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Review Article

A Questionnaire Survey on the Selection of Contraceptive Methods by Two Students Religious Groups

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ABSTRACT

Introduction: The selection among different methods of contraception is particularly influenced by its effectiveness and the sexual well-being. The aim of this study was to survey the influence of religion on the selection of contraceptive method by university students.

Participants and Methods: Questionnaires (n=315) were anonymously filled by both Muslim (n=69) and Christian Orthodox (n=276) female students of Democritus University of Thrace (DUTH) who had visited the Family Planning Center of the University.

Results: Significant differences in demographic characteristics were not found. The selection of contraceptive method was not found to depend on religion and age. Conclusion: The use of contraceptive method constitutes not obligatory a response to moral and religious beliefs, due to the fact that unwanted pregnancy is prevented while women's fertility is protected.

Keywords: Contraception, Religion, Muslims and Christian Orthodox Students

Introduction

Religion seems to influence appreciably to the development of family planning programs [1]. Actually, religious leaders have the power to inhibit (or facilitate) effective adoption of contraceptive methods [2]. As an example, implants and copper intrauterine devices are rarely available or approved by Catholic Church a "strategy" that could increase the demand for abortions [3]. In Muslim women, religious and cultural beliefs together with husband's and family's opposition, are barriers to contraception use [4-8]. The attitude of religions towards assisted reproductive methods and the surrogate mother are also referred in the literature [9,10]. Changes in population composition, including immigration, is deemed necessary to be mentioned. The approach of religions regarding to issues such as contraception and assisted reproduction, plays a crucial role for family planning center in order to implement proper contribution to each religious group [7-10]. The Christian approach to sexual practices is based on the liberation of human from carnal desires aiming to the reproduction of human and creation of family. Sexual intercourse is only accepted as a mean of dissemination in the context of marriage, while the enjoyment of pleasure is regarded as abhorrent and sinful [7-10]. The pain of a couple who cannot conceive or is afraid to bring a child with a disability into the world is understood by the Church. Of course, the position of Christian religions on fertility is cloudy and heterogeneous. The desire for childbirth is considered natural and expresses an inner desire for the experience of fatherhood and motherhood [7-10]. There are significant differences in contraception and termination of pregnancy. Human life begins at the time of conception and therefore all forms of abortion and emergency contraception are prohibited unless the mother's life is endangered [11,12]. This article focuses on the differences between Christian orthodox and Muslim students and it investigates the different points of view of each group about induced abortions and contraception. Between these two religions, we have analyzed the perspectives of students' belonging to the Greek Orthodox faith, which is the prevailing religion in Greece.

Sharia recognizes the naturalness of sexual impulses, allows intercourse in marriage for the purpose of reproduction but also just for pleasure. The Koran associates sexual intercourse with reproduction. By the term Hadith, we refer to the Islamic tradition that delivers the words and deeds of the Prophet Muhammad or even his endorsement of to what was said or done before him [13,14]. Covering of the face as well as all the limitations are mentioned solely as an obligation of the Prophet's wives, family and marriage are fundamental issues for the Islamic community but not mandatory [13,14]. The Koran correlates sexual intercourse with reproduction and allows only vaginal contact. Intercourse during menstruation, illness and disability is to be avoided [13,14]. The Islam places great emphasis on fertility because its aim is to spread and expand Muslim communities [13,14]. The family planning is not prohibited though some believe that it violates divine will. Coitus interruptus is permitted in the Koran but also if medical or socio-economic reasons coexist it is recommended [13,14].

In general, modern methods of contraception are allowed from the beginning of married life but they have to be reversible, safe, legal and to improve the quality of life of offspring. Abortion of a viable embryo is considered a crime, like murder, and emergency contraception are condemned [13-16].

Regarding contraception there is no prohibition or obligation, but it is treated flexibly as decisions are about motivation and purpose. Religion is a factor of influence in every person's lifestyle, influencing perception and approach and adopting sexual behavior as part of each person's system of values. From the foregoing it appears that there are differences from country to country, from people to people and from congregant to congregant [17, 18]. Furthermore, the education, family, personality, and the perspectives of each person play an important role for the adoption of sexual behavior and the choice of contraception method. Awareness of diversity is essential to the best practice of family planning in every person, regardless of expectations, ideology and beliefs, as the subject is personal and not religious [17,18].

The purpose of this study is to determine whether there is a relationship between religion and contraception in two selected subpopulations with a high level of education. It is important to investigate the contraceptive behavior of these two subgroups due to the fact that a lot of Muslims are in the area of Thrace and the two religions have a lot of differences in the aspect of induced abortions and the position of the woman.

Methods

To investigate the differentiation in attitude towards contraception, representatives of two female student subgroups

in DUTH were studied: 69 Muslim women living in Thrace – Greece and 246 Christian Orthodox women living in Thrace – Greece.

The study was conducted during June 2014 until December 2018 in the Family planning center of the Department of Obstetrics and Gynaecology, at the Democritus University, Greece. This study is part of a general study aimed at assessing the health habits of students related to topics such as sexual intercourse and contraception, STDs, smoking, the demand / use of preventive programs by local health services and how to get informed on health issues. Prior to their participation, the students were informed for the purpose of the study and their voluntary participation. The questionnaires where strictly anonymous

It was particularly emphasized the anonymity for all participants, and it was not possible to control their answers from another student or teacher in the course during the completion of the questionnaire.

Questionnaire

For the present study concerning sexual relations and contraception, the students completed closed-ended and open-ended questions and matching questions to ensure the reliability of their answers. The estimated average completion time was 20 min.

All respondents were of reproductive age (range from 17 to 42 years; mean age 21.90 ± 3.28 years; median age 21 years).

Statistical analysis

Statistical analysis of the data was performed using the Statistical Package for the Social Sciences (SPSS), version 19.0 (SPSS, Inc., Chicago, IL, USA). All categorical variables were expressed as frequencies and percentages (%), while women's age was expressed as mean value ± standard deviation (SD). The chi-square test was used to evaluate any potential association between the method of contraception, the sources of information about sex and contraception, menstrual cycle disorders and other health problems related to religion; odds ratios (OR) and their 95% confidence intervals (95% CI) were calculated by means of simple logistic regression analysis, as the measure of the above associations. All tests were two tailed and statistical significance was considered for p values less than 0.05.

Results

The two groups of women were comparable in terms of age (Christian Orthodox: 22.03 ± 3.30 years vs Muslim: 21.45 ± 3.20 years, p=0.193). The vast majority of the participants (299 women, 94.9%) used some method of contraception; the most common methods of contraception in descending order were the use of condom (74.3%), coitus interruptus(29.2%), the contraceptive pill (11.1%) and the periodic abstinence (14.6%). Almost 70% of the participants (217 women, 68.9%) have used only one method of contraception. Internet (54.9%), family (53.7%), classmates and friends (49.5%) and medical resources (27.9%) were the most common sources of information on sex and contraception. Unstable period (37.1%), menarche age <11 years (32.7%), severe or prolonged periods (24.1%) and hypoglycaemia symptoms (22.2%) were the most frequent menstrual cycle abnormalities, while acne aggravation depending on the stage of the menstrual cycle (36.2%) was the most common medical problem of the participants.

Women were divided into two age subgroups, women <21 years old and women ≥21 years old, and differences between Christian Orthodox and Muslim women were determined in each age group with respect to the method of contraception and the sources of information. The division of each group into two subgroups below and above the age of 21 is strictly unquestionable, based on our experience because at this age after puberty the young students are set free from family influence and acquire their own personality. Chi-square test revealed that, among women aged <21 years, the percentage of those not using any method of contraception was 5.6 times higher in Muslims compared to Christians (13.8% vs 2.8%, p=0.015; OR=5.60, 95% CI=0.97-32.48), while the selection of the method of contraception was independent of women's religion.

The interesting fact is based on sociocultural structure of Muslim teenagers' community. In this subgroup there is a great deficit of knowledge of contraceptive methods, they ignore contraception in general and the immediate start of family planning is a life goal for them. In this age group mainly opposite to Christian orthodox teenagers we have noticed a high rate of teenage pregnancies.

In particular, the use of all methods of contraception was similar (all p>0.100) between Christian and Muslim women in both age groups (Table 1, Figure 1a&1b).

