

Awareness and Use of Modern Contraceptives among University Students in Kilimanjaro Region, Tanzania

Mr. Masanja Robert¹, Majige Selemani², Michael Johnson Mahande³

¹Department of Mathematics and Statistics, Mwenge Catholic University Moshi, KCMC road, P.O.Box 1226, Kilimanjaro, Tanzania

²Department of Statistics, University of Dar es Salaam, P.O. Box 35047, Dar es Salaam, Tanzania

³Department of Epidemiology & Biostatistics, Institute of Public Health, Kilimanjaro Christian Medical University College, P.O. Box 2440, Moshi, Tanzania

Abstract: Tanzania, University students fall under youth group which is prone to unattended sexual risk behaviours and unwanted pregnancies. Modern Contraceptives are the devices which can be used in controlling unintended pregnancies and avoiding sexual transmitted disease. Majority previous researchers dealt with reproductive health females' modern contraceptives use. This study described knowledge, attitudes and contraceptive practices to University students in Kilimanjaro region, regardless of gender category.

Methods: The study used cross-sectional and ex-post factor research design to select a sample from three (3) random selected universities. A stratified sampling techniques was used to select (n=100) homogeneous students. Instruments' reliability was tested to validate internal consistent of questionnaire; the reliability was at least 50% ($r=0.78$) which implied questionnaire was reliable. Data collected from respondents were analysed by the help of STATA v. 12 and SPSS v. 20 tools.

Results: Results revealed that majority (85%) university students ever heard modern contraceptives of which (77%) had positive attitudes whilst (62%) ever only seen modern contraceptives. Modern Contraceptives' knowledge was at least good, although it was not hundred percent. The results proved low prevalence of modern contraceptive uses since only (16% students) always used modern contraceptives. Modern Contraceptives uses' associative factors are:-students' attitudes, knowledge, residence, religion status, economic factors, availability and accessibility of modern contraceptives, number of births and others university students socio-cultural practices. Predictive factors since (p-values ($p < \alpha=5\%$) against modern contraceptives uses were gender ($p=0.007$), earning per month ($p=0.015$), marital status ($p=0.007$), number of birth(s) ($p=0.007$) and students' religion status ($p=0.004$).

Conclusion: Based on the findings, it can be winded that attitudes, social-demographic characteristics and economic status affect university students' modern contraceptives uses in Kilimanjaro region. Associative Modern Contraceptives factors are availability and accessibility, marital status, income level and level of education. Modern Contraceptives uses predictive factors are gender, earnings per month, marital status, number of births and religion status.

Keywords: Modern contraceptive use; Higher learning institution; Reproductive health & Reproductive health age.

1. BACKGROUND

Worldwide, University students fall in the youth group which is prone to unattended sexual risk behaviours that may lead to unwanted pregnancies [8]. The Modern Contraceptives use changes due to accessibility of contraceptives, knowledge, partners' will on childbearing, economic factors and avoiding early age bearing [24]. Contraception in many developing countries is characterized by high unmet need, irregular access, low utilization and presumed demand for long-Acting reversible contraceptives (LARCs) [5].

According to [19] MCU increases as additional methods are made available to populations. The survey of comparison of results from national surveys conducted in Bulgaria in 1995 and 2000 revealed little overall change in the use of Modern contraceptives [7].

According to [4] of the 2011 Uganda Demographic and Health Survey (UDHS), Uganda has a young population (52% were below age 15, and 17% were age 15-24) and a high total fertility rate (TFR), at 6.2 children per woman. As this large cohort of young people enters the childbearing years, their reproductive behaviour can determine the growth and size of Uganda's population for decades to come.

The discrepancy between equality in use of modern contraceptives and equality in fertility must be addressed in a future revision of policies related to family planning. Otherwise, it could be a major obstacle for attaining further progress in achieving the Millennium Development Goal (MDG) 5 [3].

Majority students in higher education in Tanzania are at least 19 years age, this expose them to inadvertent and unprotected sexual intercourse leading to unintended pregnancies, abortions and sexual transmitted infections [13]. The increased sexual risky behaviours of University students has been attributed to movement from a restricted rural to a more liberal urban environment, social demographic and community characteristics [13].

Most previous researchers based on a single sex like [12, 13, 19]. They paved way for conducting this study by involving university students regardless of their gender category. Doubtless, it engaged on influencing factors, attitudes, knowledge and predictive factors of university students' modern contraceptives uses.

