



**STUDY ON THE USE OF CONTRACEPTIVES AMONG UNIVERSITY STUDENTS IN THE NORTHERN REPUBLIC OF CYPRUS AND CHAD**

**Ditapisa G., Moussa Y and Demirdamar S.R**

European University of Lefke Faculty of Pharmacy Lefke, Northern Cyprus TR-10 Mersin, Turkey

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**ABSTRACT**

Modern methods of contraception have had an important role in preventing unintended pregnancies. Over the past years, the use of emergency contraceptive pills and knowledge among young men and women has gone up at an alarming rate around the world. Even with this recorded improvement, the number of unintended pregnancies among the same category remains elevated and soaring. According to some studies published in October 2019 conducted by the World Health Organization (WHO) in 36 countries around the world, the study concluded that two-thirds of women who are sexually active who had the desire to slow down or limit giving birth ceased using contraception over worries of after-effects, complications, and underrated effects which may decrease their probabilities of childbearing. As young and future pharmacists in the profession, we are concerned and alarmed by the safety and level of awareness of contraceptive use among university students.

This study was conducted among random students on campus, off-campus, and between diverse university student's groups with questionnaires and supported by flyers, this will help to see the big picture and identify the problems early on and how best can they be addressed to reduce the burden related to abortion, unintended pregnancy, infections as well as contraceptives side effects.

It is also meant to measure awareness about contraceptive use and knowledge among university students in The Northern Republic of Cyprus and the University of Pala in Chad. While conducting the study it was noticeable that the level of contraceptive awareness among students left space for more enlightening, with females having more information and knowledge compared to males.

The study suggested that many students still need help and guidance regarding their choice and decision-making process about contraceptive methods and to be made aware of sexually transmitted infections (STI'S) risk. There is, therefore, a need to educate students more leading toward healthier sexual behavior and protecting themselves from sexually transmitted diseases.

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**INTRODUCTION**

Our study is on the use of contraceptives among university students in The Northern Republic of Cyprus and students in The University of Pala in Chad, unintended pregnancies have been on the rise especially among this same group. Contraceptives have been identified as a key intervention in the fight against reducing the consequences of unsafe and unplanned sexual acts and pregnancies, the same pregnancies which have been linked with increased risk of unsafe abortions, mortality, and maternal health complications (Summers C. Guttmacher, 2013). The study continues to outline that contraceptives not being openly discussed among young unmarried individuals due to certain traditions, values, cultures which see pregnancy out of wedlock as an abominable act. As such, many unintended pregnancies lead to unsafe, illegal, and unsupervised abortion services decided out of societal rather than personal judgment. Around the world unplanned pregnancies have been approximated at about 80 million every year (Speidel, Harper and Shield, 2008), these are alarming numbers.

In this number, most of the unwanted pregnancies are allocated to the youth mostly still in school, and these end up in unsafe abortions which are the major direct cause of maternal mortality and complications.

Universities normally have students of all ages ranging from 18 years and older, some still teenagers, and these teenagers getting pregnant puts them at risk of suffering from economic and social consequences because the chance of them leaving school and discontinuing their education is very high (SahinNH, 2007). Without highly demanded education qualifications needed to secure comfortably paying jobs, they end up only settling for average paying jobs; this decreases their quality of life. In Turkey, 3.9% of the female community compared to 6.6% of the male community has a university education (NevinHotunSahin, 2007) this points out how we are losing our females to motherhood before they reach their desired education level and achieve their goals. This also influences the number of women in high positions and high unemployment rates within women groups compared to men groups.

A lot of young students are in denial when it comes to the use of contraceptives. A survey on undergraduate female population concluded that sexually active women tended to see

*\*Corresponding author: Ditapisa G*

European University of Lefke Faculty of Pharmacy Lefke, Northern Cyprus TR-10 Mersin, Turkey

themselves improbable to become pregnant compared to other female students, their age mates, or any female capable of childbearing (Allgeir A.R, 1983) therefore the need to continually educate is important. Not only should the focus be on women, but men should also be included in this discussion, it is important to establish the significance of sustaining male contribution and their influence in all levels of sexual and reproductive health especially in advancing community where equal opportunities between both genders are encouraged (Genderhealth.org, 1994). They need to be made to understand that it is not only a woman's responsibility to instigate contraception use, but the responsibility also falls between both genders with men being equally responsible.