Regarding to the sources of information on sex and contraception, it was found that: (i) Christians were more likely to be informed by lectures compared to Muslims (18.1% vs 0.0%, p=0.014), while a tendency towards higher frequency of getting informed by medical sources was observed in Muslims compared to Christians (44.8% vs 26.4%, p=0.072; OR=2.27, 95% CI=0.92-5.58) in women aged <21 years; and (ii) internet was twice more common source of information in Christians compared to Muslims (55.7% vs 37.5%, p=0.037; OR=2.10, 95% CI=1.04-4.26) in women aged ≥21 years. The incidence of all other sources of information on sex and contraception was similar (all p>0.100) between Christian and Muslim women in both age groups (Table 1, Figure 1c&1d).

In addition, the incidence of menstrual cycle disorders and other health problems was compared between Christian and Muslim women in the two age groups (Table 2). Among women aged <21 years, it was found that the period lasts >35 days and taking birth control pills for health reasons were almost 3 times more frequent in Muslims compared to Christians (24.1%

Table 1: Contraceptive methods, information sources for sex and contraception, cycle abnormalities and other religion-related health problems in women either <21 or ≥21 years of age.

	Women's age <21 years		Women's age ≥21 years	
	Christians	Muslims	Christians	Muslims
Contraception methods				
Contraceptive pill	5 (6.9)	5 (17.2)	20 (11.5)	5 (12.5)
Condom/male sheath	50 (69.4)	22 (75.9)	130 (74.7)	32 (80.0)
Contraceptive ring (NuvaRing)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Contraceptive patch (OrthaEvra)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Coil ,IUD or IUS (Mirena)	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.0)
Cap/Diaphragm	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Gels, sprays, spermicides or pessaries	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Withdrawal, sexual intercourse	16 (22.2)	8 (27.6)	56 (32.2)	12 (30.0)
Injections (Depo Provera) or Implanted contraceptive capsules	0 (0)	0 (0.0)	0 (0)	0 (0.0)
Sterilization: Vasectomy/Tubal Ligation (partner is/I have been	0 (0)	0 (0.0)	0 (0)	0 (0.0)
Going without sex/abstinence	18 (25.0)	5 (17.2)	20 (11.5)	3 (7.5)
Emergency contraception pill or morning after pill	2 (2.8)	0 (0.0)	6 (3.4)	2 (5.0)
No method used	2 (2.8)	4 (13.8)*	8 (4.6)	2 (5.0)
Which way do you obtain the sex and contraception knowledge				
Popular science readings	14 (19.4)	4 (13.8)	33 (19.0)	5 (12.5)
Newspapers and periodicals	8 (11.1)	4 (13.8)	41 (23.6)	5 (12.5)
Network	41 (56.9)	20 (69.0)	97 (55.7)	15 (37.5)*
Radio and TV	6 (8.3)	5 (17.2)	22 (12.6)	3 (7.5)
Classmates and friends	30 (41.7)	12 (41.4)	93 (53.4)	21 (52.5)
Course education	11 (15.3)	4 (13.8)	14 (8.0)	5 (12.5)
Family	42 (58.3)	17 (58.6)	85 (48.9)	25 (62.5)
The family planning professionals	2 (2.8)	0 (0.0)	4 (2.3)	2 (5.0)
Lectures	13 (18.1)	0 (0.0)*	14 (8.9)	5 (12.5)
Medical staff	19 (26.4)	13 (44.8)	47 (27.0)	9 (22.5)
Exhibition	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Informal publications	1 (1.4)	1 (3.4)	3 (1.7)	0 (0.0)
None of the above	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Table 2: Cycle abnormalities and other religion-related health problems in women either <21 or ≥21 years of age.

	Women's age <21 years		Women's age ≥21 years	
	Christians	Muslims	Christians	Muslims
Cycle abnormalities at menarche				
Menarche age<11 years old	21 (29.2)	6 (20.7)	59 (33.9)	17 (42.5)
Menarche age<12 years old	21 (29.2)	6 (20.7)	59 (33.9)	17 (42.5)
Period that lasts more than 35 days	8 (11.1)	7 (24.1)	18 (10.3)	5 (12.5)
Unstable period.	26 (36.1)	14 (48.3)	60 (34.5)	17 (42.5)
Period that lasts more than 1 week	6 (8.3)	3 (10.3)	13 (7.5)	4 (10.0)
Intense or prolonged menstrual cycle	19 (26.4)	9 (31.0)	35 (20.1)	13 (32.5)
Intense hair on the face	6 (8.3)	3 (10.3)	27 (15.5)	6 (15.0)
Hypoglycaemiasymptoms	19 (26.4)	8 (27.6)	33 (19.0)	10 (25.0)
Other health problems				
My acne is worse at different times of my cycle	28 (38.9)	15 (51.7)	54 (31.0)	17 (42.5)
Contraceptive pills intake	6 (8.3)	6 (20.7)	21 (12.1)	5 (12.1)
Diabetes Mellitus	0 (0.0)	0 (0.0)	1 (0.6)	1 (2.5)
Past surgeries	17 (23.6)	5 (17.2)	30 (17.2)	13 (32.5)*
Pharmaceutical drugs intake	12 (16.7)	5 (17.2)	21 (12.1)	7 (17.5)

vs 11.1%, OR=2.55, 95% CI=0.83-7.83 and 20.7% vs 8.3%, OR=2.87, 95% CI=0.84-9.79, respectively), although both differences were of marginal statistical significance (p=0.096 and p=0.083, respectively) (Figure 2a). In women aged ≥21 years, a tendency towards higher frequency of intense and prolonged periods was observed in Muslims compared to Christians (32.5% vs 20.1%, p=0.092; OR=1.91, 95% CI=0.90-4.08) and past surgeries were almost 2.3 times more frequent in Muslims compared to Christians (32.5% vs 17.2%, p=0.030; OR=2.31, 95% CI=1.07-4.99) (Figure 2b). The incidence of menstrual cycle disorders and other health problems was similar (all p>0.100) between Christian and Muslim women in both age groups (Table 2).

In order to assess the impact of religion on the method of contraception and the source of information used, the incidence

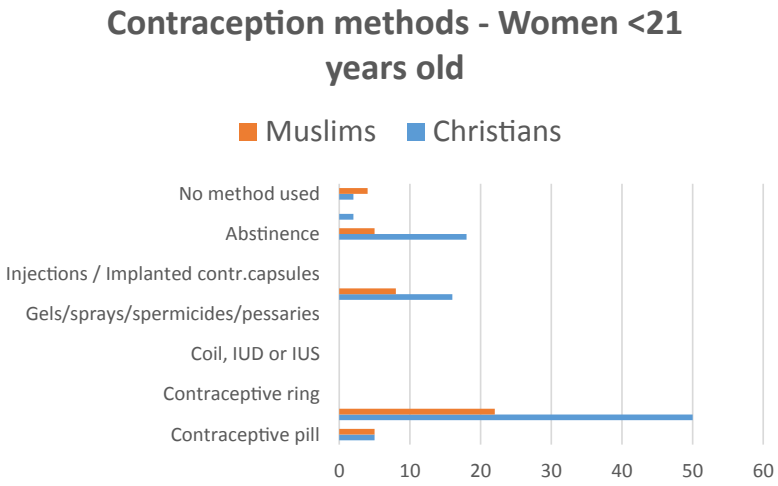

Figure 1a: Contraception methods used by women <21 years old.

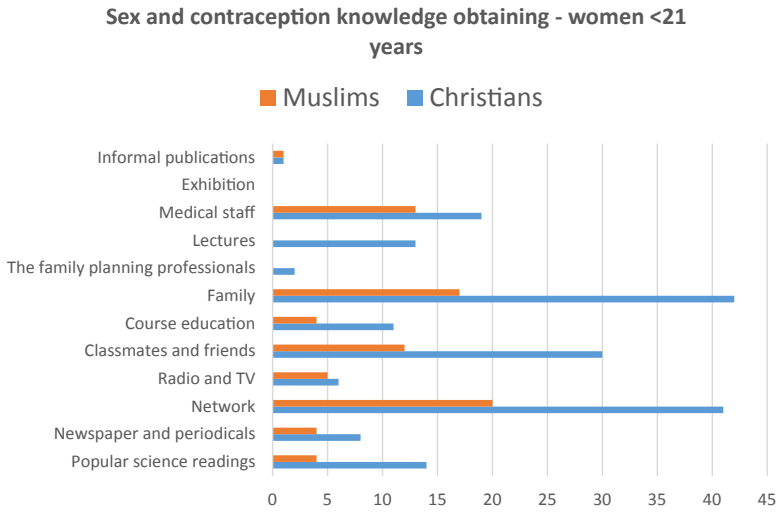

Figure 1b: Sex and contraception knowledge obtaining for women <21 years.

