviation | Mean | Std. Deviation | | |
| 3.434 | 0.492 | 3.461 | 0.495 | 3.154 | 0.389 | 3.359 | 0.618 | 2.620 | 0.051 |

*The one way Annova test result

Taking religions into account. The CAS variable was normally distributed for Catholics (n= 214; p = 0.087), Protestants (n= 77; p = 0.200), Muslims (n= 24; Shapiro test, p=0.75) students. Catholic, protestant, Muslim students are not significant difference in their attitude toward contraceptives methods (p=0.051). As it was observed with gender, all religions had a weak positive attitude towards contraceptive methods according to their average score, Catholic = 3.434, Muslim = 3.154, Protestant = 3.461, others = 3.359 (Table 9).

Table 10.
Students Attitude Towards Contraceptive Methods According to the Age Group

| Age Group | | | | | | | |
|------------------|------------|---------|------------|---------|----------------|----|-------|
| [15-18] | | [19-22] | | [23-25] | | Df | p* |
| Median | Int. Range | Median | Int. Range | Mean | Std. Deviation | | |
| 3.203 | 0.71 | 3.406 | 0.73 | 3.465 | 0.491 | 2 | 0.044 |

* Kruskal Wallis Test result

Controlling for age, the CAS variable was normally distributed for age group [15-18] (n= 60; p = 0.200), age group [23-25] (n= 145;p = 0.200), and wasn't normally distributed for age group [19-22] (n=174; p = 0.037). There is at least one significant difference in the student attitude toward contraceptive according to their age group (p = 0.044) (Table 10).

Table 11.

Students Attitude Towards Contraceptive Methods According to the Age Group.

| Age | | | | | |
|------------|----------------|---------|----------------|--------|-------|
| [15-18] | | [19-22] | | | |
| Median | Int. Range | Median | Int. Range | z^* | P |
| 3.203 | 0.71 | 3.406 | 0.73 | -1.977 | 0.048 |
| [15-18] | | [23-25] | | | |
| Mean | Std. Deviation | Mean | Std. Deviation | z^* | P |
| 3.253 | 0.486 | 3.465 | 0.491 | -2.543 | 0.11 |
| [19-22] | | [23-25] | | | |
| Mean | Std. Deviation | Mean | Std. Deviation | z^* | P |
| 3.253 | 0.486 | 3.465 | 0.491 | -0.703 | 0.482 |

There are the different between the age group [15-18] and [19-22] (p = 0.048), and between the age group [15-18] and [23-25] (p = 0.011) (Table 11).

Table 12.

Students Attitude Towards Contraceptive Methods According to the Sexual Activity

| Sexual Activity | | | | | |
|------------------------|------------|--------|---------------------|--------|-------|
| Sexually active | | | Not sexually active | | |
| Median | Int. range | Median | Int. range | Z | p^* |
| 3.531 | 0.840 | 3.328 | 0.670 | -1.864 | 0.062 |

*Mann-Whitney Test Result

With regards to sexual activity status, the CAS variable wasn't normally distributed for the group of students sexually active (n= 187; p= 0.037), and normally

distributed for the group of students not sexually active ($n= 82$; $p=0.192$). There is no significant difference ($p = 0.062$) between students sexually active and students not sexually active regarding their attitude toward contraceptives methods; both groups have a weak positive attitude toward contraceptive use with a median score of 3.531 for students sexually active, and 3.328 for students not sexually active (Table 12).

Table 13.

Students Attitude Towards Contraceptive Methods According to the Marital Status

| Marital Status | | | | | | | | | | | |
|----------------|------------|---------|------------|--------|------------|---------|------------|--------|------------|----|-------|
| Single | | Married | | Fiancé | | Engaged | | Others | | df | p |
| Median | Int. Range | Median | Int. Range | Median | Int. Range | Median | Int. Range | Median | Int. Range | | |
| 3.406 | 0.75 | 3.687 | 0.73 | 3.218 | 0.72 | 3.437 | 0.72 | 3.093 | 0.69 | 3 | 0.052 |

*Kruskal Wallis Test Result

Concerning the marital status, the CAS variable was normally distributed for all the groups ($p > 0.05$). There is no significance difference in the attitude of students toward contraceptives method, all the group had a weak positive attitude ($p=0.052$) (Table 13).

