

# Family Planning Laboratory Review of Factors Affecting the Choice of Contraceptive Methods in Three Teenagers' Populations in Thrace, Greece

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## Abstract

Contraception encompasses the concept of avoiding a pregnancy, and is aimed at women of reproductive age who, although are sexually active, do not want to achieve any pregnancy at their option fertility preservation and family planning. It should be underlined that no method of contraception is 100% guaranteed because its success depends on many factors such as patient's compliance to gynecologists instructions, woman's age, the advantages and disadvantages of each method, the frequency of sexual intercourse and of course the type of contraception. Proper use of each method requires knowledge. Contraception is not enough, but it should be done properly to avoid unwanted pregnancy. Fortunately, contraceptive methods nowadays are many, simple to implement and extremely effective. In a society that is constantly evolving as technology advances, there is a profound humanitarian crisis at all levels, where human values and even human lives are violated. Family Planning protects and promotes the rights of both the woman and her unborn child, an unborn human being inside the womb. In this day and age that the number of abortions increases disproportionately to the number of births every person and especially teenage women, as the weaker sex in many subpopulation groups, have the right to be informed, protected and supported by the family planning centers.

**Keywords:** Religion, Socioeconomic level, Teenagers, Contraceptive methods

## Introduction

Contraception was applied for decades on an empirical basis but the discovery of contraceptive pills has brought a real revolution on this field because with the use of scientific techniques, we managed to prevent ovulation which is the cornerstone of reproduction. [1,2]. Since the AIDS outbreak, the use of contraceptive pills has decreased due to the fact that they do not offer any protection against sexually transmitted diseases [3,4]. On the other hand, barrier contraception which offers protection against STDs prevents direct contact. Birth control pill continues to be a unique scientific achievement and at the same time an invaluable contribution to every woman, which if combined with intrauterine devices creates a protective shield to unwanted pregnancy [3-5]. The clinical application of oral contraception dates back to the 1960s, but its history goes back to the early 20<sup>th</sup>

century, when experimental data showed that the ovaries were organs with hormonal activity [3-5].

Adolescence is a period during which many physical, emotional and psychological changes occur in a relatively short period of time. In this context, the sexuality of young girls is developed, with the young woman being particularly vulnerable to a possible unwanted pregnancy and STDs. In fact, the ever-decreasing age of onset of sexual relationships that has been observed worldwide in recent years, urges the need for proper sexual education and information of adolescents about their contraceptive choices [6-8].

Sexual liberation of women nowadays may be considered undoubted, access to information is extremely easy, but there is still a lot of misunderstandings about contraceptive methods today. Despite the fact that

statistics show abortion rates to decline, the reality is that they still often use ineffective contraception methods. The purpose of contraception is to prevent the sperm from fertilizing an oocyte or to prevent the implantation of the fertilized oocyte into the uterus. There are many methods of contraception. All need education [9-12].

The ideal method of contraception should not only prevent an unwanted pregnancy but it has also to protect from sexually transmitted diseases.

## Materials and Methods

The purpose of this study was to collect data (evidence) and to draw useful conclusions regarding the relevance of family, social, religious environment to the selection of the contraceptive method from three adolescent group populations: Orthodox Christians women, Muslim women living and working in Thrace, and Muslim women born in Thrace after a few years of immigration in Germany.

At the same time, however, this study was not limited only to bibliographic data, but expanded its field of study to include in its conclusions data obtained from anonymous questionnaires provided at the Family Planning Center of the Democritus University of Thrace.

Large-scale online databases such as MEDLINE, PubMed, EMBASE and the Cochrane Library were the research tool to find studies between 1989 until November 2019, using the following Keywords: contraception, "teenagers", "choice of contraception method", social cultural level, religion, Muslim, Christian orthodox. This literature research resulted in a number of studies addressing the association between contraceptive method choice and socio-religious factors. Related articles that were material for this study were subsequently identified using PubMed.