People are always skeptical about using contraceptives for many reasons. Misinformation, traditions, myths, pain level, and misleading information sources are a few reasons listed as discouraging factors to contraceptive use. For many adolescents, worries about their well-being may be the basis for them not to commence oral contraceptives or to suspend their use when aftereffects arise (D.Serfaty, 1997). Even though contraceptive use benefits have been reported, significant analysis over their safety in the long-haul has been in question; this includes possibilities of carcinogenesis, cardiovascular diseases, osteoporosis, and adverse metabolic effects. Notable adverse effects being menstrual disorders like amenorrhea, vaginal bleeding, hypertension, weight gain, and menorrhoea. (Charles O. Njoku *et al.*, 2016). Other researchers noted that randomized clinical trials and several other studies found out that one-third of women who take oral contraceptives experience bleeding somewhere in between their periods either as a one-time off event or a reoccurring one (Paula J. Adams Hillard MD, 1989). However, benefits have been found to outweigh the complications hence encouraged use. Therefore, education on side effects should also be highlighted so people could choose a more suitable method for their lifestyle with lesser side effects.

More studies should also be conducted on non-compliance and the reasons why people choose not to use contraceptives so that solutions could be investigated to mitigate the problem. More new methods of contraceptives should be explained well to the public because old methods have fallen out with the population. Also, it has been found that not enough people use condoms due to its failure, allergy fears, religions, traditional beliefs, and new methods that are perceived easier and more convenient overtime, while having numerous partners is becoming more of a trend within socio-cultural change and more young people choose to delay getting married to chase their dreams and get an education instead (Kim, De La Rosa, Trepka and Kelley, 2007). The youth and the sexually active students need to understand that contraceptive methods are not 100% effective; most range from 99-99.9% effectiveness which still leaves a 1-0.1% chance of failure which can still lead to possible unplanned pregnancies. It is always advised to use concurrent contraceptive methods like using condoms together with the pill, injections, patches, implants, and intrauterine device (IUD) to have sex safer. Using them together can also effectively reduce the risk of pregnancy as well as limit the spreading of sexually transmitted infections. Therefore, discuss with a health official which method can be concurrently used safely together and choose those that fit your lifestyle.

The risk of failure of contraceptive methods should also be discussed and what can be done to remedy the situation. A study was made in Tampere University about people who use emergency contraception around the years 2000-2001; two-thirds of participants expressed that they had experienced condom failure and for that reason needed emergency contraception (Virjo and Virtala, 2003). Emergency contraception is essential in these cases and can be taken 48 hours after unprotected sex or a failed contraceptive method to protect against pregnancies. Common emergency contraceptive pills are all available in the TRNC. According to John Guillebaud, older women because of their experience have lower contraceptive failure rates compared to younger women because they are deemed relatively inexperienced, but also because younger women have intercourse on a more regular basis, their fertility is still high, and they frequently stop and switch contraceptive methods (J. Guillebaud, 1994). In other studies, conclusive results suggest external reasons for contraceptive failure, in one study they suggest that being morbidly obese may escalate the chance of being with child if oral contraceptive methods are used. This is because recent studies showed weight and measure of body fat based on height and weight may affect steroid hormone metabolism and conversion in fat and adjust hormonal contraceptive potency, in the mentioned trials subjects who weighed 90kg or more were found to account for 33% of path-associated pregnancies (Holt *et al.*, 2005).

Another study suggested that it depends on the contraceptive method you use, whether short term, intermediate or long term. It outlines that in a period of 12-months failure rates for longer-acting contraceptive methods such as implants, IUD'S were the lowest, an intermediary for oral contraceptive pills which are short term, and highest among users of customary methods such as withdrawal or periodic abstinence (Chelsea B. Polis *et al.*, 2016). As for James Trussel, he came up with a measure of how we can come up with contraceptive probability failure rates; he suggests the estimates are considered after evaluating chances of failure during typical correct and incorrect use and perfect, correct, and consistent use differences. He concludes that comparison between the probabilities would reveal the repercussions of incorrect use (James Trussel, 2011).