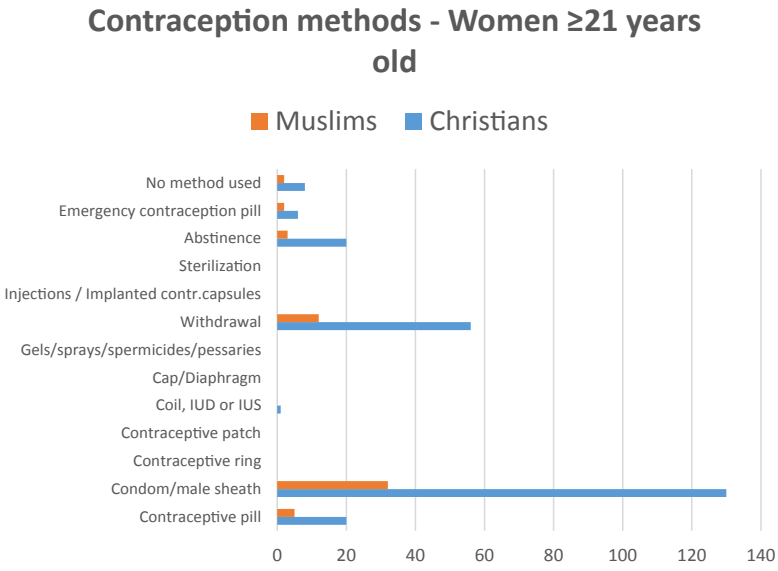

Figure 1c: Contraception methods used by women ≥21 years old.

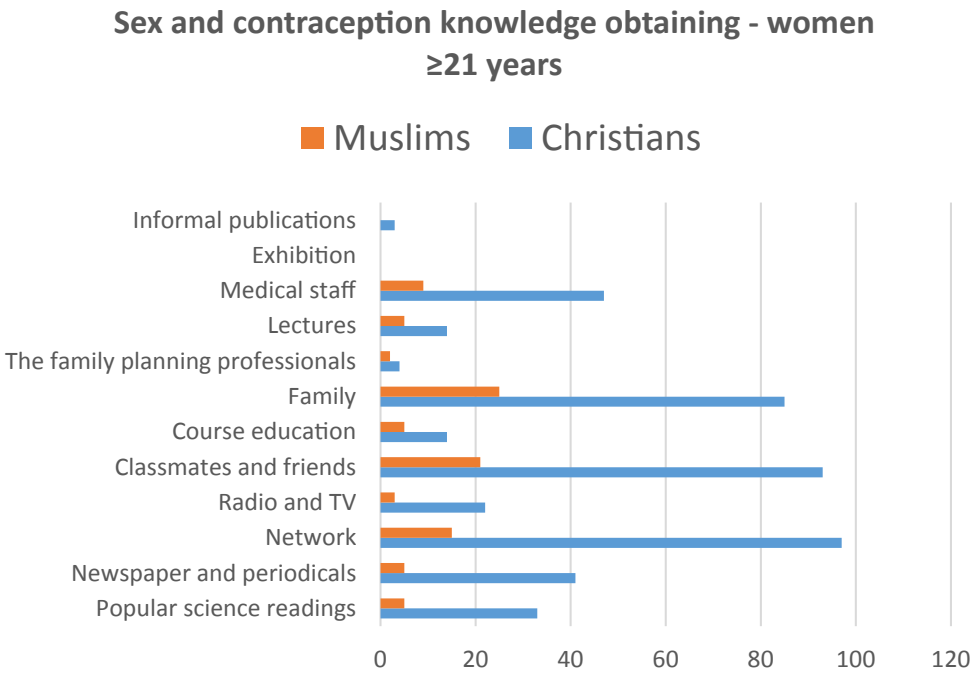

Figure 1d: Sex and contraception knowledge obtaining for women ≥21 years.

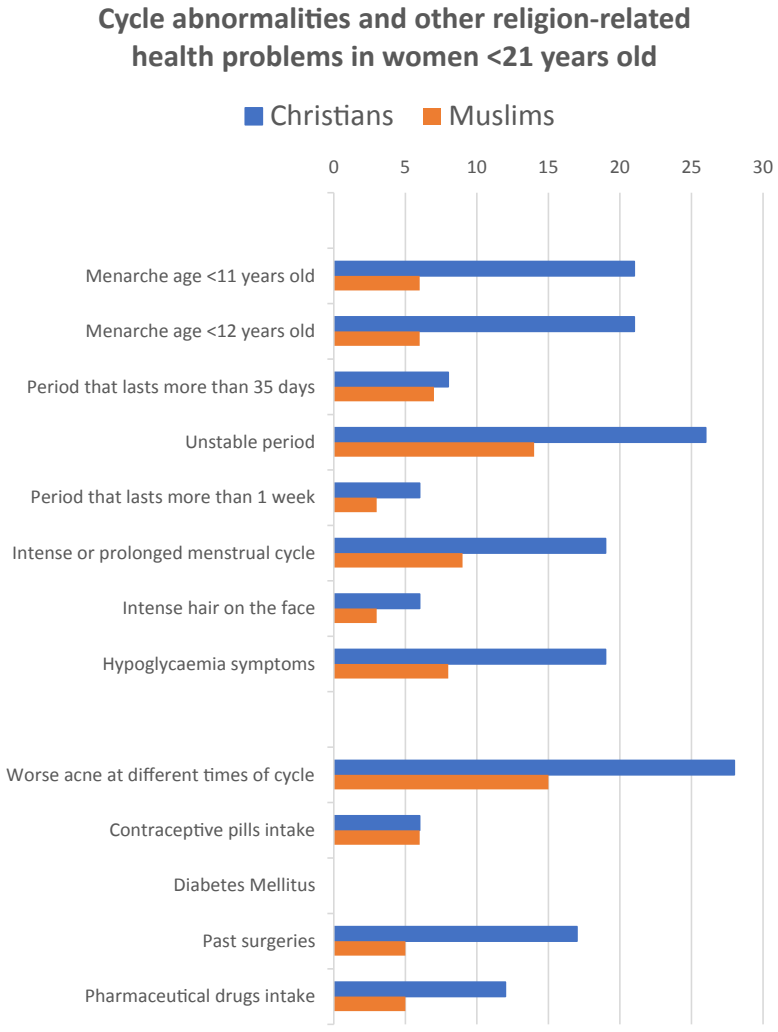

Figure 2a: Cycle abnormalities and other religion-related health problems in women <21 years of age.

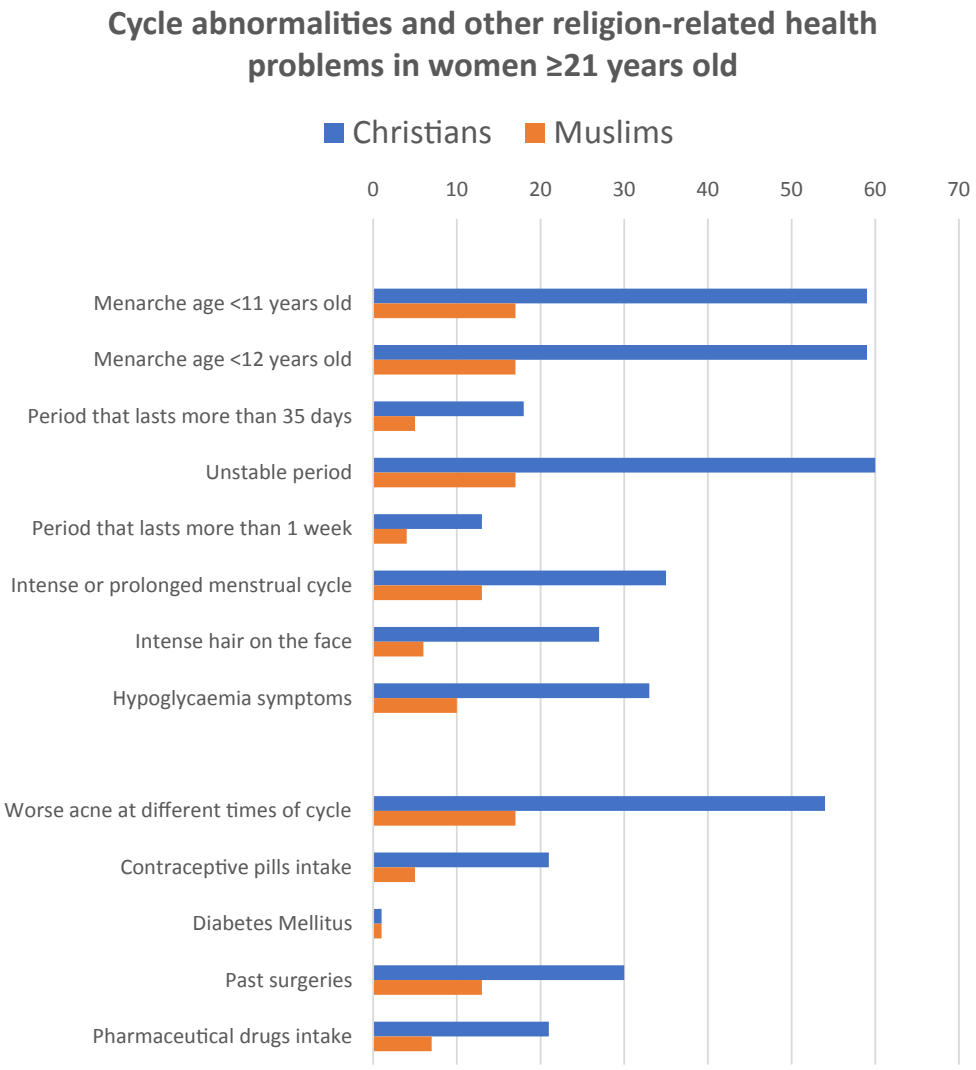

Figure 2b: Cycle abnormalities and other religion-related health problems in women ≥21 years of age.