### Puberty

Young people, and especially young teens, are the most difficult group for satisfactory, safe and effective contraception. The use of contraception in adolescence remains limited. The reason is not only the well-known peculiar psychology and habits of young people, but also due to the fact that no contraceptive method to date, despite enormous advances in contraceptive technology, is satisfactory at the individual level. There are 1.2 billion teenagers worldwide today [10-12].

Understanding and approaching their sexual and reproductive needs is essential. Unfortunately, many adolescents do not have the proper information and health services are not available to them. Half of teenage pregnancies between the ages of 15 and 19 are undesirable, with most of them resulting in induced

abortions often under unsafe conditions. Unwanted pregnancies in adolescence cause significant financial, social and personal burden in the developed societies despite the fact that we already have reliable and effective contraceptive methods.

Pregnancy is not the only risk of teenage sexual activity. Sexually Transmitted Diseases (STDs) and their consequences are probably the most important problem today [13-16]. The sexual health of adolescents is based on three important parameters.

1. Recognition of sexual rights.
2. Sexual education and counseling.
3. Providing high quality services with confidentiality.

All of these parameters must be evaluated at the same time [13-16]. A holistic approach to contraceptive care involves the overall assessment of adolescents' reproductive and sexual needs. Informing adolescent women in an understandable language about the potential risks, benefits and uncertainties contributes significantly to the correct choice of the method of contraceptive type.

Sexual behavior is not significantly different in developed countries with respect to the age of first sexual intercourse at the age of 17. Also 15% of adolescent women were sexually active by the age of 15, 60% by the age of 18 and 80% by the age of 20 [13-16]. However, the incidence of unwanted pregnancies and abortions varies widely, indicating significant differences between the types of contraceptive methods used. Choosing the right method of contraception requires knowledge of the different methods and depends on the individual desire to receive contraception [13-16].

A thorough understanding and the proper application of sexual education facilitates and improves significantly the use of contraception. A typical example is Finland where the combination of the implementation of sex education in schools with the provision of high-quality health care has contributed remarkably to the reduction of unwanted pregnancies and abortions. On the other hand, the cessation of the programs mentioned before has resulted to an increase in the rate of induced abortions.

The methods of contraception for adolescents are the same like the ones for adult women, i.e. condoms, interrupted intercourse (coitus interruptus), oral contraceptives, mini-pill, intrauterine devices, vaginal rings or diaphragms, spermicides, contraceptive injections, emergency contraception after sexual intercourse. The advantages, disadvantages and the efficacy of each method are clear to everyone. Oral

contraceptives and condoms are the main contraceptive choice for the majority of teenagers [18-20].

Administration is safe if ovulation has occurred and contraceptive testing has been performed. Conformity with the chosen contraceptive method is a very important factor that affects the success of contraception at this sensitive age. The increased use of contraceptive methods with periodic intake, such as medroxyprogesterone and levonorgestrel, has been associated to a decrease in the number of unwanted pregnancies in adolescence [18-20].

These new methods of contraception for adolescents are not more efficient and safer than the conventional methods, but due to their easier use, they facilitate adolescents' compliance to them. The use of IUDs (Intrauterine Devices) is the most popular method of contraception in Europe and the USA. About 23% of the American women aged 15-20 choose this method, this percentage is almost equal to those who select the female sterilization [18-20].

### Choice of contraceptive method

- In general, contraceptive methods can be categorized according to their mechanism of action into four broad categories [20-22].
- Non-invasive methods (e.g. periodic abstinence, coitus interruptus and Lactational Amenorrhea Method)
- Barrier methods (male condom, cervical cap, etc.)
- Hormonal methods (oral contraceptive pill, vaginal ring, emergency contraception etc.)
- Other methods (intrauterine device).

In Greece, the most commonly used contraceptive method by adolescents is coitus interruptus, followed by the male condom, while contraceptive pill use rates reach just 5%, compared to the US, where this percentage reaches 45% [5].

At the same time, other methods widely used in other countries, such as transcutaneous patches contraceptive injections (DMPA), vaginal ring, vaginal diaphragm and cervical cap, have limited use in our country [23,24].

