

A Descriptive Cross Sectional Study about Knowledge, Attitude, and Practice on Contraceptives among Freshman Degree Students in Eritrean Institute of Technology, 2019.

Idris Mohammed Idris^{1*}, Samuel Jirom Wolday², Abel Weldetsion Fessehatsion², Daniel Yemane Haile², Majid Yassin Ibrahim², Rodas Fitwi Adgoy², Rose Solomon Haile², Amanuel Tesfamariam Ghebremariam²

¹ Department of Anesthesia, Eritrean Air Force Hospital

² Department of Nursing, Asmara College of Health Sciences, Asmara, Eritrea

*Corresponding Author: Idris Mohammed Email: idrismd2017@gmail.com

ABSTRACT:-

Back ground: Contraception is a means of birth control by regimen of one or more actions, devices, sexual practices, or medications followed in order to deliberately prevent or reduce the likelihood of pregnancy or childbirth.

Purpose/objective: The researchers aimed to explore the knowledge, attitude, and practice on contraceptives among freshman degree students in Eritrean Institute of Technology (EIT).

Methods: A cross-sectional descriptive study design was used to assess the knowledge, attitude and practice on contraceptives among freshman degree students in Eritrean Institute of Technology. Using Daniel's formula, a sample of 270 students participated in the study and information regarding their Knowledge, Attitude and Practice on contraceptives obtained using self-administered pretested structured questionnaire. An ethical consent was sought out from the study participants. Significant associated variables were further analyzed using logistic regression analysis.

Results: Almost ten percent (9.6%) of the participants ever used contraceptives, in which condom was mainly used. knowledge about contraceptives was poor (45.2%) where the major (78.9%) source of the information was school. Majority (88%) of the respondents had a positive attitude towards contraceptives.

Conclusion: Magnitude of current contraceptive usage is low. The study highlights that knowledge and awareness do not always lead to a positive attitude towards the use of contraceptives. The knowledge about contraceptives was poor but majority had positive attitude towards contraceptives. A significant relationship was established among the contraceptive users with their age.

KEY WORDS:- Knowledge, Attitude, practice, contraceptive, freshman degree students

I. INTRODUCTION

Contraceptive use is the expression of individual desire to space or to limit birth. The proportion of young women reporting unintended pregnancy and unmet need for contraception remains high in developing countries [1]. Unintended pregnancies are associated with increased risk of unsafe abortions, maternal morbidity and mortality [2]. In order to avert the unintended pregnancies and consequent adverse outcomes, contraceptive use has been prioritized as a key intervention [3]. Improving the universal access to sexual and reproductive health services including contraceptives was a key target of the Millennium Development Goal (MDG) [4]. In developing countries, one in three women gives birth before the age of 20 and pregnancy-related death during child birth is two times higher compared to women older than 20 years. A quarter of the estimated 20 million unsafe abortions and 70,000 related deaths each year occur among women aged 15–19 years [5]. In sub-Saharan Africa alone, it is estimated that 14 million unintended pregnancies occur every year, with almost half occurring among women aged 15–24 years [6]. It is evident that use of effective contraceptive methods would potentially prevent 90 percent of abortions, 20 percent pregnancy-related morbidity and a third (32 %) of maternal deaths worldwide [4].

Overall, the use of contraceptives is not openly discussed among young unmarried women due to strong cultural and religious beliefs, which exposes the young women to the increased risk of unwanted/unintended pregnancies. In many African traditional culture settings, pregnancy before marriage is often viewed as an abomination. As such, many unmarried females who get unintended pregnancies seek abortions services for fear of societal judgment. Abortion in being illegal increases the risk of maternal deaths because it is usually unsafe and at times conducted by traditional herbalists [7].

According to WHO [8], an analysis of data on unsafe abortion by age indicates that two-thirds occur among women aged between 15 and 30 years. More importantly from a public health perspective, 2.5 million (almost 14%), of all unsafe abortions in developing countries are among women under 20 years of age. The proportion of women aged 15–19 years in Africa who have had an unsafe abortion is higher than in any other region; almost 60 percent of unsafe abortions are among women aged less than 25 and almost 80 percent are among women below 30 years of age. This contrasts with Asia where 30 percent of unsafe abortions are in women less than 25 and 60 percent are in women under 30. In Latin America and the Caribbean, women aged 20–29 years account for more than half of all unsafe abortions with almost 70 percent of unsafe abortions being carried out on women below 30, demonstrating an age pattern intermediate between those for Africa and Asia [8].