of all methods of contraception and the sources of information were compared between women in which religion had little or no significant effect, among all subgroups of women according to age and religion (Tables 3 and 4). It was observed that the selection of the method of contraception and the source of information was independent of religion. In particular, the use of all methods of contraception and sources of information was similar between women in which religion had a low or significant effect on both age groups (Table 3, Figure 3 a-d), with the exception of condom use, which was more common in Muslims in which religion had a significant effect compared to Muslims in which religion had a low effect (87.9% vs 42.9%, p = 0.007; OR = 9.67, 95% CI = 1.56-60.01) among women aged ≥21 years (Table 4, Figure 4 a-d).

Another finding of our study concerned with the differentiation of the age of onset of sexual intercourse. It appears significantly that younger people in both subgroups began their sex life earlier than the older. One possible reason for this change is the earlier age of menarche in girls, which is not necessarily incompatible with early maturity combined with a lack of knowledge and experience at this age.

Discussion

Contraception means preventing an unwanted pregnancy, preserving fertility and planning the family. According to WHO, family planning allows people to make informed choices about their sexual and reproductive health. Contraception is based on prevention and affects all women and men of childbearing age. In addition, contraception is the right and obligation of every person to safeguard his or her physical and mental health. Women in reproductive age and especially teenagers have a lot of emotional issues during this period of their life. Health professionals in family planning centers deal with their sexual behavior and their emotional status [5-10]. 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. The use of contraceptive methods is essential, both in casual and long-lasting healthy relationships.

Table 3: Contraceptive methods, information sources for sex and contraception information, cycle abnormalities and other health problems related to the impact of the Christian religion on women <21 or ≥21 years of age.

	Women's age <21 years		Women's age ≥21 years	
	None influence of religion	Important influence of religion	None influence of religion	Important influence of religion
Contraception Methods				
Contraceptive pill	5 (9.4)	0 (0.0)	15 (11.4)	5 (11.9)
Condom/male sheath	37 (69.8)	6 (68.4)	96 (72.7)	34 (81.0)
Contraceptive ring (NuvaRing)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Contraceptive patch (OrthaEvra)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Coil, IUD or IUS (Mirena)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.4)
Cap/diaphragm	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Gels, sprays, spermicides or pessaries	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Withdrawal, sexual intercourse	12 (22.6)	4 (21.1)	45 (34.1)	11 (26.2)
Injections (Depo Provera) or Implanted contraceptive capsules (Implanon)	0 (0)	0 (0.0)	0 (0)	0 (0.0)
Sterilization: Vasectomy/ Tubal Ligation (partner is/I have been)	0 (0)	0 (0.0)	0 (0)	0 (0.0)
Going without sex/abstinence	12 (22.6)	6 (31.6)	16 (12.1)	4 (9.5)
Emergency contraception pill or morning after pill	1 (1.9)	1 (5.3)	4 (3.0)	2 (4.8)
No method used	2 (3.8)	0 (0.0)	6 (4.5)	2 (4.8)
Which way do you obtain the sex and contraception knowledge				
Popular science readings	12 (22.6)	2 (10.5)	23 (17.4)	10 (23.8)
Newspaper and periodicals	6 (11.3)	2 (10.5)	33 (25.0)	8 (19.0)
Network	30 (56.6)	11 (57.9)	74 (56.1)	23 (54.8)
Radio and TV	4 (7.5)	2 (10.5)	15 (11.4)	7 (16.7)
Classmates and friends	23 (43.4)	7 (36.8)	71 (53.8)	22 (52.4)
Course education	8 (15.1)	3 (15.8)	8 (6.1)	6 (14.3)
Family	32 (60.4)	10 (52.6)	67 (50.8)	18 (42.9)
The family planning professionals	1 (1.9)	1 (5.3)	3 (2.3)	1 (2.4)
Lectures	10 (18.9)	3 (15.8)	10 (7.6)	4 (9.5)
Medical staff	14 (26.4)	5 (26.3)	32 (24.2)	15 (35.7)
Exhibition	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Informal publications	1 (1.9)	0 (0.0)	3 (2.3)	0 (0.0)
None of the above	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Table 4: Contraceptive methods, information sources for sex and contraception, cycle abnormalities and other health problems related to the impact of the Muslim religion on women <21 or ≥21 years of age.

	Women's age <21 years		Women's age ≥21 years	
	None influence of religion	Important influence of religion	None influence of religion	Important influence of religion
Contraception Methods				
Contraceptive pill	2 (50.0)	3 (12.0)	2 (28.6)	3 (9.1)
Condom/male sheath	3 (75.0)	19 (76.0)	3 (42.9)	29 (87.9)*
Contraceptive ring (NuvaRing)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Contraceptive patch (OrthaEvra)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Coil, IUD or IUS (Mirena)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Cap/diaphragm	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Gels, sprays, spermicides or pessaries	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Withdrawal, sexual intercourse	1 (25.0)	7 (28.0)	3 (42.9)	9 (27.3)
Injections (Depo Provera) or Implanted contraceptive capsules	0 (0.0)	0 (0.0)	0 (0)	0 (0.0)
(Implanon)				
Sterilization: Vasectomy/ Tubal Ligation (partner is/I have been)	0 (0.0)	0 (0.0)	0 (0)	0 (0.0)
Going without sex/abstinence	0 (0.0)	5 (20.0)	2 (28.6)	1 (3.0)
Emergency contraception pill or morning after pill	0 (0.0)	2 (6.1)	0 (0.0)	2 (6.1)
No method used	0 (0.0)	4 (16.0)	1 (14.3)	1 (3.0)
Which way do you obtain the sex and contraception knowledge				
Popular science readings	0 (0.0)	4 (16.0)	1 (14.3)	4 (12.1)
Newspaper and periodicals	0 (0.0)	4 (16.0)	2 (28.6)	3 (9.1)
Network	1 (25.0)	19 (76.0)	4 (57.1)	11 (33.3)
Radio and TV	0 (0.0)	5 (20.0)	2 (28.6)	1 (3.0)*
Classmates and friends	0 (0.0)	12 (48.0)	5 (71.4)	16 (48.5)
Course education	1 (25.0)	3 (12.0)	2 (28.6)	3 (9.1)
Family	3 (75.0)	14 (56.0)	4 (57.1)	21 (63.6)
The family planning professionals	0 (0.0)	0 (0.0)	1 (14.3)	1 (3.0)
Lectures	0 (0.0)	0 (0.0)	1 (14.3)	4 (12.1)
Medical staff	2 (50.0)	11 (44.0)	1 (14.3)	8 (24.2)
Exhibition	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Informal publications	1 (25.0)	0 (0.0)	0 (0.0)	0 (0.0)
None of the above	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

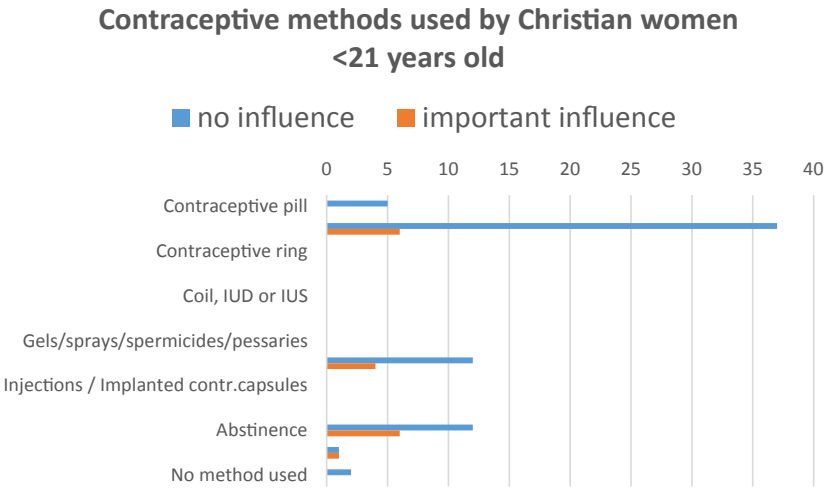

Figure 3a: Contraceptive methods used by Christian women <21 years old.