2. STUDY VARIABLES

The main outcome variable was Modern Contraceptives Use at higher learning institutions. University students intrinsically involved in this study since were in the study target. The study independent variables are social-demographic characteristics, attitudes, social-economic factors, education's sources of Modern Contraceptives and religious factors. These variables were used to determine the response variable (Modern Contraceptives Use) to university students.

3. METHODS

Study Design and Setting:

The cross-sectional and ex-post factor study designs were used, in ex-post factor design was used because sampling unit was not under control. Study population, sample size and sampling procedures are: three universities out of six universities were simple randomly selected. The elements from selected universities were subdivided into strata to constitute homogeneity individual characteristics. The strata elements had equal chance to form a sample size (n=100) of university students. The researcher obtained a representative sample of university students aged from (19-49 years), in fact is a reproductive health age. The sample size was not extremely large due to homogeneity assumed to target population, stratified sampling design which helped to reduce systematic bias, time factor and financial problems.

Data Collections and Analysis Techniques:

The quantitative and qualitative data were collected through Questionnaire and Focus Group Discussion (FGD) instruments. Researchers' analysis techniques were Frequency tables (FT), Contingency Table (CT), Chi-squares (χ^2), P-values (P), Odds Ratios (OR), Correlation (Cr), Univariate, Bivariate, Multivariate Analysis and Binary Logistic Regression (BLR) by using Statistical Package for Social Science (SPSS) and STATA analysis tools. The researcher adhered with statistical summarization, presentation (tables, graphs and charts), interpretation techniques as well as ethical judgments were highly regarded. Furthermore, the researcher justified the findings through citing other researchers' findings.

4. RESULTS

Social-demographic of respondents:

Of 100 university students, female were more than male (49%) by 2 percent; majority (88%) fell under 21 to 31 age (in years). Out of 100 university students, (85%) of them pursued bachelor degree whereas only (2%) pursued master's degree. Two third of the participants were yet married; 14% more of students had income of $\geq 100,000/=$. In addition to

that many university students were HESLB beneficiaries compared to other sources. Few students (11%) had at least two number of births. Many (83%) were Christian of which (60%) were from rural areas, this means that (20%) more students came from rural areas (see table 4.1& figure 4.1).

Influencing Factors on Modern Contraceptives Uses at Higher Learning Institution(s):

Accepted influencing factors on modern contraceptives use were population increase (85.7%), accessibility and availability (81%), marital status (74.7%), (29.6%) and religion (74.7%) (see table 4.2). Statistical results indicated that university students were aware with factors which attract in using modern contraceptives except religion factor. The results were contrary to findings of [18] who disclosed that religion factor influenced the use of Contraceptives.

Significant Associative Factors on MCU at Higher Learning Institution(s):

Significant associative factors with modern contraceptives were:- Availability and accessibility of modern contraceptives with χ^2 (P-value) = 6.824 (0.009): OR(95% CI): 4.458 (1.362 – 14.606), Marital status with χ^2 (P-value) = 5.619 (0.018): OR(95% CI)= 3.195 (1.192 – 8.564), Employment status with χ^2 (P-value)= 6.693(0.01): OR(95% CI)= 3.706 (1.325 – 10.366) and Level of education with χ^2 (P-value)= 7.587(0.006):OR(95% CI)= 4.778 (1.466 – 15.576)(see table 4.3). Modern contraceptives uses vary due to availability and accessibility, marital status, employment status and education level (P-values $<\alpha=5\%$) like [19].

Educational on Modern Contraceptives Uses:

Education on the use of modern contraceptives was not hundred percent fulfilled simply because, students just stated been ever seen (85%) and heard (62%). This did not imply enough knowledge on modern contraceptives due to the fact that few students (16%) agreed that ever always used modern contraceptives same applied to [12]. Thus there was knowledge on modern contraceptives at higher learning institutions, but was not directly implemented in term of using to avoids unintended pregnancies and sexual transmitted diseases (see table 4.4).

Significant Sources of Education on Modern Contraceptives Use:

The significant (p-values $<5\%$) sources of modern contraceptives use education were:- school source with χ^2 (P-value) = 5.857 (0.016): OR(95% CI) was 2.899 (1.207 – 6.964), Mass media/ magazine source with χ^2 (P-value) = 14.115(0.000): OR(95% CI) = 11.912(2.586– 54.860), Radio source with χ^2 (P-value)= 17.164(0.000): OR(95% CI)= 24.882(3.167 – 197.5)) and Stand of buses with χ^2 (P-value)= 4.285(0.038): OR(95% CI)= 0.400(0.166 – 0.962). These were significant nominated sources of education towards Modern Contraceptives Uses (MCU). These sources were have significant influence university students' modern contraceptives knowledge, otherwise insignificant (P-values $\geq\alpha =5\%$) (see table4.5).

