

## Usage of Emergency Contraceptives among Female Students and its Associated Factors: Evidence from Higher Learning Institutions in Dodoma, Tanzania

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### Ikisiri

Utafiti huu ulifanywa ili kuziba pengo la taarifa juu ya matumizi ya dawa za uzazi wa mpango kwa dharura (ECs) miongoni mwa wanafunzi wa kike wa shahada ya kwanza mkoani Dodoma, Tanzania. Sampuli za wahojiwa zilichukuliwa kwa mbinu kuu mbili, (i) Mbinu ya sampuli ya makusudi ambayo ilitumika kuchagua taasisi tatu za elimu ya juu zilizopo Dodoma, na (ii) njia ya sampuli nasibu ilitumika kuchagua wahojiwa wa kike 295 wa shahada ya kwanza. Taarifa zilikusanywa kwa njia ya mahojiano yaliyoongozwa na dodoso. Idadi na asilimia zilitumiwa kuonyesha utofauti uliopo kwenye viashiria husika. Pia njia ya Chi-square ilitumika kuchambua mlandano wa viashiria vya matumizi ya dawa za uzazi wa mpango kwa dharura (EC). Utafiti uligundua kuwa washiriki wengi (93.9%) walikuwa wamesikia juu ya dawa za uzazi wa mpango kwa dharura (EC), na 61.4% kati yao ni watumiaji. Utafiti huu pia umeonesha kuwa ni wahojiwa wachache sana (14.3%) walikuwa wamepokea taarifa kutoka kwa wataalamu wa afya. Utafiti uligundua kuwa, hakuna taarifa za kutosha kwa waliohojiwa juu ya matumizi ya dawa za uzazi wa mpango wa dharura. Pia, utafiti uligundua kuwa, chanzo cha taarifa zinazohusu utumiaji wa dawa za uzazi wa mpango kwa dharura hakitokani na wataalamu wa matibabu/afya. Kwa kuongezea, unyanyapaa na tamaduni zilionekana kuzuia upatikanaji wa taarifa sahihi miongoni mwa wanafunzi wa kike wa shahada ya kwanza. Utafiti huu, umependekeza kuwa watoa huduma za afya wawe ndio chanzo kikuu cha kutoa taarifa kwa masuala yanayohusu dawa za uzazi wa mpango. Pia inashauriwa kwamba, vitengo shirikishi katika vyuo vya elimu ya juu vinapaswa kuzingatia kukuza uelewa kwa jamii zao kwa kupunguza unyanyapaa kwa mambo yote yanayohusiana na afya ya uzazi.

**Abstract**

*This study was carried out to fill the information gap on the use of Emergency Contraceptives (ECs) among female undergraduates, taking a case of Dodoma, Tanzania. A purposive sampling method was used to select three higher learning institutions in Dodoma, while simple random sampling method was used to select 295 female undergraduate students. Data were collected using interviews guided by questionnaire. Frequencies and percentages were used to determine the spread and variations of the variables being studied. Chi-square test was used to analyse the association between variables of interest for EC usage. The study found that most of participants (93.9%) had heard of EC, with 61.4% of them being EC users. Very few (14.3%) had received information from health professionals. Moreover, there is inadequate information about the types of ECs used. Also, stigma and culture observed to limit proper information for issues related to usage of ECs. This study recommends that; health service providers should be a leading source of information to all ECs related issues. Also affiliated organs in the higher learning institutions should focus on promoting awareness to their respective communities for reduction of stigma.*

**Keywords:** *Emergency Contraceptives, Female Students, Chi-Square Analysis*

**1. Introduction**

Emergency Contraceptive (EC) is a method of preventing an unwanted pregnancy after unprotected sex or misuse of regular contraceptive (Sweya *et al.*, 2016). Over years, pregnancies among the adolescence women is a remarkable problem across the globe (Amalba *et al.*, 2014; Both & Samuel, 2014; Chandra-Mouli & Akwara, 2020). The situation is more severe in less developed economies were about half (49%) of pregnancies that occur annually among young women are unwanted (Gunawardena *et al.*, 2019; Kassa *et al.*, 2018; Wado *et al.*, 2019; Yah *et al.*, 2021). This situation is also facing young girls and women in colleges, were about 33% of the pregnancies in African college students are reported to be unwanted (Lenjisa, 2014). The reasons are predominantly the non-use of contraceptives, failure to access contraceptive, and lack of knowledge of effective contraceptive methods (Mishore *et al.*, 2019).