The students need to know that unintended pregnancies can be intercepted by correct contraceptive methods use such as condoms, the oral contraceptive pill, and hormonal injections among others, and only if they are used correctly according to instructions. There is also emergency contraception that is used 72 hours after any unprotected sexual intimacy. Education on the consequences of misuse should also be made clear. Some trends have been analyzed that included a surge in oral contraceptive use among seniors; as compared to newly arriving students (David M Siegel M.D, Debora Klein B.A, Klaus J Roghmann Ph.D. 1999) this motivates the initiative towards the freshmen contraceptive education agenda. However not only freshmen but all students who feel they need more information. This is in line with the objectives of our study which are to educate, measure awareness levels and contraceptive use among university students.

## **METHODOLOGY**

### ***Objective***

Pharmacists are the first and most accessible health professionals who are trained and equipped with the knowledge and best placed to identify and help the community with problems related to the safety of medications, pills, advice on side effects to be expected, contraceptive methods counseling.

The project aims to educate students on the safe use of contraceptives in both universities, provide more information on contraceptive methods, their safety, knowledge of their side effects, and the responsibility that each person has towards the implementation of their use. Taking in mind that most international students may lack proper information on where to access it, whom to ask and what is available to use due to language barriers, new environment, and procedures among other reasons.

### ***Study design and setting***

A collection of data by the analytic study as part of the ongoing research on the safe use of contraceptives among university students was conducted in two different countries and continents. Our pilot data collection was set out and conducted in the Turkish Republic of Northern Cyprus and Chad at our university and The University of Pala (the Mayo Kebbi region) respectively, during February and March 2020.

### ***Study population and sample size***

Our study included both undergraduate and postgraduates registered on the main campus. Diverse groups of students from different backgrounds, faculties, origin and from all levels of education were the main target. We had to use online-based questionnaires using google forms due to the outbreak of the pandemic in the Turkish Republic of Cyprus. But, for the questionnaires conducted at the University of Pala, we were able to do it physically, face to face with participants on campus and we were able to make some interviews and take notes from their impressions. The number of registered university students is currently 11000 with 850 international students and 10150 domestic students in the TRNC whereas in Chad the number of registered university students at the University of Pala is currently around 3 thousand, almost all being domestic students. A minimum sample size of 162 was obtained for the study using the survey monkey sample size calculator in the TRNC and 185 used as the sample size in Chad.

### ***Data collection***

Simple random sampling method was used, first at strategically populated points and when more responses were needed technology was used in terms of online surveys. It was a self-administered questionnaire first given for pre-testing to 20 students to identify gaps and modify the questionnaires. These students were then not included in the main study as participants so the information derived cannot be compromised and be more accurate. Strategic placement of the survey link in populated student's social media groups was made possible and sending to multiple friends to send to their friends was how we got our responses in the TRNC. In Chad we had the opportunities to conduct interviews and get answers straight from sources mouth with the opportunity to get explained responses not limited by misunderstandings.

### ***Data analysis***

The data was analyzed using the Statistical Package for Social Science (SPSS). Descriptive statistics were summarized into numbers and sexual behaviors were examined concerning contraceptive use among university students. Our Cronbach's alpha fell within the acceptable rate which is a coefficient of reliability or a measure of consistency. Google forms also helped analyze the data from the survey into readable percentages and graphs for easy interpretation and analysis.

### ***Inclusion and exclusion criteria***

Every student was informed about the study and each student was asked for his/her consent before adding them as part of the participants. Confidentiality was ensured using anonymous questionnaires where respondents were not asked to provide any name and preferences which could identify them. Participants were also enlightened about the category of the study carried out and their rights to pull out from it if they felt it exposed them or their right to confidentiality.

### ***The instrument***

The questionnaire consisted of questions aimed to assess participant's knowledge of contraceptive use, source of information, known types and methods of contraceptives, and methods the participant is currently using. The attitude of responders about safe contraceptive use was assessed using the Yes/No type of scale; fill in the blank, and multiple choice questions to evaluate their genuine perceptions on the matter. Others had multiple answers requesting respondents to indicate where they learned about contraception and where they can get some.