The use of coitus interruptus, as already mentioned, holds the first place among adolescents in Greece at a rate of nearly 40% [5,6]. In fact, the rate of unwanted pregnancies when using this method reaches 20% per year and at the same time it does not offer any protection from STDs [25,26].

The male condom, which is the second most popular method used by adolescents in our country, has the advantage of protecting against STDs and it is easily purchased by adolescents without medical prescription. Its failure rate, when used ideally, is 2%, while in typical use it reaches 18%, which may be even higher for adolescents.

In terms of hormonal contraceptive methods, the oral contraceptive pill is the third most common used method of contraception worldwide, although its rates are very low in our country [26-29]. The rate of failure is only 0.1%, but the need for daily intake increases this rate up to 6-8% among adolescents. Although its main disadvantage is the lack of protection from STDs, it has the advantage of improving menstrual disorders, dysmenorrhea, acne, hirsutism, as well as reducing the risk of endometrial and ovarian cancer. However, there are hormonal methods that have been adapted to the lifestyle and needs of adolescents and women [26-29].

One of them is the vaginal ring (NuvaRing®), which contains the estrogen ethinylestradiol and progestogen etonogestrel. It is placed in the vagina for 3 weeks and removed for one week, during which the teenage girl has menstruation. It has the advantage of better compliance as it requires placement only once a month, teenagers are exposed to lower levels of estrogens and additionally they do not experience the systemic side effects that can be observed with the birth control pill and transcutaneous patch [26-29]. Special mention should be made to long-term reversible contraceptive methods and especially to the intrauterine devices. There are two types of intrauterine devices (IUD), which provide long-lasting contraception and are placed in the uterine cavity, suitable for teenagers who have already started their sexual life. The first contains copper, while the other one releases levonorgestrel. In fact, a smaller intrauterine device with levonorgestrel which is ideal for adolescents was recently released in the USA and it is expected also in Greece [26-29].

Their action is exerted by modifying sperm motility, while the intrauterine device, which secretes levonorgestrel, alters the endometrium thus preventing implantation. Their contraceptive action is due to a local aseptic inflammatory reaction, which causes the intrauterine device, as a foreign body to the uterus, preventing thus the fertilization. They are considered safe, with few contraindications to their use.

They do not increase the risk of pelvic inflammatory disease, as previously thought. Intrauterine devices are placed by gynecologists and remain in the uterine cavity for a long period of time (3-5 years). They are applied

simply and require medical examination. Nevertheless, there is an increased the risk of inflammation and ectopic pregnancies [30-32].

#### **Criteria for the use of contraceptive methods**

1. There is no restriction on using contraceptive methods
2. The benefits of using a contraceptive method outweigh theoretical or clinically proven risks.
3. The risks outweigh the benefits of using a contraceptive method
4. High risk rates

Natural methods include periodic abstinence, coitus interruptus, and lactational amenorrhea method

#### **Hormonal methods**

**Oral contraceptive pills (OCPs):** The pill is started on the first day of the menstrual cycle and is continued for 21 days followed by 7-day break. Recently, every day contraceptive pills formulations without any break have been introduced into market. The mechanism of action of OCPs is inhibition of implantation and ovulation, thickening of the cervical mucus and sperm motility disorders [30-32].

#### **Women's opinions about oral contraceptive pills are categorized as positive and negative**

##### **Positive views of women:**

- Positive impact on sex life credibility
- Easy to use / convenience
- Less bleeding
- Reducing blood loss results in increased iron stores in the body and thus reduces the chance of developing iron deficiency anemia
- Adjustment of the cycle
- Less painful periods
- Beneficial effect on the frequency of ectopic pregnancy
- Properly designed case-control studies estimate a 0.01% reduction in this risk

Epidemiological studies have shown that the use of OCPs for at least one year resulted in a 60% reduction in hospital admissions due to pelvic inflammatory disease.