The United Republic of Tanzania is characterized by young population, with a median age of 18 and almost 20% of its population between the ages of 15 and 24 (National Bureau of Statistics, 2013). This group is considered to be the most sexually active. Girls of this age if are in their academic pursuit, mostly are not married and face a lot of challenges in accessing

ECs than those married due to the stigma attached to their sexual activities before marriage. This limited access to reproductive contraceptive services results in unwanted pregnancies which is a health concern in most developing countries (Calvert *et al.*, 2018; Harper *et al.*, 2007). Despite ECs being a freely-available over-the-counter medication, in almost every pharmacy nationwide, take-up amongst female undergraduate students remains low with high rates of unplanned pregnancies (Somba *et al.*, 2014; TDHS, 2016).

Correct and proper use of ECs prevents unintended pregnancies and unsafe abortions (Kara *et al.*, 2019). In Tanzania, almost 50% of young women have heard about EC but lack accurate information about its correct use (Kara *et al.*, 2019; Massae *et al.*, 2018). Sexually active girls with limited access to ECs are more likely to experience an unwanted pregnancy which can jeopardize their academic studies and future career (Wafula, 2016). This study, therefore, assessed the usage of emergency contraceptives among female undergraduates in selected higher learning institutions in Dodoma, Tanzania. Specifically, the study; examined the general knowledge of the respondents about ECs (what is all about ECs, the types of ECs, and timing of consuming them); determined the usage of EC among the respondents (if used, when started to use, who recommend to use, and types of ECs used); as well as analysed the factors associated with the use of ECs.

## **2. Methodology**

### **2.1. Sampling procedure**

This study used multi-stage sampling techniques using a combination of purposive and simple random sampling methods. A purposive sampling method was used to select three higher learning institutions in Dodoma, the capital of Tanzania. The selected institutions were the College of Business Education (CBE), the Institute of Rural Development Planning (IRDP) and St. John's University of Tanzania (SJUT). These institutions were purposefully selected for their city centre location. This was thought to offer more temptation for female students compared to the city outskirts. In order to include a wide range of respondents from different socioeconomic backgrounds the study included two public and one private institution. These institutions offer similar levels of academic programmes from certificate, diploma and bachelor degrees to post graduate courses. Data for this study were collected in September 2019.

A simple random sampling method was used to get female undergraduate respondents. It is worth to note here that, the population for this study is composed of the full time registered

female undergraduate students in the three selected institutions. Simple random sampling was used to give an equal chance for every member of the study population to be selected. The simple random sampling involved the following procedures. Firstly, the size of study population was established. A list of female undergraduate students (1<sup>st</sup> - 4<sup>th</sup> year) was obtained from the admissions office in each institution. IRDP had 1800 students, CBE had 1500 students and SJUT had 1600 students.

Secondly, the required sample was established using the formula by Yamane (1967), given as:

$$n = N/[1 + Ne^2] \quad (1)$$

Whereby: n= required sample size, N = population of all female undergraduate students from the three institutions and  $e^2$  =Margin of error (6%).An additional 33 female undergraduate students were added to cover the possibility of non-response and/or dropouts. Thus, the sample size of this study was 295 female undergraduate students from the three institutions.

Thirdly, the number of female students was proportionally determined for each institution, and the simple random selection was made. In total there were 108 students from IRDP, 90 from CBE and 97 from SJUT. In addition to the students, five key informants were identified including three deans of students (one from every institution) and two medical staff (one medical staff from one of the institution was not available for the study). They were interviewed in order to validate and substantiate information provided by the students. The sampled respondents were informed of the purpose of the study and that their personal information would be treated in confidentiality. Informed verbal consent was obtained from each study participant. Data were collected using interviews guided by a pre-tested questionnaire which was developed based on various literature and improved to suit the context of the study.

## 2.2. Data Analysis

The collected data were cleaned, coded and entered in IBM SPSS Statistics version 25 software for analysis. Both descriptive and inferential statistics were used. Frequencies and percentages were used to determine the spread and variations of the variables being studied. Chi-square test was used to analyse the association between variables of interest for EC usage. The formula for the analysis was given as:

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i} \quad (2)$$

Such that;  $\chi^2$  is cumulative test statistics also referred as Chi-square statistics,  $O_i$  is observed data,  $E_i$  is expected data, and  $n$  is the number of observations. Furthermore, the P-value test was used to determine whether there is a statistical significant difference between the expected frequencies and the observed frequencies in one or more categories of a contingency table, where by  $p$ -value less than 0.01 at 95 % Confidence Intervals (CIs) were taken as robust statistical significance.