CHAPTER V

Discussion

This chapter presents the discussion of research findings in comparison to the studies in the literature.

In this study, almost half of students are 19-22 years old, 59.1% of them were male, almost half of them were sexually active and 54.7% of them were single (Table 3). Early sexual intercourse is associated with risk-taking behaviours and increased risk of STIs (Hansen et al., 2109). Effective contraceptive methods use will protect them from risky sexual behaviours, unintended pregnancy, adolescent pregnancy and unsafe abortion. Therefore, it is very important to determine knowledge, attitudes and practices of contraceptive methods among students.

5.1. Discussion Research Finding Question 1 and 2

The majority of these students (almost half of them) just know one method of contraceptive, just few of them know more than seven methods of contraception, and none of them knows more than 11 methods of contraceptives (Table 4). In this study, it was found that male condom is the most commonly known method of contraception among students, followed by abstinence, Diaphragm, birth control patch and spermicide are the less practiced contraceptive methods (Table 4). These results correlate with those previously obtained by (Kajić et al., 2015) where male condom was the most used method of contraception, and diaphragm the less used contraceptive by medical student of the School of Medicine of University of Mostar in Croatia; and with those obtained by (Agyemang et al., 2019) where about 33% of sexually active teenage girls in Atwima Kwanwoma District, Ashanti region, Ghana, report using a condom as their primary method of birth control. In a study conducted by Thao et al. (2020), most of college students reported not using condom (Thao, Perez, Thao, & Vue, 2020). The higher frequency of male condom use could be due to the fact that it is easily accessible in the country.

Healthcare facilities appear to be 65.52% of the source of acquisition of contraceptives by the students in this study (Table 4). The sources of knowledge on contraceptives methods are mostly family and friends (27.47%) and social media (22.95%) (Table 4). It is thought that all of the students do not receive safe information from social media and friends they may have misbeliefs and information about the

methods. In a study of Alege et al., 2016, which involved only women aged 15-49 years in Uganda, almost half of all women have said they had used some kind of contraception in the past month. Additionally, the authors emphasised that government and commercial health institutions were the primary suppliers of family planning techniques, whereas clinic personnel, friends, and the media were the most trusted sources of contraceptive information. Both current users and potential new users of FP techniques expressed a strong desire for and plan to employ shorter-term approaches (such as injectables). Although injectables were the preferred form of birth control for both current users and those who had never used contraception before, both current users and those who had never used preferred and intended to use long-term methods (such as implants) second (Alege et al., 2016). This study joins ours and sustain the fact that most people trust their clinic providers, their friends, and the media for contraception information (Table 4). Hence, it is important to communicate information about contraceptive devices and services, especially to non-users, through a wider variety of communication channels, including informal mechanisms (such as friends) and the media, rather than relying solely on formal, clinically based procedures. It is not unexpected that government health institutions were the most common source of family planning techniques in the study by Alege et al., 2016, as they often offer services without charging a fee, thereby removing one of the primary barriers that prevent people from accessing FP services (Meskele & Mekonnen, 2014). Our results also reveal that private health facilities (Table 3) are an excellent source of FP techniques, therefore it's important to provide them with materials to ensure that youth who choose to get their supplies from private facilities don't go without. The finding that private facilities performed worse than public ones further shows that robust public-private partnerships are required to promote access to and usage of FP techniques among children of reproductive age in the district of Bonaberi, Cameroon.