This protective effect was independent of the estrogen-progesterone content of the "pill". A significant reduction in the incidence of fibroids was also observed in women who had received OCPs. This percentage has reached even 50% if they were receiving it for 7 years (OR: 0.5, 95% CI: 0.3-0.9). The decrease in estrogen levels resulted in a migraine exacerbation. Administration of estrogens at the time the "pill" is discontinued or continuous contraceptive administration prevents migraine exacerbations. OCPs have a positive impact on bronchial asthma and purpura [30-32].

**Negative views of women are:** Bleeding (spotting) between periods, especially when they contain low dose of estrogen, is a frequent cause of discontinuation. Its incidence is higher during the first 3 months, but if it persists, it is mainly due to the decidualization of the endometrium from the progesterone, which undergoes asynchronous apoptosis.

If spotting occurs before the end of the cycle, it is recommended to discontinue the treatment and to take a new tablet after a period of 7 days. If spotting is prolonged, it is treated by changing the formulation and administering another with a higher dose of estrogen or by exogenous administration of additional conjugated estrogens for a period of 7 days. Other reported side effects are: nausea headaches, mood changes, breast tenderness, weight gain [30-32].

#### **Amenorrhea**

The low estrogen content of the "pill" causes absent endometrial growth, whereas the action of progesterone exacerbates even more the endometrial atrophy, resulting in the absence of menstruation after the discontinuation of the contraceptive pill. It is evident that the atrophy of the endometrium is not permanent and it returns to its normal state after the discontinuation of the contraceptive pill. The biggest problem in these cases is patient's anxiety due to the lack of a normal cycle [30-32].

The incidence of amenorrhea after one year of contraceptive use is about 1%, and after 5 years is 5% [30-32].

#### **Teenagers family planning and contraception**

Millions of teenage women worldwide are sexually active and exposed to the risk of unwanted pregnancy and sexually transmitted diseases.

Sexual education of young girls supplies them with the knowledge they need to develop responsible relationships. At the same time, family planning informs and prepares

them for the responsible role of motherhood and leads to the development of sexual relationships with the opposite sex based on mutual respect and trust. The role of the state in advancing family planning is important to keep teens informed in a confidential and an affectionate environment [32-34].

Unfortunately, millions of teenagers get pregnant every year and are at great risk both for them and the fetus as well. Preeclampsia, eclampsia, dystocia, iron deficiency anemia and preterm labor are more common in pregnant women of this age group. That is why the safest method of avoiding pregnancy and sexually transmitted diseases in adolescence is by avoiding sexual relationships at this age. Unfortunately, however, the majority of teenagers do not prefer sexual abstinence. For them, the choice of male or female condom is the best protection against unwanted pregnancy and sexually transmitted diseases. In this case, family planning healthcare workers are invited to inform and train adolescents in the timely and proper use of condoms in order to achieve the desired effect [25,32-36].

In addition, teenage pregnancy has negative social impact as well. In particular, teenage pregnant women are forced to leave their home, school, and studies, get fired from their jobs, or work on low-wage jobs in order to survive [25,32-36].

In poor and developing countries it is common underage mothers to work as prostitutes in order to find shelter and food for their child and themselves [25,32-36].

For this reason, every state should ensure that all women, and especially teenagers, will have easy and free access to health services with family planning departments.

The term "contraceptive psychology" encompasses all of a person's actions related to contraception, that is, avoiding unwanted pregnancy and controlling fertility.

Behavior towards contraception, whether it is an individual or a social group, is a constituent of many factors and influences. There is no doubt that the character of the individual is of utmost importance, as well as the social environment. People's behavior towards contraception in countries with different socio-economic systems and cultures may be different. Although the decision to use or not a contraceptive method would be based on the risk-benefit ratio in fact mainly non-medical data play the most important role in that decision [36-38].

There is statistically documented correlation between the particular contraceptive method used and the experience of sexuality by each person. People with positive view of

their sexuality, tend to opt safer contraceptive methods, while those with negative are more prone to unsafe contraceptive methods such as coitus interruptus. Therefore, sexual behavior and contraceptive behavior are inextricably linked [36-40].