### 3. Results and Discussions

#### 3.1. Socio-demographic Characteristics of the Sampled Respondents

A total of 295 female undergraduate students were interviewed for this study. Most (78%) were aged 19 – 24, while very few (3.7%) were older than 30 (Table 1). This is good sample with respect to the objectives of the study, as most of the respondents were within the childbearing age, yet were not anticipated to entertain unexpected pregnancies during their ongoing studies, simply because having a child while still in full-time education brings a range of challenges including academic and psychological issues (Araba Etuah *et al.*, 2018; Lacasa *etal.*, 2016; Nkosi *et al.*, 2019). The majority (85.1%) of the surveyed sample was single and few (13.2%) were married. A married woman is expected to make joint decisions with her spouse unlike single ladies. Thus, having many single respondents was expected to obtain exhaustive and independent responses. Moreover, results in Table 1 show that, 63.4 and 52.5 per cent of respondents' fathers and mothers, respectively, had received secondary education. This is very crucial to explain the quality of the sampled respondents as literature suggested that, parents' education contributes to the overall children raising-up and their children's education achievements. This is vital to the proper formation of a child's personality and preparing the child to live an independent and organised life(Ceka & Murati, 2016; Dickson *et al.*, 2016; Idris *et al.*, 2020).

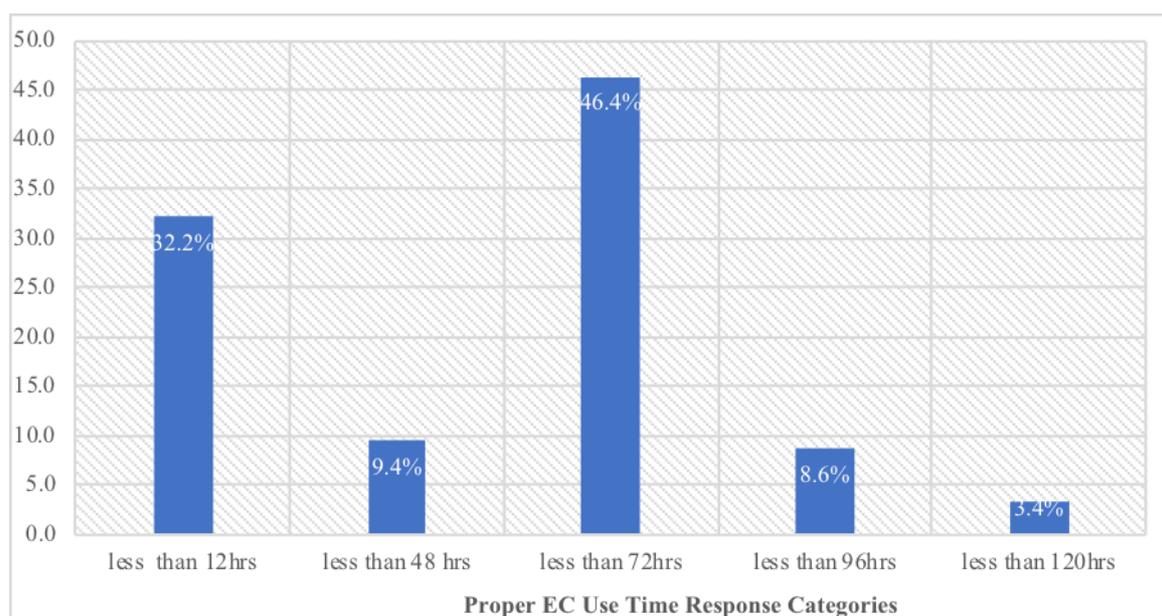
**Table 1: Socio-Demographic Characteristics of the Respondents (n=295)**

Respondent characteristics	Category	Frequency	Percent
Age (in Years)	19-24	231	78.3
	25-29	53	18.0
	30 and above	11	3.7
Marital status	Single	251	85.1
	Married	39	13.2
	Divorce/Separated/Widow	5	1.7

Paternal education	No formal	11	3.7
	Primary	33	11.2
	Secondary	67	22.7
	College	120	40.7
Maternal education	No formal	18	6.1
	Primary	62	21.0
	Secondary	90	30.5
	College	65	22.0