A similar study [8], stated that the high birth rate among American teenagers is a major source of social and political concern in the country because of evidence that childbearing during adolescence seriously jeopardizes the quality of life of most young parents and their children. In comparing use of such methods in nationwide samples of sexually experienced adolescent girls, teenagers in the USA reported less use of contraceptive pills, injectable, implants, and intrauterine devices at most recent sex (42%) than did girls from Canada (64%), France (50%), and the UK (69%). In the developing world, use of medical contraceptive methods is substantially lower among adolescent girls than in adult women. In sub-Saharan Africa, very small proportions of unmarried, sexually experienced girls aged 15–19 years used medical contraceptive methods at most recent sex (for example, 4% in Benin, 10.7% in Kenya, 12.4% in Mali, 8% in Uganda, and 5.2% in Zimbabwe [8]. As there was no prior research in our country (Eritrea) addressing the specific topic, the researchers aimed to explore the knowledge, attitude, and practice on contraceptives among freshman degree students in Eritrean Institute of Technology (EIT).

II. METHODS

A cross-sectional descriptive study design was used to assess the knowledge, attitude and practice on contraceptives among freshman degree students in Eritrean Institute of Technology (EIT) from March to May 2019.

Sample size estimation and Sampling Method

The study was conducted among approximately 900 freshman degree students in EIT and 270 participants were included in the sample. A systematic random sampling was used for selecting the participants and the sample size was calculated using Daniel's formula

Data Collection Techniques and Tools

A self-developed questionnaire was used and data was collected from 16-21 March, 2019 using self-administered pretested questionnaire. The questions were styled to extract information about college student's knowledge, attitude and practice on contraceptives.

Pilot study was conducted on freshman diploma students in Asmara College of Health Sciences (ACHS) on 4th March, 2019. Thirty students participated and no gaps were found to be amended.

Data Analysis Method

After collection of the data, the variables (responses) were coded and entered into SPSS software version 22 and cleaned. Descriptive statistics was used to compare results among the study groups using frequency distribution count, percentages, and cross tabulation. Association between practice, attitude, knowledge levels and socio demographic characteristics was carried out using logistic regression analysis. Statistical significance was maintained when P value is <0.05 and confidence interval of 95%. The respondent's level of knowledge and attitude was determined using a scoring system and the total knowledge and attitude was categorized as follows: scores of 0 - 49% = negative attitude, poor knowledge and 50 -100% = positive attitude, good knowledge .

Study setting

The study was conducted in EIT,. EIT is located 25 Kms southwest of the capital city, Asmara. It comprises of three colleges: college of education, college of engineering and college of science. It was established in 2004 and it has worked for about 15 years. It also gives freshman programs to both diploma and degree students. There were 900 freshman degree students for the academic year 2018/2019. Out of this, 550 were males and 350 were females and thus the sample was selected according to the proportion.

Ethical Clearance

For ensuring the privacy of respondents and preventing violation of human rights, the proposal was approved at the ACHS and Ministry of Health Scientific and Research Ethical Committee. After securing

permission from ACHS and the MoH, letter of support was sent to EIT for allowing data collection. Informed consent was obtained from each respondent after a thorough explanation of the aim and potential benefits of participating in the study was given, and written consent was signed by the students. Anonymity and confidentiality were ensured in that the respondent's name will not appear on the questionnaire, and information will not be shared with people known to participants.

III. RESULTS

Table 1: Socio demographic characteristics of the study population (N=270)

Variable	Number	Percent
Age		
17-19	226	83.7
20-22	44	16.3
Gender		
Female	105	38.9
Male	165	61.1
Religion		
Islam	239	88.5
Christian	31	11.5
Ethnicity		
Afar	5	1.9
Saho	4	1.5
Tigre	21	7.8
Tigrigna	240	88.9
Total	270	100

Knowledge Results

Based on the scoring method (A score of 0-49% was considered as poor knowledge and 50-100% was considered as good), majority 148(54.8%) of the respondents were considered to have a poor level of knowledge, whereas, the rest (45.2%) were considered to have a good level of knowledge about contraceptive methods (figure-1). The source of information on knowledge of contraception was mostly from schools (78.9%) followed by media (14.1%) and friends (7%).