## **RESULTS**

A total of 162 students completed the questionnaires in the TRNC and 185 in Chad. Out of 162 respondents from TRNC, the majority of 50% were of ages 23-28 while Chad had only 42.7% between ages 19-22 years of age. Awareness levels looked very good in TRNC with 93.8% indicating knowledge of contraceptives while Chad only had 61.1% knowledge levels indicated. The internet with 53.1% in TRNC was highlighted as the main known source of information on contraceptives for most of the responses while in Chad 45.5% indicated their source of information as the hospital. The majority of 58.6% in TRNC indicated they were in relationships and sexually active but only 48.8% of them understand that contraceptives are not 100% safe and effective. Compared to Chad who have 53% indicated sexually active respondents and out of them 62.2% are aware that contraceptives are not 100% safe and effective. A good number of 89.5% in TRNC showed they think it's both genders' responsibility to know about contraceptives whereas in Chad 50.3% understand it is both gender's responsibility in contraceptive use. In TRNC 90.7% respondents get their contraceptives from the pharmacy and the majority of 45.5% in Chad get theirs from the hospital, these are the differences to be noted down.

From Table 1. below, we can see that a very high percentage (93.8%) of participants from our university do know or at least heard about contraception compared to (61.1%) of participants from the University of Pala.

**Table 1** awareness about contraception of the Respondents in (%)

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	152	93.8	93.8	93.8
No	4	2.5	2.5	96.3
Maybe	5	3.1	3.1	99.4
No idea	1	.6	.6	100.0
Yes	162	100.0	100.0	
University of Pala				
	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	113	61.1	62.4	62.4
No	35	18.9	19.3	81.8
Maybe	19	10.3	10.5	92.3
No idea	14	7.6	7.7	100.0
Total	178	96.2	100.0	

**Table 2** level of contraception usage of Respondents in (%)

Our University				
	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	66	40.7	40.7	40.7
No	96	59.3	59.3	100.0
Maybe	162	100.0	100.0	
University of Pala				
	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	69	37.3	39.7	39.7
No	104	56.2	59.8	99.4
Maybe	1	.5	.6	100.0
Total	185	100.0		

With the highest awareness rate about contraception, still a high percentage of participants from our university (59.3%) do not use any contraception compared to University of Pala (56.2%) where knowledge and access to contraception is very low and restricted.

Below, we can see that only (37.3%) of participants do use contraception from the University of Pala and (40.7%) only from our university do use contraception.

**DISCUSSION**

Knowledge and use of contraceptives have a great socio-economic impact on the country and a prerequisite for development; different interventions have been implemented by the government and non-governmental organizations in Chad. Messages are sometimes passed through mass media like TV, radio, and written media on reproductive health services like the provision of contraceptives. An assessment of the awareness of adolescents about contraception has indicated that almost all women and men know at least one method of contraceptives represented by 97% and 98% respectively. Unmarried sexually active women and men have a better knowledge than the rest of the population with 99.8% and 99.9% respectively (DHS 2011: 93-94).

So often, women do not feel welcome and feel judged, they feel people will look at them and label them loose, and then there will not be any respect towards them whenever they are seen seeking information on contraception and available contraceptive services. Among many of family planning programs in Africa, there is an unmet offer to contraception to women in particular the adolescents but in many others, it is banned. Other countries only give access to married women. Due to the international conference on population and development in Cairo in 1994, consistent efforts have been

made to resolve this issue by the establishment of informative programs of education and communication to reach out to the most abandoned groups.

Cultural and societal norms are one of the main barriers to contraception in Chad. A review of the literature published about contraception use in Asia found that lack of knowledge about contraceptive methods and sexual education in general contributes to high rates of unintended pregnancy in the region (Najafi-Sharjabad *et al.*, 2013). People do not talk about contraception and those who do are frowned upon because most ethnics encourage childbearing and look at it as a form of wealth so any hindrance to that idea is often not welcome. A lot of women are also given up for marriages at young ages therefore they often do not have much of a say or control over contraception and if they do, they fear speaking out in case they are labelled promiscuous.

The situation about contraception being not well understood here in Chad is a big problem, even among married couples' contraception is not used and seen as something that is taboo. Couples do not have open and real conversations about the matter but its importance in helping couples decide when to conceive, spacing of birth or limit the number of children is well highlighted. Countries and communities with a better level of contraception usage and awareness have a more stable economy and control over their population growth as compared to countries with low level of awareness or which do not have access to contraception, especially the sub-Saharan African countries. In sub-Saharan countries such as Chad, the rate of an unintended pregnancy and abortion was found to be high. The practice of illegal and unsafe abortion in current has become more popular. Unintended pregnancies are expensive to the society and result in poorer health outcomes for the women and the infants. Women in the following groups have the highest rates of unintended pregnancies: aged 20-24; unmarried and co-habiting; income below the poverty level; educational level less than a high school diploma.