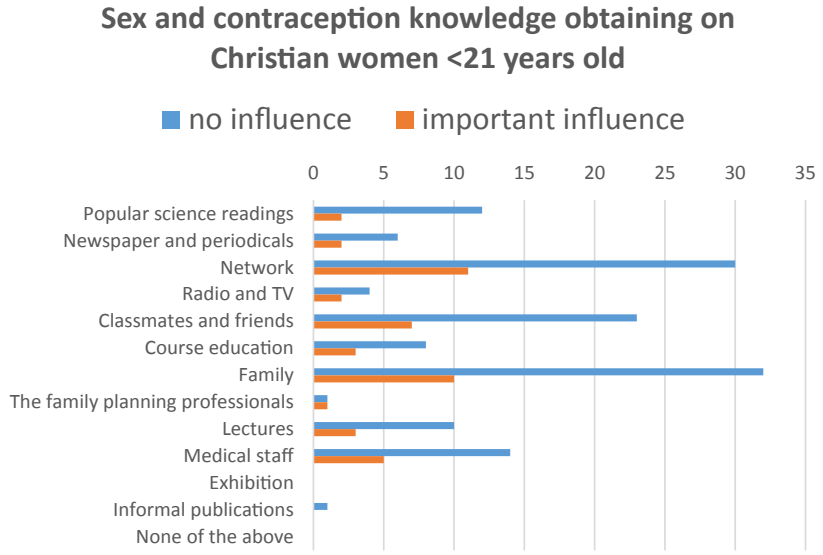

Figure 3b: Sex and contraception knowledge obtaining for Christian women <21 years old.

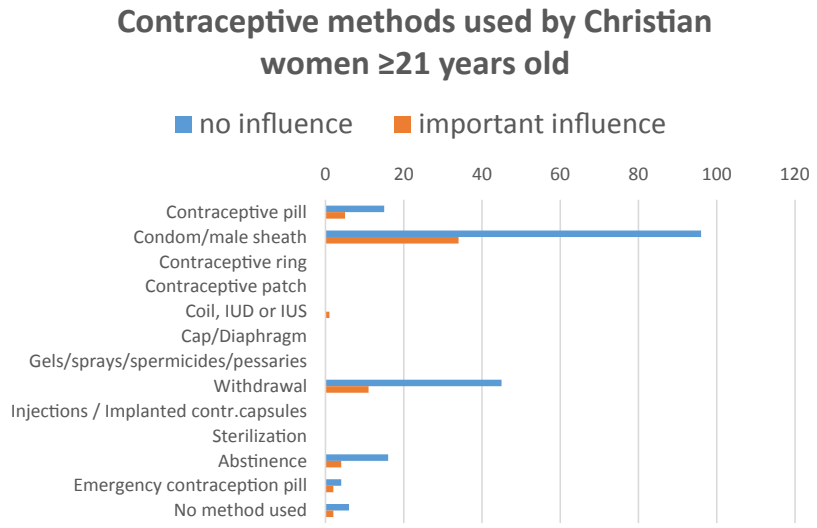

Figure 3c: Contraceptive methods used by Christian women ≥21 years old.

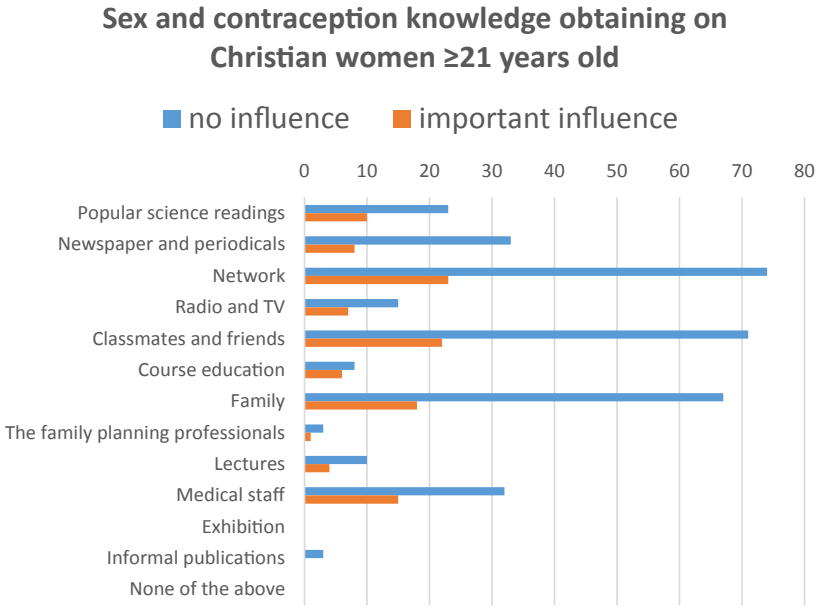

Figure 3d: Sex and contraception knowledge obtaining for Christian women ≥21 years old.

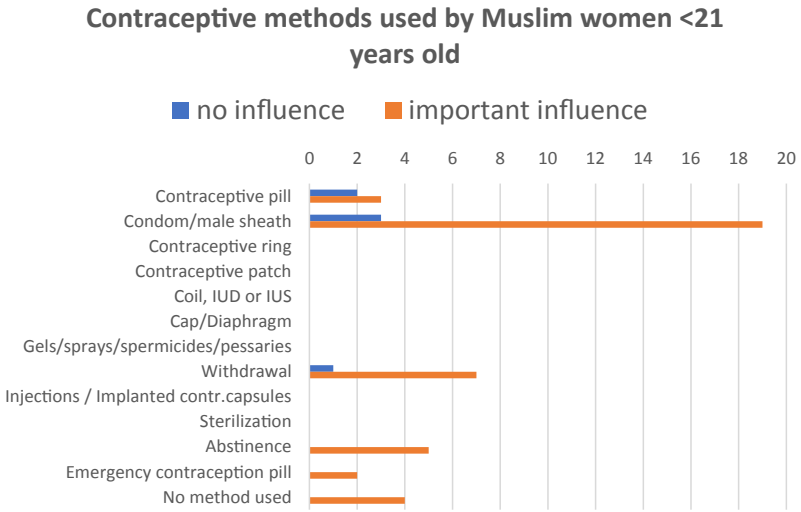

Figure 4a: Contraceptive methods used by Christian women <21 years old.

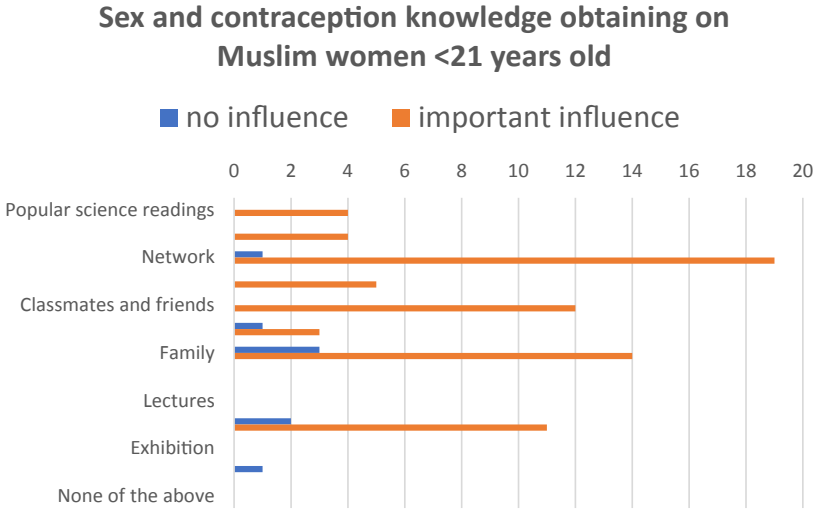

Figure 4b: Sex and contraception knowledge obtaining for Christian women <21 years old.