Figure 1: Participants level of knowledge about contraceptives

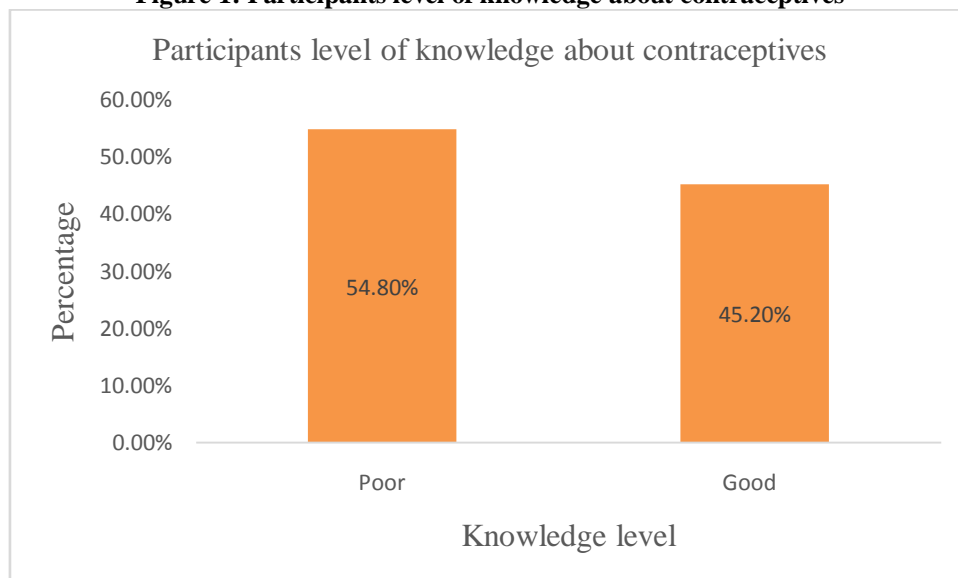


Table 2: Study participants' knowledge about contraceptives (N=270)

Statements		No.	%
Have you ever heard of contraceptive methods?	Yes	270	100%
	No	0	0%
Which of the following contraceptives is used by both sexes?	Pills	32	11.9%
	Injectable	39	14.4%
	Condom	164	60.7%
	IUD	35	13%
Which of the following contraceptives is used permanently?	Foaming Tablet	81	30%
	Tubectomy	65	24.10%
	Coitus Interruptus	58	21.5%
	Diaphragm	66	24.4%
Are all contraceptives 100% effective?	Yes	28	10.4%
	No	242	89.6%
What is the primary aim of using contraceptives?	To prevent pregnancy	97	35.90%
	Spacing childbirth	55	20.4%
	To prevent STDs	118	43.70%
The disadvantage of using condom is	Local pain/ irritation	106	39.3%
	High risk of tear	92	34.10%
	Sexual dissatisfaction	72	26.7 %

Table-2 illustrates the main questions asked to explore the knowledge level of the participants about contraceptives.

Table 3: Socio demographic Characteristics Associated with Participants Level of Knowledge (based on the scoring system)