5.2. Discussion Research Findings Question 3 and 4

It was found that students take average 3.409 points from total score of CAS (Table 6). The result indicated a positive attitude about contraceptive methods in this study. The positive attitude of the youth towards the methods is reflected in the use of effective methods. Similar positive attitude was found in the study of Ritter et al., that involved young peoples aged 14-24 years old in New South Wales, Australia; The average CAS score was 3.9 (Ritter et al., 2015). Furthermore, in this study, it was determined no statistically significant differences between gender, religion, sexual activity, contraceptive attitude point ($p > 0.05$) (Table 8-13); meaning that these students have equal opinion regarding the role of contraceptives methods. These results are in line with those of two previous studies: (Speizer et al., 2001) which surveyed adults aged 30 and up in Togo and found that women and men hold similar views on sexual behaviour; and (Kajić et al., 2015) which found no statistically significant differences between the sexes when comparing students' views on contraception. However, in a study looking at the factors influencing contraceptive use among Hmong college students in California (Thao et al., 2020), the authors found that female students were much more likely to have a favourable view of contraception ($p = 0.001$) than their male counterparts (122.08). (112.58). In addition, the authors highlighted the stark contrast in participants' perspectives on contraception between those with and without a strong desire to start a family. Participants who indicated a high desire for more children also had a significantly less favourable attitude towards contraception ($p = 0.0001$), indicating that desire for children is a statistically relevant variable. Three children (15%), two children (21%) and four children (35%) are the top three responses to the question of how many children one would want. At 10%, having no children was tied with having more than four children as the least desired number of offspring. Therefore, the desire of having children is a potential variable that can be consider in future study similar to this one implemented in Cameroon. All of these comments brought to light the necessity of an educational setting in both public and private schools in Cameroon that provides students with information on various methods of birth control in order to increase their levels of knowledge, as well as their attitudes and behaviours. Knowledge has the potential to play a significant part in the effort to minimise the prevalence of sexually transmitted diseases, unintended pregnancies, and abortions carried out voluntarily inside the country.

Guzzo & Hayford, (2017) highlighted that in models adjusted for a range of socioeconomic, demographic, and life course factors, positive attitudes toward contraception in adolescence raised the likelihood of using more sophisticated techniques rather than a less successful method or no method of contraception in adulthood. In addition, the findings indicated that more precise condom knowledge and more correct reproductive knowledge increased the odds. Those adolescents who had more positive views about contraception as teenagers were also more likely to use contraception on a regular basis as adults (Guzzo & Hayford, 2017). In this study, it was found that only age and marital status had a positive effect on the use of contraceptive methods ($p < 0.05$, Table 5). There was a statistical significant difference in contraceptive attitude ($P < 0.05$) between students aged [15-18] years compared to those aged [19-22] years (Table 5). The fact that single students use more contraception used (Table 5) that they are more aware of unwanted pregnancies.

The majority of research on the attitude toward contraceptives method were done targeting specific methods contrary than all the methods in general as in this study. In the research carried out by Bardaweel et al., 2015, Jordanian women demonstrated a healthy pattern of oral contraceptive (OC) utilisation. The vast majority of these women were utilising OCs for the purpose of birth control, and they consulted with and received prescriptions from medical professionals. It is interesting to note that the researchers did not find any significant variations in the pattern of using OCs according to demographic characteristics such as age, education, result, etc. In addition, it was shown that Jordanian women have optimistic sentiments regarding the effectiveness and safety of OCs (Bardaweel et al., 2015). These results correlate the general positive attitude observed in our research. Furthermore, in an investigation performed on adolescent of Rural Mhondoro-Ngezi District, Zimbabwe, Moyo and Rusinga, 2017 found that many teenagers have a negative attitude regarding oral contraceptives (birth control tablets). In addition, 78 percent of respondents said that family planning leads to children being born with birth defects. In addition to this, 72 percent of respondents held the belief that female contraceptives are responsible for causing menstruation interruptions (Moyo & Rusinga, 2017). More ever, Mubashar et al, 2016 pointed out that 79.6% of women aged 18-45 years had a positive attitude toward contraceptive in Aseer region of Saudi Arabia (Mubashar et al., 2016). More specifically, Kgosiemang et Blitz, 2018, after analysing the degree of knowledge, attitudes, and behaviours of female students at the University of Botswana with relation to emergency contraception, found that 55% of the students who participated in the study had negative sentiments regarding the use of it. Students

from urban regions exhibited significantly higher levels of knowledge than those from rural areas ($p = 0.020$). A more positive attitude towards the use of emergency contraception was connected with a greater level of awareness about the method ($p 0.001$) (Kgosiemang & Blitz, 2018). The results of this study point that place of living could be a potential variable in the assessment of attitude of students toward contraceptive in a study that will be implemented in Cameroon in general.