### 3.2. General Knowledge of Emergency Contraceptives

The majority of the respondents (93.9%) had heard of Emergency Contraceptives (EC). A study by Nyambura *et al.* (2017), produced similar results, as 86.4% of university female students had heard of ECs. This means that the general knowledge about the EC is known to large share of female students in higher learning institutions. Moreover, among those who ever heard of ECs were able to indicate the time to take ECs, all of them mentioned the time which is less than 120 hours after having unprotected sex, which is in line with World Health Organization general recommendation (WHO, 2020). However, the findings in Figure 1 show variations on time that is appropriate for using ECs to realize the required results, such that 32.2% said that it is less than 12 hours, 9.4% reported less than 48 hours, 46.4% said less than 72 hours, 8.6% said less than 96 hours and 3.4% stated that it is appropriate to use ECs in less than 120 hours. This variation in the knowledge of proper time to use ECs was also observed in the study conducted by Kapoor *et al.* (2018) at Ahmedabad whereby 95% of the respondents said that use of ECs is within 72 hours after unprotected sex, while the study conducted by Mohammed *et al.* (2019) in Ghana reported more than half of the respondents (about 55%) were having the problem of indicating the correct time for intrauterine device (IUD) compared to about 80% who were correct in stating the time to take EC pills. However, respondents indicated that they lack proper knowledge of required timing for every type of EC pills. They only had the general understanding that EC pills should be taken within five days after unprotected sex. Such results signify the incompleteness of the information shared about ECs.



**Figure 1: Responses on the Timing for Taking ECs**

### 3.3. Use of Emergency Contraceptives among Female Undergraduate Students

Regarding the use of ECs, the study revealed that about 61.4% of the sampled respondents have used at least one of the EC methods. Furthermore, regarding the available options of ECs, the study found that 94% knew at least one of the two most common EC methods (pills and IUD). Responding to a question about who recommended the use of ECs for the first time, over half of the respondents (62.1%) disclosed that they had received recommendations from friends, and 23.6% had got recommendations from family members, relatives and college guardians (such as matrons and deans of students). Interestingly, very few female students (14.3%) received advice from medical staff. Generally, the source of information about EC determines its correctness and adequacy. The findings are in-line with Hoque *et al.*(2013), Mishore *et al.*(2019), and Sweya *et al.*(2016), where by very few sampled respondents received advice from medical staff. This finding indicates the inadequacy of information shared among female students and the resulting increased risk posed by the incorrect use of the ECs.

Additionally, 80 percent respondents pointed that cultural beliefs, a feeling of shame and stigmatization were reasons not to consult the medical staff on ECs issues. This has also been observed in other studies (Lebese *et al.*, 2013; Srikanthan & Reid, 2008). Findings from female medical staff aged 42 years' old who acted as Key Informant (KI), suggested that female students are reluctant to reveal that they have engaged in unsafe sex and are in need of ECs. The KI associated this unwillingness with shame and the stigma of being found to have been

engaged in pre-marital sex. Similarly, one dean of students, a man aged 55, said that the disgrace of being engaged in sexual activity while still in studies and before marriage, affects female students' freedom to consult medical staff on information about ECs.

Responding to reasons for using ECs, being involved in unprotected sex was the leading reason mentioned by majority (81.9%) of the respondents, followed by family planning objective (12.6%), and lastly (about 5.5%) claimed to use ECs as a precaution in the event of a perceived failure of their regular contraceptive method. However, having unprotected sex, especially given the possibility of conceiving, is likely to be connected to having poor sexual health information related to sexual matters. Furthermore, it was noted that the inadequacy or wrong information about ECs and family planning matters can result in young women to have future complications such as diseases and psychological problems (Amalba *et al.*, 2014; Darteh & Doku, 2016; Kgosiemang & Blitz, 2018; Mamabolo, 2017; Shiferaw *et al.*, 2015).