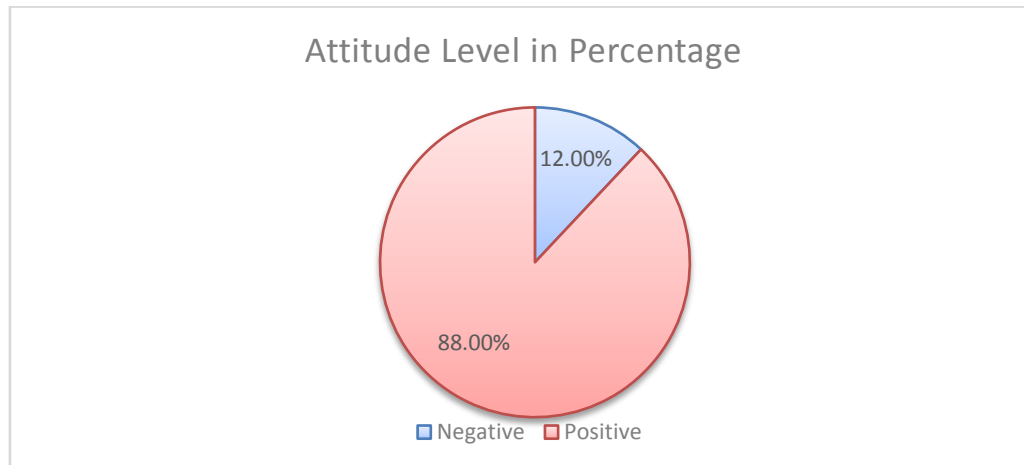
Variable	Good(%)	Poor(%)	Total(%)	P-value
Age				
17-19*	102(83.6%)	124(83.8%)	226(83.7%)	0.969
20-22	20(16.4%)	24(16.2%)	44(16.3%)	
Gender				
Female*	52(42.6%)	53(35.8%)	105(38.9%)	0.245
Male	70(57.4)	95(64.2%)	165(61.1%)	
Religion				
Moslem	110(90.2%)	129(87.2%)	239(88.5%)	0.443
Christian*	12(9.8%)	19(12.8%)	31(11.5%)	
Ethnicity				
Afar	1(0.8%)	4(2.7%)	5(1.9%)	0.121
Saho	1(0.8%)	3(2.0%)	4(1.5%)	
Tigre	8(6.6%)	13(8.8%)	21(7.8%)	
Tigrigna*	112(91.8%)	128(86.5%)	240(88.9%)	
Total	85(100%)	185(100%)	270(100%)	

**indicates reference category*

As table-3 indicates, there was no significant association between Socio-demographic factors and the knowledge level of the participants towards contraceptives.

Attitude Results

Figure 2: Attitude Level of Study Participants (N=270)



Based on the scoring method (A score of 0-49% was considered as negative attitude and 50-100% was considered as positive attitude), Majority (88%) of the participants had positive attitude towards contraceptive usage (figure-2).

Table 4: Study participants' Attitude about contraception (N=270)

Attitude Statements		N	%
Do you think both sexes should be responsible for contraceptives?	Agree	190	70.4%
	Disagree	42	15.6%
	Neutral	38	14.0%
Do you agree to use contraceptives during sexual intercourse before marriage?	Agree	57	21.1%
	Disagree	180	66.7%
	Neutral	33	12.2%
Do you think that contraceptives are beneficial?	Agree	212	78.5%
	Disagree	41	15.2%
	Neutral	17	6.3%
Do you think that using contraceptives is a sin?	Agree	35	13.0%
	Disagree	216	80.0%
	Neutral	19	7.0%
Do you think that contraceptive methods should be readily available at college?	Agree	64	23.7%
	Disagree	176	65.2%
	Neutral	30	11.1%

Table-4 illustrates the main questions asked to explore the attitude level of the participants towards contraceptives.

Table 5: Participants' Socio demographic characteristics association with their Attitude