CHAPTER VI

6. Conclusion and Recommendations

6.1. Conclusion

- It was found that almost half (45.91%) of students are 19-22 years old, 59.1% of them were male, 56.5% of them were Catholic, almost half (49.3%) of them were sexually active, and the majority (54.7%) were single.
- Male condom (36.90) is the most commonly known method of contraception among students, followed by abstinence (23.56%) and female condom (10.97%). Furthermore, male condom (36.90%) was the most currently used method of contraception among students, followed by abstinence (25.35%), and withdrawal (11.54%).
- It was found that healthcare facilities appear to be 65.52% of the source of acquisition of contraceptives by the students. It was determined that the most of students (89.2%) took information concerning contraceptive methods. The sources of knowledge on contraceptives methods are mostly family and friends (27.47%) and social media (22.95%).
- It is seen that students take average 3.409 points from total score of CAS. The result indicated a positive attitude about contraceptive methods.
- There were no statistically significant differences between gender, religion, sexual activity and contraceptive attitude. There was a statistically significant differences between marital status, age and contraceptive attitude.

6.2. Recommendations

6.2.1. Recommendations According to Findings

- It is suggested that Cameroonian health clinics should provide free contraception and health education, family planning counselling to young.
- It is suggested that family planning counselling services should improve in public and private high schools in Cameroon.
- In order to increase the use of effective contraceptive methods, it is recommended to have school health nurses in schools and to provide family planning counselling services.

6.2.2. Recommendations for Further Research

- It is suggested that research should be conducted on exploring on risky sexual behaviors, unintended pregnancy, unsafe abortion among students in Cameroon.
- It is suggested that it should be conducted qualitative studies evaluating contraceptive attitudes.

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Additional Files

Attachment A. Student Information Form and Consent Form

INFORMED CONSENT FORM FOR ADULTS (FOR THE PATIENTS / PARTICIPANTS)

You are invited to participate in a research study conducted by **Charlotte Alviane GNIMPIEBA KASSEP** from the NEAR EAST UNIVERSITY department of Nursing. I want to assess the knowledge, attitudes and practices of contraceptive methods among students aged between 15 to 25 years in public and private schools in the district of Bonaberi, Douala, Cameroon. You were selected as a possible participant in this study because you speak and understand English, you are a student aged between 15-25 years, and you are sexually active. If you decide to participate, you will have to complete a questionnaire consisting of 7 questions related to your personal information, 4 questions related to your knowledge and practices of contraceptive methods, and 32 questions related to your attitude towards contraceptives. The filling will take you between 10-20 min, and you might feel uncomfortable with some of the questions; if this is the case you can decide not to answer the question(s) or meet with us personally. However, I cannot guarantee that you personally will receive any benefits from this research. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. You will not have to put your name or any contact information so that the information you furnish will be anonymous. Your participation is voluntary. Your decision whether or not to participate will not affect your relationship with your college or college-staffs. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time without penalty. If you have any questions about the study, please feel free to contact **Charlotte Alviane GNIMPIEBA KASSEP, Tel: 00237 693338377/653201564; Email: gnikachal@yahoo.com** or **Assist. Prof. Dr. Dilek SARPKAYA GÜDER, Email: dilek.sarpkaya@neu.edu.tr** . If you have questions regarding your rights as a research subject, please contact the NEAR EAST INSTITUTIONAL REVIEW BOARD. You will be offered a copy of this form to keep.

Your signature indicates that you have read and understand the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation without penalty, that you will receive a copy of this form, and that you are not waiving any legal claims.

Interviewer:

Name, Surname: **Charlotte Alviane GNIMPIEBA KASSEP**

Address: Bonaberi No 5, **Douala, Cameroon.**

Phone: **00237 693338377/653201564**

Signature:

Below are several statements which we are interested in knowing your opinion about each. Keep in mind that there are no right or wrong answers. Also remember that we are interested in your personal opinion. Therefore, we want to know how you feel about these statements and not how you think your family or friends might feel about these statements.

A- Information form

Please for each question below chose the answer that correspond to you

1- Age:

- a. 15 – 18 years old b. 19 – 21 years old c. 22 – 24 years old d. \geq 25 years old

2- Gender:

- a. Male b. Female c. Other

3- Grade/year:

- a. From 5 b. Lower sixth c. Upper sixth

4- Religion:

- a. Catholic b. Protestant c. Muslim d. Other

5- What is your current relationship status?