With information obtained from local health districts and antiretroviral distribution points, it showed that the rate of sexually transmitted infections especially HIV and AIDS, syphilis and gonorrhea is high. These infections are accelerated mainly by unprotected sexual behaviors and arranged marriages mainly in the rural areas and lack of awareness.

Although with a very limited access to contraception, we can depict from our study that the very little percentage of students that know about contraception and are using it are high and more as compared to students from our university, they also have more access and resources of information about contraceptives. There is also a need to change mentality of students, especially at the University of Pala who had many people who still need to learn that the responsibility about contraception knowledge does not only apply to girls but to both genders. Education about contraception knowledge and raising awareness about contraception in learning environment to promote safe sex practice is encouraged and suggested to lower consequences of not knowing about them in Chad.

**CONCLUSION**

Our study found out that the level of awareness and knowledge about contraceptive levels was good but correct contraceptive use and compliance was still not satisfactory. Responsibility

roles, acceptability, and benefits of contraceptive use knowledge were worrisome, and our results showed they were not aware of side effects or even effective rates of some contraceptive methods. Sexual practices of some respondents like those who said they use the withdrawal method can still put them at risk of unplanned pregnancies and sexually transmitted infections. Some research suggested that women who want to control childbirth and steer clear of infections also face secondary distress over some highly effective contraceptive methods which could elevate chances of certain sexually transmitted microorganisms. They mention that hormonal contraception could act through several mechanisms to make it easy to acquire Human Immunodeficiency Virus and other STI'S by triggering a mechanism that results in diminishing of the vaginal epithelium and reducing the manufacturing of lactobacilli that is responsible for pH balance in the vagina (Charles S. Morrison MPH, PhD. *et al.*, 2009). Although it has also pointed out that published studies show condom use statistics significantly protecting men and women against several other types of STI'S including gonorrhea, chlamydia infection, herpes simplex virus type 2, and syphilis (King K. Holmes *et al.*, 2004), with all this information we need to understand that each contraceptive method is different, works differently and has different advantages and disadvantages and not all cover both birth control means and prevention of the spread of sexually transmitted infections.

Correct use of the commonly used methods like condoms and contraceptive pills should be emphasized and more encouraged to be safe. Both university managements in partnership with the health sector should work towards a partnership that encourages good sexual behaviors and practices, health education, and reproductive health through workshops. Increased and easy accessibility of contraceptive services to all who desire to use them and counseling services to those who ask for them should be made easily available and encouraged not shamed or shunned. Cultural leaders also need to be involved in this fight as an initiative to break through to people in rural areas in Chad that cannot be reached easily. Rigid cultural norms and values need to be re-evaluated and in cases that they cannot be wiped out at least negotiated to reach a reasonable solution. Dual protection is suggested as the solution to reinforce that people are protected against both STI and pregnancies.

And from the pharmacist's questionnaires, the information obtained can conclude that pharmacists need to improve communication about contraceptives and be actively involved in making sure the correct information reaches the youth.

Students and youth also have a role to play and a long way to go in making sure they are well informed and ask the right questions when it comes to contraceptive use. It is not only left to one group, but contraceptive use is also a topic that students, pharmacists, and other health providers like gynecologists need to come together to raise more awareness about. Together we can make a difference.

### **Limitations**

Information used in the study was from students who were self-reporting, which can leave space for bias reports and omission of some information about themselves. This was minimized by clearing out that the study was confidential and that no one will know it is them. Only one university was used in both countries which may differ if more universities on the

island and in Chad were involved it might have expanded our perspectives. English was used as the main language, other international students from non-English speaking countries who may not understand English may not have understood all the questions. In Chad we had to translate all our work to French which is the local language so that our target students would understand better.

### **Challenges**

As we were conducting our research we went through some minor tests, some of this included non-cooperation from targeted respondent groups from both students and pharmacists. Our research was also continued through the COVID-19 pandemic therefore restrictions put into place to curb the virus limited the interactions we could have had and some pharmacies were too busy to have some time to assist. We had to conduct our surveys online since curfews and quarantine was established in the TRNC and online surveys provide no way of monitoring or explaining any misunderstood questions which may affect some of the results obtained. In Chad it was not easy to get information out of our respondents they always had to be convinced and reassured before deciding to answer the questions, it took some time to gather information.

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