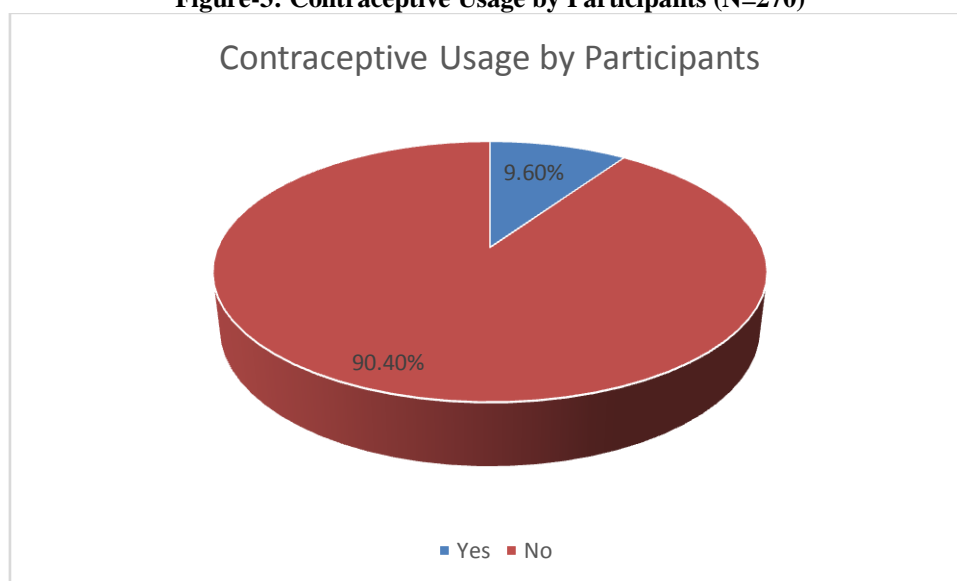
Variable	Positive (%)	Negative(%)	Total(%)	P-value
Age				
17-19*	197(82.8%)	29(90.6%)	226(83.7%)	0.267
20-22	41 (17.2%)	3(9.4%)	44(16.3%)	
Gender				
Female*	50(42%)	55(36.4%)	105(38.9%)	0.173
Male	69(58%)	96(63.6%)	165(61.1%)	
Religion				
Islam	112(94.1%)	127(84.1%)	239(88.5%)	0.847
Christian*	7(5.9%)	24(15.9%)	31(11.5%)	
Ethnicity				
Afar	1(0.8%)	4(2.6%)	5(1.9%)	0.666
Saho	1(0.8%)	3(2.0%)	4(1.5%)	
Tigre	6(5.0%)	15(9.9%)	21(7.8%)	
Tigrigna*	111(93.3%)	129(85.4%)	240(88.9%)	

*indicates reference category

There was no significant association between Socio-demographic factors and the attitude level of the participants towards contraceptives (table-5).

Practice Results

Figure-3: Contraceptive Usage by Participants (N=270)



As indicated in figure-3, participants were asked if they ever used contraceptives and 90.4 percent stated that they never used while the remaining 9.6 percent said yes. Majority (84.6%) were using condom and the rest (15.4%) had utilized pills. Only 34.6% of the users were taking the contraceptives from health facility whereas the majority (65.4%) were taking it (particularly) condom from shops.

Results on accessibility of contraceptives indicated that, majority of the respondents 225(83.3%) have mentioned that contraceptives are accessible while 45 (16.7%) responded for lack of accessible contraceptives.

Table 6: Study Participants Main Reasons for not Using Any Contraceptive Method (N=244)

	Frequency	Percentage
It decreases satisfaction	18	7.4%
Not accessible	43	17.6%
Not affordable	13	5.3%
It is a sin	40	16.4%
Not involved in sexual intercourse	130	53.3%
Total	244	100%

Study participants' readiness for contraceptives usage in the future showed that,152(56.3%) respondents, said that they are ready to use contraceptives in the future, whereas the others 118(43%) said they are not ready due to different reasons mentioned above in table-6. From those who planned to use contraceptives in the future, 107 (70.4%) planned to use condom followed by pills 32(21.1%) and Inject able method 13(8.5%).

Table 7: Socio Demographic Variables Associated With Contraceptive Usage (N=270)

Variable	Yes(%)	No(%)	Total(%)	P-value
Age				
17-19*	18(69.2%)	208(85.2%)	226(83.7%)	0.041
20-22	8(30.8%)	36(14.8%)	44(16.3%)	
Gender				
Female*	6(23.1%)	99(40.6%)	105(38.9%)	0.200
Male	20(76.9%)	145(59.4%)	165(61.1%)	
Religion				
Moslem	5(19.2%)	26(10.7%)	31(88.5%)	0.076
Christian*	21(80.8%)	218(89.3%)	239(11.5%)	
Ethnicity				

Afar	1(3.8%)	4(1.6%)	5(1.9%)	0.089
Saho	1(3.8%)	3(1.2%)	4(1.5%)	
Tigre	4(15.4%)	17(7.0%)	21(7.8%)	
Tigrigna*	20(76.9%)	220(90.2%)	240(88.9%)	
Total	(100%)	(100%)	270(100%)	

**indicates reference category*

As table-7 shows, there was no significant association between most of the socio demographic variables and contraceptive usage by the participants except age of participants ($P < 0.05$). Those who were 20-22 had partially significant practice compared to ages 17-19.