- a. Single b. Committed relationship c. Engaged d. Married e. Other

6- Sexual activity

- a. Sexually active b. Not sexually active c. No response

Attachment B- Knowledge and Practices of Contraceptive Methods

Please for each question below chose the answer that correspond to you

1- Please, chose contraceptive methods you know. (You can choose multiple options)

- a. Male condoms b. Female condoms c. Oral contraceptives (birth control pills)
 d. IUD (Intrauterine device) e. Birth control patch f. Vaginal ring g. Spermicides
 h. Diaphragm i. Withdrawal method j. Abstinence k. Every 3 month-hormone shot
 l. Emergency contraception

2- Please, Chose the contraceptive methods you used until this time (you can choose multiple options)

- a. Male condoms, b. Female condoms, c. Oral contraceptives (birth control pills),
 d. IUD (Intrauterine device), e. Birth control patch, f. Vaginal ring,
 g. Spermicides h. Diaphragm, i. Withdrawal method, j. Abstinence, k. Every 3 month-hormone shot
 l. Emergency contraception

3- Please, Chose the current contraceptive methods you use

- a. Male condoms, b. Female condoms, c. Oral contraceptives (birth control pills)
 d. IUD (Intrauterine device), e. Birth control patch, f. Vaginal ring
 g. Spermicides h. Diaphragm, i. Withdrawal method, j. Abstinence,
 k. Every 3 month-hormone shot l. Emergency contraception

4- How do you get access to your contraceptive methods

- a. Health care facilities (hospitals, pharmacies, etc.), b. Shops c. Others

5. Have you get information about contraceptive methods?

- a. Yes b. No

6. Where did you get this information from?

- a. Family, friends b. Books, journal etc. c. Family Planing Services
 d. Social Media e. Others

Attachment C- Contraceptive Attitude Scale

Using the scale below, please indicate your level of agreement or disagreement with each statement.

Scale: 1 = Strongly disagree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree

a.) I believe that it is wrong to use contraceptives.

1-----2-----3-----4-----5

b.) Contraceptives reduce the sex drive.

1-----2-----3-----4-----5

c.) Using contraceptives is much more desirable than having an abortion.

1-----2-----3-----4-----5

d.) Males who use contraceptives seem less masculine than males who do not.

1-----2-----3-----4-----5

e.) I encourage my friends to use contraceptives.

1-----2-----3-----4-----5

f.) I would not become sexually involved with a person who did not accept contraceptive responsibility.

1-----2-----3-----4-----5

g.) Teenagers should not need permission from their parents to get contraceptives.

1-----2-----3-----4-----5

h.) Contraceptives are not really necessary unless a couple has engaged in intercourse more than once.

1-----2-----3-----4-----5

i.) Contraceptives make sex seem less romantic.

1-----2-----3-----4-----5

j.) Females who use contraceptives are promiscuous.

1-----2-----3-----4-----5

k.) I would not have intercourse if no contraceptive method was available.

1-----2-----3-----4-----5

l.) I do not believe that contraceptives actually prevent pregnancy.

1-----2-----3-----4-----5

m.) Using contraceptives is a way of showing that you care about your partner.

1-----2-----3-----4-----5

n.) I do not talk about contraception with my friends.

1-----2-----3-----4-----5

o.) I would feel embarrassed discussing contraception with my friends.

1-----2-----3-----4-----5

p.) One should use contraceptives regardless of how long one has known his/her sexual partner.

1-----2-----3-----4-----5

q.) Contraceptives are difficult to obtain.

1-----2-----3-----4-----5

r.) Contraceptives can actually make intercourse seem more pleasurable.

1-----2-----3-----4-----5

s.) I feel that contraception is solely my partner's responsibility.

1-----2-----3-----4-----5

t.) I feel more relaxed during intercourse if a contraceptive method is used.

1-----2-----3-----4-----5

u.) I prefer to use contraceptives during intercourse.,

1-----2-----3-----4-----5

v.) In the future, I plan to use contraceptives any time I have intercourse.

1-----2-----3-----4-----5

w.) I would practice contraception even if my partner did not want me to.

1-----2-----3-----4-----5

x.) It is no trouble to use contraceptives.

1-----2-----3-----4-----5

y.) Using contraceptives makes a relationship seem too permanent.