Most Modern Contraceptives Used by University Students in Kilimanjaro Region:

Many students (70%) used Condom while implants, Withdraw and Pills/Oral were rarely practised by university students. The results implied that a good number of students used condoms perhaps due to accessibility and availability of condoms (see figure 4.2). The findings were contrary to [10] revealed that IUCD and traditional methods prevailed in uses compared to other methods.

Attitudes towards Modern Contraceptives (MC):

Distribution of Students' Attitude on Modern Contraceptives Use:

The researcher used a likert scale questions to study students' attitudes on Modern Contraceptives uses. The items were rated: Strongly Agree (5=AS), Agree (4=A), Undecided (3=U), Disagree (2=DS) and Strongly Disagree (1=SD).The results indicated that majority (69%) agreed the statements; especially students (79%, rate mean =4.13) agreed provision of Modern Contraceptives to students and should be extended while (79%, rate mean =4.17) stated that the government should support instructors/teachers and students on Modern Contraceptives (see table 4.6). On other hands students supported formulation of Modern Contraceptive policies, parents and ministry of health to motivate students to use

Modern Contraceptives as well as constant availability and accessibility of modern contraceptives. Therefore, the overall results indicated that majority students had positive attitudes towards Modern Contraceptives (see figure 4.3). Truly, low prevalence use of Modern Contraceptives perhaps was due to less effective implementation and careless of university students. University students' attitudes towards Modern Contraceptives had significant effect towards Modern Contraceptives χ^2 (P-value) = 5.689 (0.017): OR (95% CI) = 1.262(1.13 – 1.41) (see table 4.7). This evidenced that university students with positive attitudes had higher odds to implement effect use than with negative attitudes. The findings lined with [12] who found that attitude have significant effects towards modern contraceptives use.

Binary Multiple Logistic Regression Model (BMLRM):

The Binary inputs (independents) variables ($x_{i=1,2,\dots,8}$) and outcome (output) variable ($Y_{j=1}$) were associated in the STATA program. This divulged whether social demographic characteristics and economic factors could predict Modern Contraceptive use to among university students. The Odds Ratio (OR: 95%CI) and p-values were used to determine whether independents factors were significant predictive factors on dependent factor ($Y_{j=1}$). The decision rule: when p-values $< \alpha = 0.05$ level of significance and Odds ratio (OR) in relation to reference categories (0).

Assumptions of the Model (AM):

- Both variables were randomly selected from the homogeneous population
- The variables (regressors) were independent to each other
- Sample assumed to be homogeneity (variables)
- The model also assumed variables were free from multi-collineality of the independent variable(s)
- All variables were assumed dummy variables (1) and (0) categories
- Equal variation(s) were assumed. The spread of values from the population parameter were normally distributed.

The model relabelled independents variables ($x_{i=1,2,\dots,8}$) predictors at $\alpha = 0.05$ level of significance against the response variable ($y_{j=1}$). The independent variables were Sex = (x_1), Marital status = (x_2), Number of births (oviparity) = (x_3), Age of an individual's = (x_4), Earnings per month (Tshs) = (x_5), Religion status = (x_6), Employment status = (x_7), and education level = (x_8). The results were presented as follows:-

Male students had higher Odds Ratio: OR (95%CI) = 122.9(3.7-4056): P-value < 5% in reference to female students. Male students were in higher odds of using modern contraceptives than female students. Age category: university students within age category from 21 to 33 years had same Odds Ratio: OR (95%CI) = 5.77(0.14-81.19): P-value > 5% in reference to students within age category > 33 years. Marital status: students who ever married had higher Odds Ratio: OR (95%CI) = 83.60(3.33-2093): P-value < 5% in reference to students never married. Education status: students with at most diploma had same Odds Ratio: OR (95%CI) = 34.34(0.99-1181): P-value ≤ 0.05 reference to students with at least degree. Earnings per month: students who earned $\leq 100,000/=$ Tshs per month had higher Odds Ratio: OR (95%CI) = 0.004(0.0-0.23): P-value < 5% level of significance. Number of births (Oviparity): students who had ≤ 1 number of births (Oviparity) had higher Odds Ratio: OR (95%CI) = 0.006(0.0-0.24): P-value < 5% level of significance in reference to those had ≥ 2 number of births (oviparity). Employment status: students who were already employed had same Odds Ratio: OR (95%CI) = 0.97(0.41-81.19): P-value > 5% level of significance in reference to those not employed. Religion status: findings revealed that Christian students had higher Odds Ratio: OR (95%CI) = 0.001(0.00-0.11): P-value < 0.05 of using modern contraceptives than Muslim students in higher learning institutions, particular in Kilimanjaro region (see table 4.8).