IV. DISCUSSION

In this study almost ninety percent (89.6%) of the respondents stated that contraceptives are 100% effective however, only 26 (9.6%) had used condoms 22 (84.6%) and pills 4(15.4%) respectively. The source of information about the contraceptives in the present study was school (79%) which had played the most important role in spreading awareness about contraceptive methods among the students followed by (14%) from media and (7%) from friends. The participants who were asked about the primary aim of contraceptives, (35.9%) answered it correctly as “to prevent pregnancy”. In this study, 122(45.2%) of the respondents had good knowledge.

Surprisingly, this study has identified that study participants’ knowledge on contraceptives used by females and males is low. When study participants were asked which method of contraceptives is used by both sexes nearly 61 percent (60.7%) of the respondents mentioned condom as being used by both sexes. Injectable, IUD and pills were also mentioned to be used by both sexes as (14.4%), (13%) and (11.9%) respectively compared to a study conducted among female University students in Uganda in 2014, where knowledge of any contraceptives was almost universal (99.6 %) [7].

This study indicated that (24.1%) of the participants mentioned tubectomy as a permanent method of contraceptive which was much lower than a study by (Gollakota, Mylavarapu, & Padmavathi, 2015,) in which more than half of them knew about it as a permanent method[9].

In this study (78.5%) of the respondents agreed that contraceptives are beneficial and majority (88%) of the participants had positive attitude There was a low level (21.2%) of practices regarding contraceptives among the female university students with the majority of the students had a positive attitude towards using contraceptives [10] which was consistent with this study in which (9.6%) were users and majority (88%) with positive attitude

This study showed 7.4% male contraceptive users. This value is much lower than the EPHS survey conducted in [11] (27.2%) in Eritrea, [12] (18%), [13] (11%), [14] (12.3%), [15] and by [16] (19%).

V. CONCLUSION

In conclusion, the results of this study have shed light on knowledge, attitude and practice on contraceptives among freshman degree students in Eritrean Institute of Technology.

Findings of this study confirmed contraceptive users were 9.6%. Condom use has gone up markedly while other contraceptive methods usage was extremely very low. A significant relationship was established among the contraceptive users with their age. Majority of the respondents had a positive attitude and almost half of them had good knowledge toward contraceptives.

Recommendations

This study identified that college students’ knowledge & practice on contraceptive methods is very low. Therefore, based on the study findings, the researchers recommend the following:

- The main source of knowledge on contraceptives was school; however, it needs for brief and detailed information about contraceptives to be introduced as a subject matter in high schools in order to have clear concept and understanding on contraceptive.
- Information should be broadcasted through mass media about contraceptives, in Eritrea.
- College students as adolescents should be encouraged to discuss about contraceptive methods and their use openly despite the strong cultural and religious beliefs.

Limitation of the study

The data was collected using a questionnaire that could not be possible to confirm the respondents’ actual practice of using contraceptive methods.

Abbreviations

ACHS: Asmara College of Health Sciences; EIT: Eritrean Institute of Technology; MDG: Millennium Development Goals; MoH: Ministry of Health; OC: Oral Contraceptives; SPSS: Statistically Package for Social Sciences; STDs: Sexually Transmitted Diseases; TV: Television; UN: United Nation; UNFPA: United Nation's Fund for Population Activities; WHO: World Health Organization

Acknowledgements

The authors would like to thank the staff members of EIT for their tenacious cooperation. We are also heartily thankful to Asmara College of Health Sciences (ACHS) instructors who were involved in this research through their helpful feedbacks. Our appreciation goes to Ministry of Health Scientific and Research Ethical Committee for giving us the permission to carry out the study and also the students of EIT for agreeing to participate in this study.

V. FUNDING

There was no source of funding for the study, for the authors or manuscript preparation.

Conflict of interest: None declared

Authors' Contributions

All authors participated in all phases of the study including topic selection, design, data collection, data analysis and interpretation. Samuel contributes in writing the manuscript and Idris M contributed in critical preparation of the manuscript for publication.