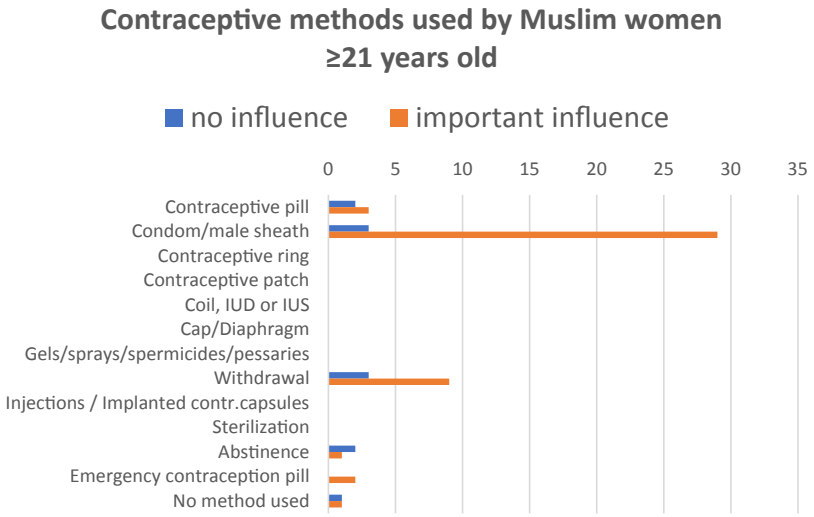

Figure 4c: Contraceptive methods used by Christian women ≥21 years old.

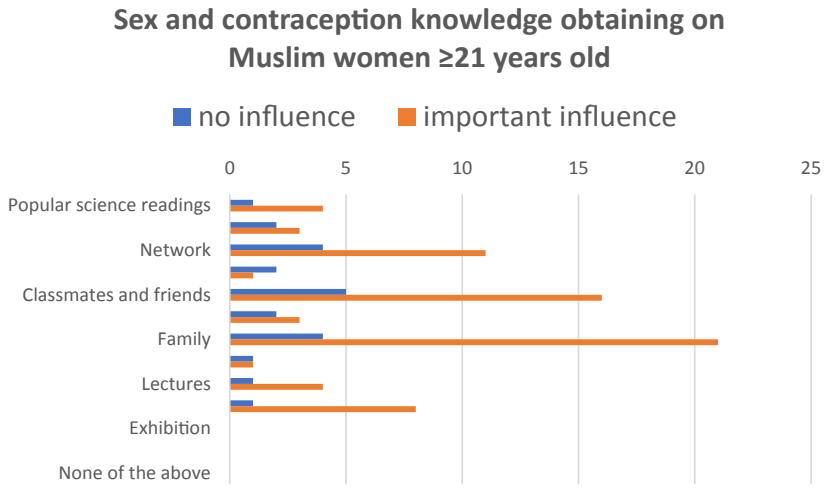

Figure 4d: Sex and contraception knowledge obtaining for Christian women ≥21 years old.

In Greece, contraception methods are used to distinguish between natural methods, hormonal methods, IUD and barrier methods [5-10]. According to the handbook of the Ministry of Health, published in 1990 to promote the information of healthy people about family planning services and counselling, there are three key parameters to choosing a contraceptive method: profitability, risk and tolerance. Of course, the contraceptive safety of each method and the choice by age are other factors that influence the choice of contraception [14-19].

This is because there are different reasons and conditions: at the beginning of childbearing, at the end of it, in relation to reproduction: interest-free, in women wishing to postpone pregnancy, or during lactation and after, in women who have completed family planning, or contraception after intercourse, and in the case of women with diabetes. The impact of sex education and the communication with the family for a woman ‘ s decision about the use of contraception method could be negative based on conservative society .The women need sex education and knowledge about contraceptive methods to have the ability to decide the most appropriate method of contraception for them.

Natural methods are coitus interruptus and periodic abstinence [20-24]. Oral contraceptives include contraceptive tablets, emergency contraception, or emergency contraception and the vaginal ring. Oral contraceptive pills are highly effective and contain small amounts of estrogen and progesterone to prevent ovulation. Advantages of this method are cycle adjustment, reduction of dysmenorrhea, positive effect on the skin and relief of premenstrual syndrome symptoms (abdominal and breast swelling) [20-24]. The vaginal ring is applied intravaginally to the woman for a period of 21 days. Changing it every three weeks, vomiting or diarrheas do not affect the safety of the method... The first sexual contact of a woman who is virgin is stressful and painful IUDs are devices that are placed by a gynecologist and remain in the uterus for a long time (3-5 years). Their contraceptive action is due to a local aseptic inflammatory reaction, which the IUD as a foreign body causes in the uterus and prevents fertilization. It is simple to

apply,requires medical examination but presents an increased risk of inflammation and ectopic pregnancies [20-24]. The male condom is the most common mechanical contraceptive method and one of the oldest. Its contraceptive efficacy varies between 64-97% and failure rate is 10-15%. The causes of failure are manufacturing errors, tearing during application, rupture or removal during intercourse and finally sperm drain due to delayed removal. Psychological reasons are often the source of denial of condom but, due to sexually transmitted diseases, it is indispensable in any casual, non-permanent relationship, regardless of whether the woman uses another contraceptive method [20-24].

Studies conducted in Thrace to examine the factors affecting contraception by women in the region are characteristic. Differences in the method of contraception, age, educational status and religious perception of women were recorded, and the conclusion led to the need to promote information on the choice of modern contraceptive methods in order to improve the use of contraception and to ensure reproductive health in that area [24-28].

First sexual intercourse is a crucial point in teenagers' sexual lives. It creates a feeling of sexual integration, but at the same time exposes them to potential hazards, when there is no proper sexual education [25].The most important risks can be unwanted pregnancy and concomitant problems that often are caused (psychological, fertility problems, disruption 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. An increase in the above-mentioned risks in recent years is also associated with a concomitant decrease in the age of first sexual intercourse [26-28].

Surveys of secondary school students highlight the impact of gender and the level of education at the age of the first sexual intercourse, with boys and vocational school students experiencing the largest decline. Other factors related to the early age of first sexual intercourse are education of parents, their marital status, especially if they have unmarried or divorced, and origin from northern European and other countries with more 'open' social perceptions. These factors also influence the type of relationship (whether it was evening / casual or not), the age of the partner (peer or not), the type of contraception used for the first time, and the number of sexual partners.

The knowledge and application of safe sexual health practices by adolescents is influenced by factors other than individual factors, such as age of first sexual intercourse, gender, education, family, function of consulting/supporting structures and the wider social environment [29-38].

In Greece women's emancipation is accepted especially from the majority of the young people ,however within the family conservative perceptions from the past led to unsatisfactory sex education , recognized contraception as unnecessary and unappropriated It is noted that among medical students, the percentage of those who use safe contraceptive methods and consult their gynaecologist for contraceptives is quite low.

This may indicate a lack of education for future health professionals who will assume a significant part of the responsibility for educating young people about sexual behavior [7-9,13,39]. However, it is encouraging that a large number of adolescents use preventive methods during sexual intercourse, although their knowledge of contraception, STDs and Family planning is delayed compared to young people from other European countries [7-9,13,39]. Implementing effective sex education programs requires the collection and evaluation of important information for the sexual life of adolescents, which must derive mainly from the personal references of the persons concerned, should be anonymous and the process preceding the commencement of their sexual behavior. It should also aim primarily at adolescents' needs and be implemented taking into account local support structures [7-9,13,39].

For this reason the main point of our study was to record the sexual behavior of a large group of students (two) and primarily to investigate factors related to the age of first sexual intercourse and their contraceptive behavior during the first sexual intercourse Bioethics is a sector of science that deals with the ethical issues that have arisen from the advancement of Biology, Genetics and other related sciences. In the area of abortion there are two dominant views. The former holds that the fetus has a right to life and it should not be the woman's choice to terminate her pregnancy or not. Those who agree with the opinion above, accept that in some cases the life of a pregnant woman is at risk or if pregnancy is the result of rape, seduction or incest, she may undergo abortion. On the other hand, there is the view of those who believe that a woman has the right to manage her own life and can decide for herself whether to terminate her pregnancy or not. Bioethics examines both views and comes to many conclusions that may be useful on both sides. It seems that those who are against abortion and in favor of fetal life are in a dilemma when the pregnant woman's life is at risk from the fetus itself. If one argues that this is an exception and only then, abortion could be an option, then one must consider how it is possible to defend life and kill an embryo. By what criterion can the pregnant woman be saved and the fetus die and not the other way around? If one believes that he defends life in all its grandeur, then one must not exclude situations. So, those who oppose abortion must adhere to this view regardless of probable serious complications or consequences. Therefore, their opinion should not be considered as a defense of life when the birth of a child may endanger the life or health of the mother or cause other major problems in her life in the context of marriage, which is an important element for the stability of the society [40-42].