5. DISCUSSION

The researcher revealed that most university students originated from remoteness areas. Sample representation approximated to normal distribution although female were slightly many compared to male respondents. Many students joined in the university studies ≥ 21 years, which perhaps is reproductive health age. Kilimanjaro society's education structure has changed from uneducated to at least bachelor degree level. University students believed to have many income's sources (especially HESLB) due to the fact that above (50%) of respondents owned $\geq 100,000/=$ income per month. Christian students dominated in the study, this proved that Christian students perhaps have higher odds of using modern contraceptives.

The findings showed that few university students were always using modern contraceptives, as the results majority students were in risk of being infected by sexual intercourse diseases and unintended pregnancies like [12] uncovered that modern contraceptives utilization was only (18.7%).

Based on the findings, it was revealed that: school, Mass media/ magazine, Radio and Stand of buses were significant areas for providing modern contraceptives use education. These could be areas which were easily accessible and affordable by university students in Kilimanjaro. The researcher's findings indicated that accessibility and availability of modern contraceptives, education level, attitude, knowledge, socio-economic factors and influence university students' modern contraceptives uses status [2, 12, 21, 23].

The statistical results indicated that Earnings per month, Gender, Marital status, Number of births and Religion status determine university students' modern contraceptives use. Education level, age category as well as employment status predicted at low odds ratio in relative to their reference category. Modern Contraceptives use become affected as gender, earning per month, marital status, numbers of birth(s) and religion status vary among university students [12,15,17, 20].

6. CONCLUSION

Based on the findings, influencing factors towards Modern Contraceptives use to university students are attitudes, availability and accessibility of modern contraceptives, marital status, Employment status and Level of education. Significant education sources are school, mass media/ magazine, Radio and Stand of buses. Predictive social-demographic and economic factors towards modern contraceptives use at the higher learning institutions are Gender, Earnings per month, marital status, Number of births and Religion status. Avoiding unplanned pregnancies to university students' sources of education on the use of modern contraceptives are to be emphasized. University students fail to use modern contraceptives due to inadequate availability, inaccessibility, social-cultural practices and economic factors. Religion status affects the use of modern contraceptives to some extent since there are denominations complete ban the use of modern contraceptives. Therefore, for safe family planning and meeting millennium development goals, university students suppose modern contraceptives' education. This may help to decrease unintended pregnancies and sexual transmitted diseases (STDs & STIs) at higher learning institutions (HLIs).

7. RECOMMENDATIONS

Grounding to the trend of study's results, some aspects were crucial discovered ones on modern contraceptive uses to among university students. The researcher recommended as follows:-

Government especially Ministry of Health and Social Affairs may formulate well directional policies about Modern Contraceptives uses, well organized Higher Learning Institutions (HLIs) education curriculum programs on Modern Contraceptive uses to university students.

Government and Non-government Organizations may involve in provision of seminars on Modern Contraceptives uses and designing rules for modern contraceptives uses. In avoiding negative effects, all individuals in the society may discourage exhaustive/abusive university students' modern contraceptives use.

Recommendation for further studies:

The research may be conducted in other way around, such as extending it to the whole Tanzania country; exploring the impacts of Modern Contraceptives uses; significant relationship between Modern Contraceptives use and Tanzania's education development and investigating the prevalence's uses of modern contraceptives in Tanzania's society.

Competing interests:

The authors declared that they have no competing interests.

Authors' contributions:

MRK: conception idea for the study, design of the study, manuscript preparation and subsequent revisions, MR, MJM and MJ reviewed the manuscript. All authors read and approved the final manuscript.

ACKNOWLEDGEMENTS

We thank all university students for their endless participation in data collection. Our gratitude appreciations to all university stakeholders for their honest and positive perception of this study. Although, the sample size was not extremely large due to stratified sampling design which helped to reduce systematic bias, time factor and financial problems.

Funding:

This study was sponsored by the Tanzania government through its Higher Education Sponsorship Loans Board (HESLB) as part of MRK Bachelor Degree study.