1-----2-----3-----4-----5

z.) Sex is not fun if a contraceptive is used.

1-----2-----3-----4-----5

a'.) Contraceptives are worth using, even if the monetary cost is high.

1-----2-----3-----4-----5

b'.) Contraceptives encourage promiscuity.

1-----2-----3-----4-----5

c'.) Couples should talk about contraception before having intercourse.

1-----2-----3-----4-----5

d'.) If I or my partner experienced negative side effects from a contraceptive method, we would use a different method.

1-----2-----3-----4-----5


e'.) Contraceptives make intercourse seem too planned.

1-----2-----3-----4-----5

f.) I feel better about myself when I use contraceptives.

1-----2-----3-----4-----5

Attachment D. Approval Form of Ethics Committee Board



YAKIN DOĞU ÜNİVERSİTESİ
BİLİMSEL ARAŞTIRMALAR ETİK KURULU

ARAŞTIRMA PROJESİ DEĞERLENDİRME RAPORU

Toplantı Tarihi :26.05.2022
 Toplantı No :2022/103
 Proje No :1562

Yakın Doğu Üniversitesi Hemşirelik Fakültesi öğretim üyelerinden Yrd. Doç. Dr. Dilek Sarpkaya Güder'in sorumlu araştırmacısı olduğu, YDU/2022/103-1562 proje numaralı ve "Knowledge, Attitudes and Practices of Contraceptive Methods Among Students in Public and Private High Schools in Cameroon" başlıklı proje önerisi kurumumuzca değerlendirilmiş olup, etik olarak uygun bulunmuştur.

L. Çalı

Prof. Dr. Şanda Çalı
 Yakın Doğu Üniversitesi
 Bilimsel Araştırmalar Etik Kurulu Başkanı

| Kurul Üyesi | Toplantıya Katılım | Karar |
|------------------------------|--------------------------|-----------------|
| | Katıldı(✓)/ Katılmadı(X) | Onay(✓)/ Ret(X) |
| Prof. Dr. Tamer Yılmaz | ✓ | ✓ |
| Prof. Dr. Şahan Saygı | ✓ | ✓ |
| Prof. Dr. Nurhan Bayraktar | ✓ | ✓ |
| Prof. Dr. Mehmet Özmenoğlu | X | X |
| Prof. Dr. İlker Etikan | ✓ | ✓ |
| Doç. Dr. Mehtap Tınazlı | X | X |
| Doç. Dr. Nilüfer Galip Çelik | ✓ | ✓ |
| Doç. Dr. Emil Mammadov | ✓ | ✓ |
| Doç. Dr. Ali Cenk Özyay | X | X |

<https://etikkurul.neu.edu.tr/>

Attachment D. Turnitin Rapor

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Kapat

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Attachment E: Government Special Organisation

REPUBLIQUE DU CAMEROUN
 Paix - Travail - Patrie
 REGION DU LITTORAL
 DEPARTEMENT DU WOURI
 ARRONDISSEMENT DE DOUALA IV^{ème}
 SOUS-PREFECTURE DE DOUALA IV^{ème}
 SECRETARIAT PARTICULIER
 N° 059/2022/SA/C19.04/PS



REPUBLIC OF CAMEROON
 Peace - Work - Fatherland
 LITTORAL REGION
 WOURI DIVISION
 DOUALA IVth SUB DIVISION
 SUB DIVISIONAL OFFICE, DOUALA IVth
 PRIVATE SECRETARIAT

SPECIAL AUTHORIZATION

The Divisional Officer of Douala IV undersigned, authorizes Miss GNIMPIEBA KASSEP CHARLOTTE ALVIANE, phone number 693 33 83 77, a master's in nursing (obstetrics and gynecology) in Near East University, to carry out health research under the theme: ***“Knowledge, attitudes and practices of contraceptive methods among students in public and private high schools in Bonaberi, Cameroon”***. This study will be conducted in 5 privates and publics schools in the Sub-Division of Douala IV from May to July 2022.

In witness whereof, this authorization is established and delivered to serve and assert what is right.

12 7 AVR 2022

Copys :
 - The person concerned.

The Divisional Officer,

LES SOUS-PREFET
 DOUALA IV^{ème}



Davida Jisa
 Administrateur Civil Principal