The main stages in the history of family planning focused on our institution's original goals. The movement expresses far more positions than the conceptual meaning of family planning [40-42]. Since the goals concern solving problems that are not directly related to family formation, the term "responsible sexual relations" would be more appropriate [40-42].

Historically two of the goals of the movement were: 1) contraception for women's health and family happiness and 2) contraception for demographic reasons. In Greece, morals have

changed rapidly in recent decades and the new generation, is determined to control its fertility by adapting modern trends. With this in mind, the aim should be to enlighten on the more personalized choice of the best contraceptive method and to radically change abortion [7-9,13]. There seem to be so many abortions in Greece because they are seen as an easy solution, a solution without medical and ethical dimensions. Family planning it is not just about contraception and demographic policy, but about eugenics and young people's sexuality or sexual education. Nowadays family planning includes in its objectives other areas related to sexual relationships and problems associated with them, such as infertility, adoption, sex education, sexually transmitted diseases and all aspects of sexual health. These programs, organized by the Greek Society of Family Planning under the supervision of the University of Athens, had led to a reduction in abortion rates in Greece [7-9,13,39].

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, thalassemia, dealing with health professionals and misinformation, manipulative counselling, medically unnecessary tests, and more, delaying thus any necessary care. In our country, unwanted pregnancy that leads to abortion causes many problems to physicians, theologians, legislators, sociologists, psychologists and problems that leave intact almost no human, of any social class, religion or spirituality. From ancient times abortion was not considered a forbidden act because women had enough children or did not want to disfigure their body and could freely undergo abortion [35-39]. The implementation of these decisions is an obligation of the state and the citizens of each country itself. Family planning refers to practices that could help couples or individuals to avoid unwanted gestations, cause desired births, adjust intervals between pregnancies, control the timing of births according to the age of the parents, and determine the number of children in the family but in actions that guarantee to everyone inalienable and democratic rights. Moreover, family planning provides information on: contraception, infertility, counseling or group or individual, prevention of sexually transmitted diseases, prevention of female / male cancer, counseling of parents, adolescents and children - interpersonal treatment, menopause, andropathy, relationships, marriage, sex life, sexual dysfunctions, choices and / or aberrations. To decide how / when to implement family planning, to be aware of the benefits and value of family planning as a result of which medical and psychosocial effects are avoided and to provide contraceptive methods [35-39].

Other factors encouraging the early age of first sexual intercourse are marital status (divorced parents) recent death, living away from the mother, parental attitudes, and especially parents' views on sexuality, low socioeconomic status, unhealthy lifestyle such as smoking and drug use, having sex with multiple partners, changing the moral, cultural and religious perceptions to the more liberal current models etc. Of course, the large variation in the results of the first integrated sexual intercourse may be a consequence of the high heterogeneity of the samples, the year of each survey, the country, etc. [35-39]. Otherwise, the results are different from previously other published studies from our Department. This can be explained as our study is focused strictly just on the university student population. On the contrary other similar studies are referred to as general populations of Thrace Muslims and Christian orthodox led to other results where there was a great deal of religious influence

According to Narring et al, the boys had an increased tendency for casual relationships [43]. According to this study, at first sexual intercourse most participants similar in both subgroups prefer older partners, choosing a longer relationship. However, in international literature, the two subgroups have a different attitude towards the age of first partner selection, as girls generally prefer older partners seeking longer relationships to cover basic emotional and less biological needs [44].Other points of crucial importance based on our findings present that factors like religion, age and information sources have no impact to contraception's method decision.

The sample concerned with parent's education was found to be related to the age at which student's sexual relationships began. Those who had parents with a lower level of education began sex earlier, as opposed to those whose parents had a higher level of education. This differentiation may be related to the degree to which liberal or conservative perceptions develop in the close family environment. In general, the role of the mother seems to be decisive in the sexual education of adolescents, especially girls, and is mainly concerned with the development of conservative perceptions [19].

The use of contraceptive methods is also an important element in the sexual behavior of adolescents because their proper use avoids the occurrence of problems related to sexual intercourse, while at the same time it is important to educate young health care workers [19]. In the present study, contraceptive use was highly prevalent, both during first sexual intercourse and at the time of the study, with a predominant use of male condom, with no statistically significant difference in the application of these methods between male and female students. The very high percentage was probably due to their better information and the fact that the largest sample in the present study consisted of women, who due to their potentially greater risks of inadequate or no use of contraceptive methods were more careful in their proper application. In Greece, related studies estimate that the frequency of condom use is wide, while its systematic use is recorded, as well as errors in its application. Similar results are reported in international surveys [44-48]. Factors affecting frequency of condom use are gender, age, type of relationship, prevalence of STDs, religion, country of study, economic reasons and access to other contraceptive methods, level of knowledge. Thus, it is reported that countries such as Greece, Turkey, Spain and the Balkan countries have a higher frequency of male condom use (mainly in the first comprehensive sexual intercourse) than the modern northern countries [13,14]. In addition, in terms of gender, in recent years the use of condoms in boys is not significantly different between first and last sex. On the contrary, girls have shown a

gradual decrease in their use, with an increase in contraceptive pills and emergency contraceptive pills (ECPs) [19]. The limitations of the study should be taken into account because the sample was not representative of all people in Thrace but consisted exclusively of DUTH students or teenagers older than 17 years old -who are at the final school classes. The sample also came mainly from urban areas. Thus, it was not possible to determine the degree of influence of the rural environment on sexual behavior (age of onset of sexual intercourse, use of contraception, etc.). In conclusion, the use of contraceptive methods and especially the male condom, which is the main preventive measure in people completing secondary education, is high, protecting young people from potential risks, such as sexually transmitted diseases and unintended pregnancy. Our previous publication referred to general population of Thrace, which compared Muslims and Christ orthodox population reveal that there are behavioral differences between race/ethnic groups and minorities regarding contraceptive practices, probably due to different cultural, socioeconomic and educational factors. This is in contrary to the current study which was conducted only in students with high education level [44-48].

It is true that our study has some limitations, because it includes participants only from the two religious groups of those who study in the Democritus University of Thrace and it investigates the different points of view of each group about induced abortions and contraception. Between these two religious' groups, we have analyzed the perspectives of students' belonging to the Greek Orthodox faith, which is the prevailing religion in Greece. These conclusions are not suitable to be generalized in the general Greek population, as this proportion of Muslims and Christian orthodox students could be found only in the region of Thrace. Nowhere in Greece are there so many Muslim students as in Thrace.

The timing of the study reinforces the reliability of the answers given that respondents were not directly affected by the family and school environment. At the same time, they were not "exposed" to student life, which usually involves greater degrees of freedom in their sexual choices, thus providing important information to health professionals about interventions in this population group. Also given the gradual decline in First Integrated Sexual Intercourse in both subgroups and the potential risks that this sexual behavior may cause, education strategies should begin and focus at an early age, starting at the latter two classes of elementary school.

Targeted intervention will provide adolescents with critical thinking, responsibility, knowledge, in order to prevent unwanted pregnancy in the first Sexual Intercourse by using properly the contraceptive methods and reducing thus the risk of sexually transmitted diseases Young people's sexual behavior is changing constantly reflecting the era, the society in which they live and the education level they acquire [5,19]. Family planning centers provide an effective sexual health service and help especially the young women to have a healthy sex life without sacrificing contraceptive effectiveness.