REFERENCES

- [1] Abiodun, O. M., & Balogun, O. R. (2009). *Sexual activity and contraceptive use among young female students of tertiary educational institutions in Ilorin, Nigeria*. *Contraception*, 79, 146–149.
- [2] Al Sheeha, M. (2010). *Awareness and use of contraceptives among saudi women attending primary care centers in Al-qassim, saudi arabia*. *International Journal of Health Sciences*, 4, 11–21.
- [3] Asamoah, B. O., et al. (2013). *Inequality in fertility rate and modern contraceptive use among Ghanaian women from 1988-2008*. *International Journal for Equity in Health*, 12, 37.
- [4] Asiimwe, J. B., et al. (2012). *Socio-demographic factors associated with contraceptives use among young women in comparison with older women in Uganda*. Kampala, Uganda.
- [5] Blumenthal, P. D., et al. (2013). *Revitalizing long-Acting reversible contraceptives in settings with high unmet need: A multicountry experience matching demand creation and service delivery*. *Contraception*, 87, 170–175.
- [6] C.R.Kothari. (2004). *Research Methodology Methods and Techniques (Second Revised Edition)*.
- [7] Carlson, E., & Lamb, V. (2001). *Changes in contraceptive use in Bulgaria, 1995-2000*. *Studies in Family Planning*, 32, 329–338.
- [8] Dimoso, P. J., Msaki, M. M., & Suleiman, M. A. (2014). *The Use of Contraceptives among Female Students in State University of Zanzibar*. *Food and Public Health*.
- [9] Enock Ngome and Clifford Odimegwu. (2012). *The social-context of adolescent women's use of women contraceptives in Zimbabwe: A multilevel analysis*. South Africa: University of Witwatersrand, South Africa.
- [10] Gereltuya, A., Falkingham, J., & Brown, J. (2007). *Determinants of current contraceptive use and method choice in Mongolia*. *Journal of Biosocial Science*, 39, 801–817.
- [11] Gordon, C. (2011). *Women 's Education and Modern Contraceptive Use in Ethiopia*, 3(1), 1–23.
- [12] Lwelamira, J., Mnyamagola, G. and Msaki, M.M. (2012) *Knowledge, Attitude and Practice (KAP) towards Modern Contraceptives among Married Women of Reproductive Age in Mpwapwa District, Central Tanzania*. *Current Research Journal of Social Sciences*, 4, 235-245.
- [13] Magreat J Somba, et al. (2014). *Sexual behaviour, contraceptive knowledge and use among female undergraduates' students of Muhimbili and Dar es Salaam Universities, Tanzania: a cross-sectional study*. Dar es Salaam.
- [14] Mubita-Ngoma, C., & Kadantu, M. C. (2010). *Knowledge and use of modern family planning methods by rural women in Zambia*. *Curatationis*, 33, 17–22.
- [15] Nagase, T., et al. (2003). *Obstacles to modern contraceptive use among married women in southern urban Maldives*. *Contraception*, 68, 125–134.
- [16] National Bureau of Statistics (NBS). (2012). *Tanzania National Bureau of Statistics Ministry of Finance*, 602.
- [17] Obinna Onwujekwe, et al. (2013). *Are people really using modern contraceptives and how much do they pay for them? Obinna, Nigeria*.
- [18] Quijano Nv. (1986). *Herbal contraceptives: exploring indigenous methods of family planning*. *Initiatives in Population*, 8, 22, 31–35.

- [19] Ross, J., & Stover, J. (2013). *Use of modern contraception increases when more methods become available: analysis of evidence from 1982-2009*. *Global Health, Science and Practice*, 1(2), 203–12.
- [20] Speizer, I. S., et al. (2000). *Do Service Providers in Tanzania Unnecessarily Restrict Clients' Access to Contraceptive Methods?* *International Family Planning Perspectives*, 26(1), 13.
- [21] Stephenson, R., et al. (2007). *Contextual influences on modern contraceptive use in sub-Saharan Africa*. *American Journal of Public Health*, 97, 1233–1240.
- [22] Ugoji, F. N. (2013). *An Examination of University Students' Attitude to Contraceptive Use*, 2(1), 18–22.
- [23] URT. (2006). *United Republic of Tanzania, National Population Policy*. Ministry of planning Economy and Empowerment, 4(3), 235–245.
- [24] USAID. (2014). *Public Health and Epidemiology*, 6(10).
- [25] Williamson, L. M., et al. (2009). *Limits to modern contraceptive use among young women in developing countries: a systematic review of qualitative research*. *Reproductive Health*, 6.