**Table 2: Usage of ECs among Female Undergraduate Students in Higher Learning Institutions in Dodoma (n=182)**

Variables	Category	Frequency	Percent
Ever Used ECs	Yes	181	61.4
	No	114	38.6
Recommendation for first time to use ECs	Friends and peers	113	62.1
	Family members and relatives	34	18.7
	Advice from health specialist	26	14.3
	Advice from guardian	9	4.9
Reason for using	Unprotected sex	149	81.9
	Family planning	23	12.6
	Regular EC failure	10	5.5
History of pregnancy	Yes	44	24.2
	No	138	75.8
No. of ECs method known	1	24	8.6
	2	254	91.4
Considers ECs to be affordable	Yes	150	82.4
	No	32	17.6
Perception on ECs safety	Unsafe	53	29.1
	Do not know	18	9.9
	Safe	111	61
Method of ECs used	Pills	257	87.4
	UID	37	12.6

Respondents presented mixed results regarding safety in terms of its effectiveness in preventing pregnancies as well as the side effects of taking ECs, with 29.1% of respondents indicating that ECs are unsafe, almost 10% do not know how safe the ECs are, and 61 percent considered ECs to be safe. This finding implies that information on the safety of ECs is inadequate. It was found that 82.4% of respondents consider ECs affordable while only 17.6% consider them unaffordable (they are expensive). This finding implies that price is not a big challenge for using ECs especially in consideration of consequences of the unplanned pregnancies to the female undergraduate students.

In addition, this study found that the majority (91.4%) of respondents knew two types of ECs and most of them (87.4%) have used pills while 12.6% have used IUD. This finding is similar to another study conducted in private universities in Nigeria where pills were the most common method (70.0%), followed by IUD (10.0%) (Awoleke *et al.*, 2015). It appears that the availability and usage of pills is easier as compared to IUD, although the latter is considered to be more effective. Moreover, it is considered that lack of adequate information on effectiveness of each EC type affects choice of appropriate type EC.

### **3.4. Factors Associated with the Use of ECs among Female Undergraduate Students**

The use of emergency contraception was observed to be significantly associated with ECs accessibility (at  $p < 0.01$ ). Having easy access to EC (whether at pharmacy or a health centre) can influence its use. On the side of ECs being associated to the level of maternal education is because of fact that educated mothers understand the positive effects of using ECs, and the negative effects of unplanned pregnancies during the time of studies, hence educated mothers are likely to make rational decisions and advise precautions against unplanned pregnancies when necessary (Darteh & Doku, 2016; Idris *et al.*, 2020; Mamabolo, 2017).

**Table 3: Factors Associated with Use of EC among Female Undergraduate Students**

Factor	Response category	Frequency of ever used ECs	% within category	$\chi^2$ value	
Age (years)					
	19 - 24	232	141	60.8	0.2
	25+	63	40	63.5	
Marital status					
	Singles	117	42	35.9	62.9***
	Married	39	22	56.4	
	In a relationship	139	117	84.2	
Source of Information about ECs					
	Friends	133	121	91	8.9*
	Family/Relatives	34	34	100	
	Health facilities	33	26	78.8	
ECs accessibility					
	Yes	223	165	74	56.4***
	No	68	16	23.5	
If ever pregnant					
	Yes	67	44	65.7	0.7
	No	228	137	60.1	
Ever gave birth					
	Yes	54	35	64.8	0.3
	No	241	146	60.6	
Maternal education					
	No formal education	18	6	33.3	7.5*
	Primary education	62	43	69.4	
	Secondary education and above	155	94	60.6	
Fear of side effects					
	Yes	118	73	61.9	0.02
	No	177	108	61	

Note\*\*\*Significant at 1%, \*\*Significant at 5%, and \* Significant at 10% levels.

#### 4. Conclusions and Recommendations

This study found that the majority of female undergraduate students have a general knowledge about emergency contraceptives. However, there is a limitation on specific information about the types of ECs especially on the timing of consumption after the

unprotected sex, hence the information observed to be inadequate. Moreover, the study found that, source of information concerns the use of ECs is not coming from the medical professionals rather comes from family members, relatives and friends, who are not necessarily having relevant information. The right practice requires information about ECs be primarily be communicated by medical professionals to ensure adequacy and accuracy thereby reducing the risks of EC use. In additional, stigma and culture observed to be reasons for the female undergraduate students to rely on family members, relatives and friends for the issues related to usage of ECs. This study therefore, recommends to the ministry responsible for health matters to develop policies that encourage health service providers to be leading source of information for not only emergence contraceptives related issues but also to other reproductive health matters. Further it is recommended that, affiliated organs in the higher learning institutions such as dean of students' offices, health centres, as well as students' organizations, should focus on promoting awareness to their respective communities for reduction of stigma to all reproduction health related matters.

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