Sexuality is an integral part of one's personality. Accepting or rejecting sexuality makes her a "taboo". This also reflects on contraception, as it is directly related to it.

Safe contraception and liberation of the woman are two concepts that go hand in hand and complement each other. The contraceptive tablet did its best to differentiate sexuality from fertility. The issue of contraception, i.e. avoiding unwanted pregnancy, concerns the couple and burdens the relationship itself [36-40].

How the couple copes with this problem depends not only on the method of contraception followed, but also on the characters of the individuals. Men are not usually interested and convey the problem of contraception to the woman. The whole issue of contraception is directly related to awareness. Being aware of all aspects of the problem is the first step to start thinking about preventive measures need to be taken prevention means information and contraception.

And the question that arises here is how in today's modern "multi-information" era could someone be poorly informed, and not use a safe contraceptive method? We will stand by the view of sexologists, who say that: the choice of a contraceptive method has to do with sexuality itself [36-40].

The less taboo the topic of sexuality is, the more information and knowledge is available to individuals, the more familiar is someone with sexuality issues, the more positive one is about sexuality itself, the more confident the contraceptive method will be.

The opposite is the case when sexuality is taboo, not discussed or there are various inhibitions and possibly a negative image of sexuality itself. These are the cases in which fewer safe contraceptives are used, because there is inadequate information, ignorance or suspensions (e.g. "I am ashamed to ask", "this is not what I am discussing") [36-40].

Studies conducted in the region of Thrace to examine the factors affecting the contraceptive methods followed by adolescent women in this region have recorded differences in the method of contraception according to the age, educational level and religious beliefs of women. This conclusion led to the need of promoting information related to the modern contraceptive methods, improvement in the use of contraception and assurance

of reproductive health in this area.

Teenage women in Thrace are skeptical about the safety of the pill and its beneficial effects. It is worth noting that the majority of them associate the use of the pill with an increased risk of cardiovascular disease and cancer. Christians and Muslims differ in their socioeconomic status (occupational status, educational status, family income). Despite the different customs, morals and ethical codes, codes of conduct and practices, religion and culture, there are no significant differences in the use of the pill between Christians and Muslims. Women from both populations condemn and fear oral contraceptives, real or imaginary phobias. They - as well as OCPs users around the world - have to make a conscious daily decision to stick to this particular method of contraception, which makes them particularly vulnerable to significant discontinuation rates when they see that media insist only on their health risks and side effects [36-40]. It is of vital importance that skilled counselors have to establish counseling services related to contraception in all services that provide information on healthcare and contraception issues, so that women will be impartial and properly informed about the safety and efficacy of the pill. Periodic abstinence and coitus interruptus (both  $p < 0.001$ ), coitus interruptus was also common among unemployed women ( $p = 0.009$ ) IUDs were used more common by Muslims from Germany or Greece ( $p = 0.039$ ), while spermicides were more common in women under 25 ( $p = 0.028$ ), single women with or without a partner ( $p = 0.012$ ) and students ( $p = 0.012$ ). Religion seems to play an important role in the development of family planning programs / actions [41-44].

## Discussion

World Health Organization reports estimate that use of the male condom is as high as 19% of all contraceptive methods used in developed countries, compared to 6% in the least developed ones. However, new forms of male condoms from other materials such as polyurethane and other polymers are being developed to increase their acceptance and encourage the more consistent use [45-47].

Another important finding from our studies is that women from the reference populations, Christians and Muslims of Thrace and Muslims in Germany, are convinced of the contraceptive pill's contribution to depression, nausea, headaches and weight gain, with Muslims being more reluctant to use the contraceptive pill mainly due to interruption of daily intake [43-47]. This is in line with the results of other studies, where it has been documented that oral contraceptive side effects, including anger, frustration, anxiety and resentment, are responsible for a high discontinuation rate of up to 50-

60% [43-47].