APPENDIX - A

FIGURES:

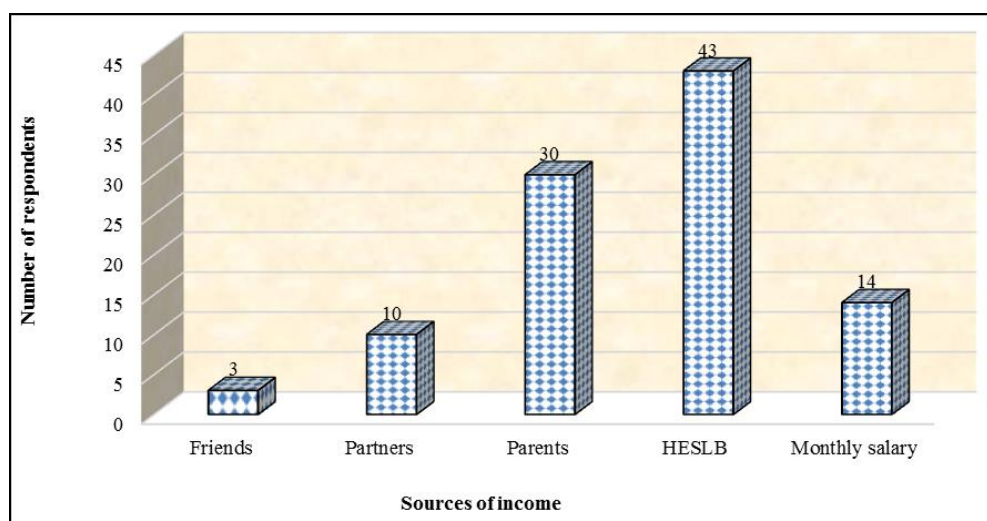


Figure 4.1: University Students' Distribution Income's Sources (n = 100)

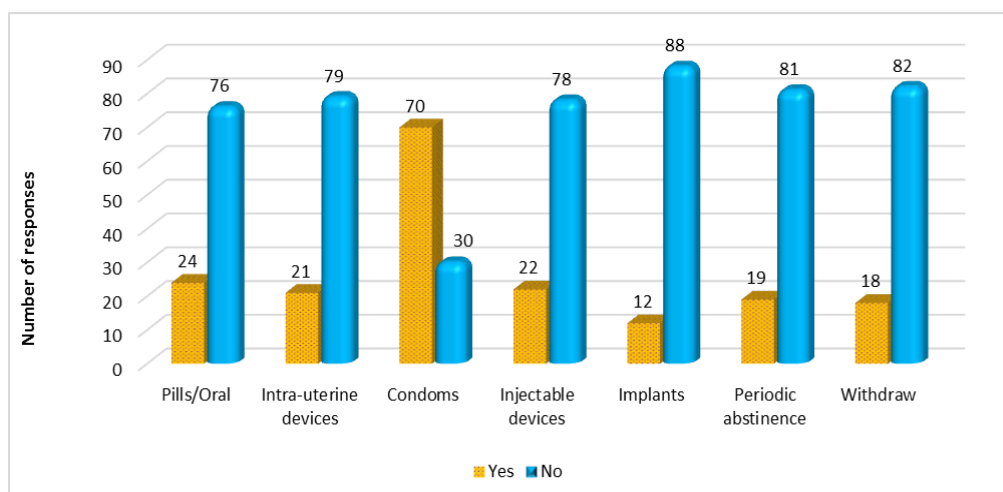


Figure 4.2: Distribution of Mostly Modern Contraceptives Used (n = 100)

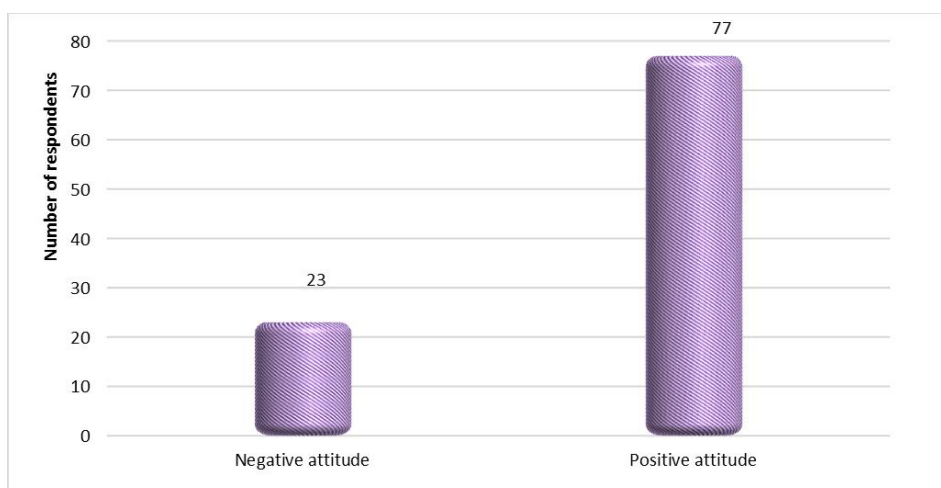


Figure 4.3: Distribution of Students' Attitudes on Modern Contraceptives Use (n = 100)