Availability of data and materials

The complete data set supporting the conclusions of this article is available from the corresponding author and can be accessed up on reasonable request.

REFERENCE

- [1]. Akintade, OL., Pengpid, S., & Peltzer K. (2011). Awareness and use of and barriers to family planning services among female university students in Lesotho. *South African Journal of Obstetrics and Gynaecology*, 17(3); available at: <https://www.ajol.info/index.php/sajog/article/view/70538> Accessed 20th Sep, 2019.
- [2]. Summers, C; (2013). Unintended Pregnancy and Abortion in Uganda. *Guttmacher Institute*. www.guttmacher.org
- [3]. World Health Organisation. (2008). Making Pregnancy Safer: Annual Report 2007.
- [4]. Cleland, J; Bernstein, S; Ezeh, A; Faundes, A; Glasier, A; & Innis, J. (2006). Family planning: the unfinished agenda. *Lancet*, 18;368(9549):1810-27, Available at: <https://www.ncbi.nlm.nih.gov/pubmed/17113431> Accessed: 21st Sep, 2019.
- [5]. UNFPA. (2004). State of the world population.
- [6]. Hubacher, D; Mavranouzouli, I; McGinn, E. (2008). Unintended pregnancy in sub-Saharan Africa: magnitude of the problem and potential role of contraceptive implants to alleviate it. *Contraception*. 2008;78(1):73-8. doi: 10.1016/j.contraception.2008.03.002.
- [7]. Nsubuga H., Sekandi J.N., Sempeera H., & Makumbi F.F. (2016). Contraception use, knowledge, attitude, perceptions and sexual behaviour among female university students. *BMC Womens Health*. 16(6) doi: 10.1186/s12905-016-0286-6.
- [8]. WHO, Development and Research Training in Human Reproduction (2004,). Research on reproductive health at WHO: pushing the frontiers of knowledge: biennial report: 2002– 2003. Available at: <http://libopac.nimhans.ac.in/cgi-bin/koha/opac-detail.pl?biblionumber> Accessed: 20th Sept, 2019.
- [9]. Gollakota S., Mylavarapu S.R., & Padmavathi, K. (2015,). A Study of Awareness of Reproductive Health among College Students of Visakhapatnam. *Journal of Dental and Medical Sciences*. 14 (2); DOI: 10.9790/0853-14275459.
- [10]. Hoque , M.E., & Ghuman, S., (2012). Knowledge, Practices, and Attitudes of Emergency Contraception among Female University Students in KwaZulu-Natal, South Africa. *PLoS ONE* 7(9): e46346. <https://doi.org/10.1371/journal.pone.0046346>.
- [11]. Eritrean Population Health Survey. Preliminary Report National Statistics Office Asmara, Eritrea. 2010.
- [12]. Kabagenyi Allen, Patricia Ndugga, Stephen Ojiambo Wandera and Betty Kwagala. Modern contraceptive use among sexually active men in Uganda, 2014. *BMC Public Health*, Available at: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458> .
- [13]. Yasir Nawaz, Ashfaq Ahmed Maan, Babak Mahmood and Fawad Asif. Knowledge and usage of contraceptives, influencing male reproductive health behavior. Pakistan, 2013. *International Journal of Asian Social Science*, 2013, 3(1):38-68 38.

- [14]. NA Hussain, TM Akande, GK Osagbemi, ST Olasupo, KY Salawu, and ET Adebayo. Perception and practice of contraception among male soldiers in Sobi barracks, Ilorin, Nigeria, *Afr Health Sci.* 2013 13(2): 415–422. doi: 10.4314/ahs.v13i2.31.
- [15]. Jamal Abdul Nasir, M. H. Tahir, and Arif Ahmed Zaidi. Contraceptive attitude and behavior among university men: A study from Punjab, Pakistan 2010 *J Ayub Med Coll Abbottabad*; 22(1).
- [16]. P. Dahal Govinda, Sabu S. Padmadas and P.R. Andrew Hinde. Fertility-Limiting Behavior and Contraceptive Choice among Men in Nepal, 2008, 34 (1) pp. 6-14.

***Corresponding Author: Idris Mohammed**
¹ Department of Anesthesia, Eritrean Air Force Hospital