References

1. Adamczyk A, Valdimarsdóttir M. Understanding Americans' abortion attitudes: The role of the local religious context. *Soc Sci Res* 2018; 71: 129-144.
2. Adedini SA, Babalola S, Ibeawuchi C, Omotoso O, Akiode A, et al. Role of Religious Leaders in Promoting Contraceptive Use in Nigeria: Evidence From the Nigerian Urban Reproductive Health Initiative. *Glob Health Sci Pract* 2018; 6: 500-514.
3. Guiahi M. Religious refusals to long-acting reversible contraceptives in Catholic settings: a call for evidence. *Am J Obstet Gynecol* 2019; S0002-9378: 32691-32692.
4. Alomair N, Alageel S, Davies N, Bailey JV. Factors influencing sexual and reproductive health of Muslim women: a systematic review. *Reprod Health* 2020; 17: 33.
5. Jost TS. Religious freedom and women's health-the litigation on contraception. *N Engl J Med* 2013; 368: 4-6.
6. Vassilikou K. Academy of Athens Elisabeth Ioannidi - Kapolou, National School of Public Health Sex education and sex behaviour in Greek adolescents: a research review Social Cohesion and Development 2014; 9: 143-154.
7. Fakinos M. Sexuality education in Greek schools: Student experience and recommendations. *Journal of Human Sexuality* 2010; 13.
8. Papaioannou V. A Sex and Relationships Health Education project in a Greek senior high school EFL teacher working for the Greek Ministry of Education. 4: 28-35.
9. Gerouki M. Sexuality and relationships education in the Greek primary schools—see no evil, hear no evil, speak no evil. *Sex Education* 2007; 7: 81-100.
10. Tschann M, Soon R. Contraceptive Coverage and the Affordable Care Act. *Obstet Gynecol Clin North Am* 2015; 42: 605-617.
11. Dereuddre R, Van de Velde S, Bracke P. Gender inequality and the 'East-West' divide in contraception: An analysis at the individual, the couple, and the country level. *Soc Sci Med* 2016; 161: 1-12.
12. Hill TD, Rote SM, Ellison CG, Burdette AM. Religious Attendance and Biological Functioning: A Multiple Specification Approach. *J Aging Health* 2014; 26: 766-785.
13. Dia Anagnostou, Anna Triandafyllidou. Regions, minorities and European integration: A case study on Muslims in Western Thrace, Greece Article in Romanian Journal of Political Science. 2007; 1: 100-25.
14. Dereuddre R, Van de Putte B, Bracke P. Ready, Willing, and Able: Contraceptive Use Patterns Across Europe. *Eur J Popul* 2016; 32: 543-573.
15. Ekmekci PE. Abortion in Islamic Ethics, and How it is Perceived in Turkey: A Secular, Muslim Country. *J Relig Health* 2017; 56: 884-895.
16. Shaw FE, Asomugha CN, Conway PH, Rein AS. The Patient Protection and Affordable Care Act: opportunities for prevention and public health. *Lancet* 2014; 384: 75-82.
17. Burdette AM, Haynes SH, Hill TD, Bartkowski JP. Religious variations in perceived infertility and inconsistent contraceptive use among unmarried young adults in the United States. *J Adolesc Health* 2014; 54: 704-709.

18. Ekmekci PE, Arda B. Interculturalism and Informed Consent: Respecting Cultural Differences without Breaching Human Rights. *Cultura* 2017; 14: 159-172.

19. Causes of Visiting Teenagers in the Paediatric and Adolescence Examining Room. 2018.

20. Tsikouras P, Deftereou TE, Chalkidou A, Galazios G. A survey on use of methods & knowledge about contraceptive in married womenZahra Ghodsi , Simin Hojjatoleslami Procedia. *Social and Behavioral Sciences* 2012; 46: 3031-3035.

21. Somba MJ, Mbonile M, Obure J, Mahande MJ. Sexual behaviour, contraceptive knowledge and use among female undergraduates' students of Muhimbili and Dar es Salaam Universities, Tanzania: a cross-sectional study. *BMC Womens Health*. 2014; 14: 94.

22. Arousell J, Carlbom A. Culture and religious beliefs in relation to reproductive health. *Best Pract Res Clin Obstet Gynaecol* 2016; 32: 77-87.

23. Patseadou M, Galli-Tsinopoulou A, Goulis DG, Arvanitidou M. Factors associated with the onset of sexual activity among Greek high school students. *Eur J Contracept Reprod Health Care* 2010; 15: 357-366.

24. Tafuri S, Martinelli D, Germinario C, Prato RA. Study on the sexual and contraception behaviours of the pre-university students in Puglia (South-Italy). *J Prev Med Hyg* 2011; 52: 219-223.

25. Blidaru IE, Furau G, Socolov D. Female Romanian university students' attitudes and perceptions about contraception and motherhood. *Eur J Contracept Reprod Health Care* 2016; 21: 39-48.

26. Ekmekci PE. Do we have a moral responsibility to compensate for vulnerable groups? A discussion on the right to health for LGBT people. *Med Health Care Philos* 2017; 20: 335-341.

27. Asman O. Abortion in Islamic countries-legal and religious aspects. *Med Law* 2004; 23: 73-89.

28. Brockop J. EIslamic ethics of saving life: a comparative perspective. *Med Law* 2002; 21: 225-241.

29. Kridli SA, Libbus K. Contraception in Jordan: a cultural and religious perspective. *Int Nurs Rev* 2001; 48: 144-151.

30. Bardaweel SK, Akour AA, Kilani MV. Current knowledge, attitude, and patterns of oral contraceptives utilization among women in Jordan. *BMC Womens Health* 2015; 15: 117.

31. Kridli SA, Schott-Baer D. Jordanian Muslim women's intention to use oral contraceptives. *Res Theory Nurs Pract* 2004; 18: 345-356.

32. Kridli SA, Newton SE. Jordanian married Muslim women's intentions to use oral contraceptives. *Int Nurs Rev* 2005; 52: 109-114.

33. Atif K, Afsheen A, Naqvi SA, Niazi SA, Ullah Khan H. Trends of contraception among ladies of local population in Pakistan; why, how, when and what? *Pak J Med Sci* 2016; 32: 751-755.

34. Nsubuga H, Sekandi JN, Sempeera H, Makumbi FE. Contraceptive use, knowledge, attitude, perceptions and sexual behavior among female University students in Uganda: a cross-sectional survey. *BMC Womens Health* 2016; 16: 6.

35. Arousell J, Carlbom A, Johnsdotter S, Essén B. Are 'low socioeconomic status' and 'religiousness' barriers to minority women's use of contraception? A qualitative exploration and critique of a common argument in reproductive health research. *Midwifery* 2019; 75: 59-65.

36. Ottesen S, Narring F, Renteria SC, Michaud PA. Emergency contraception among teenagers in Switzerland: a cross-sectional survey on the sexuality of 16- to 20-year-olds. *J Adolesc Health* 2002; 31: 101-110.

37. Nathalie Bajos, Henri Leridon, HeÂleÁne Goulard, Pascale Oustry, Nadine Job-Spira, et al. Contraception: from accessibility to ef®ciency. *Human Reproduction* 2003; 18: 994-999.

38. Chung D, Ferro Luzzi E, Bettoli Musy L, Narring F. Contraception and abortion: an update in 2015. *Rev Med Suisse* 2015;11: 1744-1749.

39. Vlachadis N, Iliodromiti Z, Vlachadi M, Siristatidis C, Deligeoroglou E, et al. Adolescent birth rates in Greece: features and recent unfavourable trends. *Acta Obstet Gynecol Scand* 2014; 93: 121-122.

40. Uecker JE. Social context and sexual intercourse among first-year students at selective colleges and universities in the United States. *Soc Sci Res* 2015; 52: 59-71.

41. Vasilenko SA, Espinosa-Hernández G, Halgunseth L. C Positive and negative perceived consequences of first intercourse among middle and high school students in Puebla, Mexic. *Cult Health Sex* 2016;18: 582-596.

42. Moreau N, Költő A, Young H, Maillochon F, Godeau E. Negative feelings about the timing of first sexual intercourse: findings from the Health Behaviour in School-aged Children study. *Int J Public Health* 2019; 64: 219-227.

43. Narring F, Wydler H, Michaud PA. First sexual intercourse and contraception: a cross-sectional survey on the sexuality of 16-20-year-olds in Switzerland. *Schweiz Med Wochenschr* 2000; 130: 1389-1398.

44. Tsikouras P, Koukouli Z, Psarros N, Manav B, Tsagias N, et al. Contraceptive behaviour of Christian and Muslim teenagers at the time of abortion and post-abortion in Thrace, Greece. *Eur J Contracept Reprod Health Care* 2016; 21: 462-466.

45. Galazios G, Tsikouras P, Liberis V, Koutlaki N, Vlachos G, et al. Attitudes towards contraception in three different populations. *Clin Exp Obstet Gynecol* 2008; 35: 22-26.

46. Galazios G, Tsikouras P, Koutlaki N, Dafopoulos K, Emin M, et al. Attitudes towards male condom use in two different populations in Thrace, Greece. *Eur J Contracept Reprod Health Care* 2004; 9: 34-38.

47. Galazios G, Dafopoulos K, Koutlaki N, Liberis V, Tsikouras P. Attitudes towards contraceptive pill use in two different populations in Thrace, Greece. *Eur J Contracept Reprod Health Care* 2002; 7: 127-131.

48. Galazios G, Emin M, Koutlaki N, Dafopoulos K, Liberis V. Differentiation in contraceptive behaviour of the female population in Thrace, Greece. *Eur J Contracept Reprod Health Care* 2001; 6: 78-86.

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