TABLES:

Table 4.1: Social-Demographic of Respondents (n = 100)

Characteristics	Frequency (%)
Sex/Gender	
Male	49 (49%)
Female	51 (51%)
Age category (yrs.)	
21- 31 years	88 (88%)
34+ years	12 (12%)
Educational level	
Certificate	9 (9%)
Diploma	4 (4%)
Degree	85 (85%)
Masters level	2 (2%)
Marital status	
Married	32 (32%)
Not married	68 (68%)
Income level	
Below 100,000/=	43 (43%)
100,000/= and above	57 (57%)
Number of birth	
≤ 1 number of birth	89 (89%)
≥ 2 number of birth	11 (11%)
Religious status	
Christian	83 (83%)
Muslim	17 (17%)
Residence of the respondents	
Rural areas	60 (60%)
Urban areas	40 (40%)

Table 4.2: Contributing Factors on Modern Contraceptives Uses (n = 100)

Contributing factors	Frequency (%)		Return Rate(RR)
	Yes/Factor	Not a factor	RR of 100
i. Availability and accessibility of modern contraceptives	81(81%)	19(19%)	100 (100%)
ii. Level of education	79 (79.8%)	20 (20.2%)	99 (99%)
ii. Population increase	84 (85.7%)	14 (14.3%)	98 (98%)
v. Number of births	79(84%)	15 (16%)	94 (94%)
v. Number of partners/husbands	80 (82.5%)	17 (17.5%)	97 (97%)
vi. Marital status	74 (74.7%)	25 (25.3%)	99 (99%)
ii. Income status	63 (63.6%)	36 (36.4%)	99 (99%)
ii. Religion factor	29 (29.6%)	69 (70.4%)	98 (98%)
x. Residence	75 (77.3%)	22 (22.7%)	97 (97%)
x. Gender type	69 (71.1%)	28 (28.9%)	97 (97%)
xi. Employment status	76 (76%)	24 (24%)	100 (100%)

Table 4.3: Association of MCU by Contributing Factors (n = 100)

Contributing Factors	Statistical tests		Estimation of Odds ratio (OR)	
	Chi-square value]	[P-	OR	95%(CI)
i. Availability and accessibility of modern contraceptives	6.824 [0.009]		4.458	1.362 – 14.606
ii. Level of education	7.587 [0.006]		4.778	1.466 – 15.576
ii. Population increase	1.150 [0.284]		1.888	0.584 – 6. 107
v. Number of births	0.037 [0.848]		1.114	1.466 – 15. 576
v. Number of partners	0.001 [0.974]		1.018	0.357 – 2.905
vi. Marital status	5.619 [0.018]		3.195	1.192 – 8.564
ii. Income status	0.036 [0.848]		1.083	0.477 – 2.458
ii. Religion factor	0.714 [0.398]		0.686	0.285 – 1.648
x. Residence	1.050 [0.305]		0.606	0.231 – 1.587
x. Gender type	0.692 [0.455]		1.455	0.600 – 3.325
xi. Employment status	6.693 [0.01]		3.706	1.325 – 10.366

Table 4.4: Sources Areas for Education on Modern Contraceptives Uses (n = 100)

Modern contraceptives sources of education	Respondents		Return Rate(RR)
	Yes =f (%)	No=f (%)	% Out of 100
i. School	68 (68%)	32 (32%)	100 (100%)
ii. Mass media/magazines	79 (79.8%)	20(20.2%)	99 (99%)
ii. Radio	81 (81%)	19 (19%)	100 (100%)
v. Church	47 (50%)	47 (50%)	94 (94%)
v. Mosque	62 (64.6%)	32 (35.4%)	94 (94%)
vi. Meetings	74 (74%)	26 (26%)	100 (100%)
ii. Fliers paper	62 (63.3%)	36 (36.7%)	98 (98%)
ii. Home from parents	61 (63.5%)	35 (36.5%)	96 (96%)
x. Employment areas	43 (43.9%)	55 (56.1%)	98 (98%)
x. Stand of buses compound	33 (34.4%)	63 (65.6%)	96 (96%)
xi. University's campus	56 (56%)	44 (44%)	100 (100%)

Table 4.5: Significant Association of Education's Sources by MCU (n= 100)