Rosenberg and his colleagues calculated that the relative risk of discontinuation of contraceptive pills due to various side effects (menstrual disorders, weight gain, headache, nausea or vomiting, hirsutism breast tenderness) ranged from 1.0 to 1.4. In addition, studies have shown that the need to take the pill every day may be another reason why some women forget to take it in a few cycles [48-51].

In Greece, morals have changed rapidly in recent decades and the new generation, adopting modern trends, is determined to control its fertility. With this in mind, the aim should be to enlighten on the more personalized choice of the best contraceptive method and to radically change the public opinion against abortions. There seem to be so many abortions in Greece because they are considered as an easy solution, as a solution without medical and ethical dimensions. Our country, has a serious birth deficit and has fortunately been perceived by Greek society as a consequence of avoiding misunderstandings that diminish the value of this institution. Family planning center is not just about contraception and demographic policy, but about eugenics and young people's sexual education [52].

According to WHO, unsafe abortion is a "solution" for many women, including teenagers, when they have an unwanted pregnancy and are unable to access services. Obstacles that hinder a "safe" abortion may include restrictive legislation, low availability of services, high costs, "stigma", dealing with health professionals and misinformation, manipulative counseling, medically unnecessary tests, and more that delay any necessary care [53-56]. In our country, unwanted pregnancy that leads to abortion causes many problems to physicians, theologians, legislators, sociologists, psychologists and problems that leave almost no human, of any social class, religion or spirituality intact [52]. Family planning allows people to attain their desired number of children and determine the spacing of pregnancies, to practices that help individuals or couples avoid unwanted pregnancies, because of desired births, adjust intervals between pregnancies, control the time of birth according to the age of the parents and determine the number of children in the family [52]. Family planning allows people to make informed choices about their sexual and reproductive health. Contraception enables the couple to voluntarily, responsibly and consciously decide on the desired size of their family, because the size of the family should not be a matter of luck, but a choice of the couple [52,53-56].

The use of contraceptive methods is essential both in casual relationships and in long term healthy

relationships. In our country the contraceptive methods used are distinguished by natural methods, hormonal methods, intrauterine devices and barrier methods.

First Integrated Sexual Intercourse is of utmost importance in teenagers' sexual lives. It gives them a feeling of sexual fulfillment, but at the same time exposes them to potential hazards when there is no proper sexual education. The most important hazards can be unwanted pregnancy and concomitant problems that are often caused such as psychological, fertility issues, disruption of the educational process, social isolation etc., the spread of sexually transmitted diseases (STDs) and the increasing use of alcohol and other substances related to sexual activity [53-58].

Other factors related to the early age of the First Integrated Sexual Intercourse are parents' education, parent's marital status (unmarried or divorced parents), origin from northern European countries or other countries with more 'open' social perceptions. These factors also influence the type of the relationship (whether it was an evening / casual or not), the age of the partner (whether peer or not), the type of contraception used for the first time and the number of sexual partners [53-58].

The knowledge and application of safe "sexual health" practices by adolescents is influenced by factors other than individual factors such as age, gender, education, family, functioning counseling-support structures and the wider social environment.

In Greece, as a "conservative" society, family does not easily discuss sexual education issues with adolescents, and the primary healthcare structures that work on issues that concern young people are inadequate. Nevertheless, it is encouraging that a large number of adolescents use prophylactic methods during sexual intercourse, although their knowledge of contraception, STDs and family planning is lagging behind young people from other European countries [53-58].

Implementing effective sex education programs requires the collection and evaluation of important informations of the sex life of the adolescents, which should derive mainly from the individual references of the persons concerned, be anonymous and the process preceded by the commencement of their sexual behavior [52-58]. Concerning contraception in adolescence is a complex issue that causes embarrassment for families, health professionals, government officials, civil servants and young people themselves. Extensive efforts have been made to increase the use of contraceptive methods, and in particular the condom, to prevent both unwanted pregnancies and sexually transmitted diseases [52-58].

It is undoubtedly necessary to organize Family Planning Centers for adolescents and this has to be a priority of every government.

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