Contributing Factors	Statistical tests	Estimation of Odds ratio (OR)	
	Chi-square [P-value]	OR	95% (CI)
i. School	5.857 [0.016]	2.899	1.207 – 6.964
ii. Mass media/magazines	14.115[0.000]	11.912	2.586 – 54.860
ii. Radio	17.164[0.000]	24.882	3.167 – 197.510
v. Church	0.684[0.408]	1.409	0.625 – 3.177
v. Mosque	3.853[0.050]	0.410	0.175 – 1.008
vi. Meetings	0.456[0.499]	1.364	0.554 – 3.360
ii. Fliers paper	0.950[0.758]	0.879	0.386 – 1.999
ii. Home from parents	0.695[0.405]	0.702	0.304 – 1.617
x. University campus	0.002[0.961]	1.020	0.463 – 2.248
x. Employment areas	1.554[0.213]	0.600	0.268 – 1.343
xi. Stand of buses compound	4.285[0.038]	0.400	0.166 – 0.962

Table4.6: Distribution of Students' Response (n=100)

Item(s)	Frequency (%) and Measure of Central Tendency						
	5=SA	4=A	3=U	2=D	1=SD	M1(Mean)	M2 (Mode)
i. I like modern contraceptives methods	23(23)	25(25)	8(8)	6(6)	38(38)	2.89	1
ii. Modern contraceptives prevents child bearing	40(40)	40(40)	3(3)	5(5)	12(12)	3.91	4
ii. Students should be educated on how to use	58(58)	21(21)	5(5)	8(8)	8(8)	4.13	5
v. Modern contraceptives should be supplied by the government	41(41)	29(29)	15(15)	4(4)	11(11)	3.85	5
v. Parents should take part to support their children on modern contraceptives	27(27)	30(30)	12(12)	7(7)	24(24)	3.29	4
vi. The government should support both students and lecturers for further education on modern contraceptives use	55(55)	24(24)	10(10)	5(5)	6(6)	4.17	5
ii. Education on modern contraceptives should be extended	45(45)	35(35)	10(10)	5(5)	5(5)	4.10	5
ii. Constant availability and accessibility of modern contraceptives	29(29)	45(45)	8(8)	10(10)	8(8)	3.77	4
x. Formulation of modern contraceptives policies	38(38)	35(35)	11(11)	4(4)	12(12)	3.83	5
x. Ministry of Health motivates students to use Modern Contraceptives	18(18)	35(35)	14(14)	7(7)	26(26)	3.12	4
***Overall Rating*	37(37)	32(32)	10(10)	6(6)	15(15)	3.71	4

Table 4.7: Association of Respondents' Attitudes by Modern Contraceptives Uses (n = 100)

Attitudes	Used contraceptives n (%)			Chi-square[P-value]	Risk [95% CI]
	Ever used	Never used	Total		
Negative	0(0%)	23(23.0%)	23(23.0%)		
Positive	16(16.0%)	61(61.0%)	77(77.0%)	5.689[0.017]	1.262[1.13 – 1.41]
Total	16(16.0%)	84(84.0%)	100(100%)		

Table4.8: Binary Logistic Regression (BLR) of Social-Demographics and Economic Factors on Modern Contraceptives Use (n=100)

Variables	Modern contraceptives use (MCU) n (%)				P> z
	Never used N=84 (84)	Ever used N=16 (16)	Z	OR[95%CI]	
Sex/gender					
Male	39 (39)	10(10)	2.70	122.93[3.7-4056]	0.007
Female	45 (45)	6(6)		Reference	
Education level					
Diploma and below	6(6)	7(7)	1.96	34.34[0.99-1181]	0.05
Degree and above	78(78)	9(9)		Reference	
Earnings per month					
≤ 100,000/=	39(39)	4(4)	-2.43	0.0004[0.0-0.23]	0.015
>100,000/=	45(45)	12(12)		Reference	
Marital status					
Ever married	19(19)	13(13)	2.69	83.60[3.33-2093]	0.007
Never married	65(65)	3(3)		Reference	
Number of births(oviparity)					
≤ 1 births	80(80)	9(9)	-2.71	0.006[0.00-0.24]	0.007
≥ 2 births	4(4)	7(7)		Reference	
Age category (yrs.)					
21- 33 years	76(76)	12(12)	1.30	5.77[0.41-81.19]	0.194
>33 years	8(8)	4(4)		Reference	
Employment status					
Employed	71(71)	5(5)	-0.02	0.97[0.11-8.56]	0.980
Not employed	13(13)	11(11)		Reference	
Religion status					
Christian	75(75)	8(8)	-2.88	0.001[0.00-0.11]	0.004
Muslim	9(9)	8(8)		Reference	