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Magnitude of Repeat Use of Emergency Contraceptives Among Women of Reproductive Age in Tanzania

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Abstract

Background: Emergency contraceptives are intended to mitigate the risk of conceiving unwanted pregnancies following unprotected sexual intercourse. However, there is concern about the increasing repeated use of emergency contraceptive pills among women of reproductive age.

Objectives: This study aimed to determine the use and magnitude of repeated use of emergency contraceptive pills and associated factors among women of reproductive age.

Methods: A cross-sectional study was conducted in six out of twenty-six administrative regions of mainland Tanzania. A total of 1,284 women of reproductive age were interviewed using a structured questionnaire.

Results: The rate of ever use of emergency contraceptives was 17.4%. One out of 10 women of reproductive age have used emergency contraceptive pills in the previous 12 months. Nearly half of clients of emergency contraceptive pills were prevented by their spouses or partners from using regular family planning methods. Of the 224 users of emergency contraceptives, 198 (88.4%) affirmed that they had used the pills more than once. Of those, 159 (80.3%) reported to have used emergency contraceptive pills several times (more than three times). Knowledge of the use of emergency contraceptive pills varied with education, marital status, geographical location, age, and wealth index. Most women of reproductive age (82.9%) do not know the appropriate use of emergency contraceptive pills, particularly in Mbeya and Mwanza, where all interviewed women of reproductive age were not aware that emergency contraceptive pills are used to avoid unwanted pregnancy in emergencies only. A significantly low proportion of women of reproductive age in Mbeya (6.7%), adolescent girls (34.6%), slightly over one-third of married and unmarried women, and those in middle and lower wealth index knew the right time to take emergency contraceptive pills. A significantly low proportion of women of reproductive age in Mbeya (36.7%) agreed that emergency contraceptive pills are safe for use and that they can be recommended to a friend. Nearly one-third of women of reproductive age in Mwanza (27.3%), one-fifth of women of reproductive age with tertiary education (21.6%), and almost a quarter of employed women of reproductive age (24%) had a negative perception of the use of emergency contraceptive pills. Repeated use of emergency contraceptive pills was associated with the region of residence, the status of the use of regular FP methods, education, knowledge of indication and appropriate time to take emergency contraceptive pills, and perceived safety of emergency contraceptive pills.

Conclusion: Although the use of emergency contraceptives is still modest, the proportion of women of reproductive age who reported several repeated uses of emergency contraceptive pills is high, particularly so among women of reproductive age in Mwanza and Mtwara, those with tertiary education and those who do not know that prescription is not required to get emergency contraceptive pills. Interventions to educate women of reproductive age on indication and appropriate use of emergency contraceptives are required.

Keywords: Emergency Contraceptives, Pills, Repeated use, Tanzania

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Background

Women of reproductive age (WRA) may, at times, find themselves at risk of conceiving unintended pregnancy following unprotected sexual intercourse in a range of situations, including rape, drunkenness, and bribery. To mitigate this risk, WHO recommends making available over-the-counter emergency contraceptive pills (ECPs) without a doctor's prescription to women who wish to use them **(WHO, 2024)**. Several such pills are available, including those with ulipristal acetate (UPA) as the active ingredient and those with levonorgestrel (LNG) **(WHO, 2022)**. Usually, such pills are available in single-dose formulations or sometimes in split doses (**Atkins et al., 2021**).

Technically, emergency contraception refers to methods of contraception that can be used to prevent pregnancy after sexual intercourse. These are recommended for use within 5 days but are more effective the sooner they are used after the act of intercourse. The pills prevent pregnancy by preventing or delaying ovulation, and they do not induce an abortion. The copper-bearing IUD prevents fertilization by causing a chemical change in sperm and egg before they meet. Emergency contraception cannot interrupt an established pregnancy or harm a developing embryo (**WHO, 2018**).

The over-the-counter ECPs are very safe, with confirmed harmlessness to even women who cannot use routine hormonal contraceptive methods **(WHO, 2021; WHO, 2016)**. The ECPs have virtually no contraindications, partly due to the short-term nature of their use. The pills are also significantly efficacious, with the overall ability to prevent pregnancy by 95% **(WHO, 2021)**. However, several factors affect the effectiveness of ECPs, including the type of active ingredient and co-medications. Other user-related factors include the day within the menstrual cycle, the time lapse between intercourse and pill uptake, and body mass index (BMI) **(ECEC, 2023)**.

Since there are no absolute medical contraindications and no age limits for the use of emergency contraception, any woman or girl of reproductive age may need emergency contraception to avoid an unwanted pregnancy. In 2017, an estimated 308 million unwanted births were avoided because of the usage of modern contraception, including emergency contraceptives (**WHO,2019**). Between now and 2030, sub-Saharan Africa is projected to experience the largest increase in modern contraceptive use among its major regions (**UN, 2020**).

In Tanzania, the Family Planning guidelines recognize that all men and women, including young people (10–24 years of age), irrespective of their parity and marital status, are eligible to access accurate and complete family planning information, including ECPs, education, and services (**Mariki et al., 2022**). All individuals have a right to information about the benefits of family planning for themselves and their families. Individuals have the right to know where and how to obtain family planning information, both inside and outside a facility setting, to make informed choices about their method of preference **(TMDA, 2020)**. Clients also have a right to choose where to go for family planning services (i.e., physical location or service-delivery modes such as community-based family planning, pharmacy or over-the-counter service, hospital, health centre or family planning clinic) and the type of service provider with whom they feel most comfortable.

Accessibility of ECPs as over-the-counter drugs to end users has been argued to have multitudes of advantages, including imparting women with greater control over their health, reducing costs, and giving them convenience and confidentiality. On the other hand, there are concerns about the over-the-counter availability of ECPs, such that users miss personal contact with a healthcare provider for support and information. Without guidance from healthcare providers, there might be increased risky behaviour and misuse, including repeated use of the ECPs. This contrasts with the intended use of ECPs as they are not meant for regular use but rather as emergency intervention following unprotected sexual intercourse.

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The WHO has identified several niche areas where there is an information gap regarding the over-the-counter availability of ECPs, and one of them is whether women who access ECPs have adequate information to take the pills correctly. In Tanzania, among several emergency oral contraceptives, Postinor-2 (P2) is more popular (TMDA, 2015). A study conducted in the northern part of Tanzania reported that 24.4% of females have ever used emergency contraceptives, of which 90.2% used the ECPs several times (**Mariki et al., 2022)**. Overuse of ECPs has also been reported in Nigeria and Kenya (**Ajayi et al., 2017; Chin-Quee, 2014).** Recent anecdotal evidence indicates increasing repeat use of ECPs in Tanzania, but accurate data on ECPs repeat use and factors contributing to such practice is largely lacking. Therefore, this study was undertaken to determine the magnitude of repeated use of ECPs and identify factors contributing to repeated use among WRA.

Methods

Study design and sites

A cross-sectional study was conducted in six randomly selected regions of Tanzania's Mainland: Arusha, Dar es Salaam, Dodoma, Mwanza, Mbeya, and Mtwara.

Study population and sample size

With the accepted margin error of 2.5%, provided the confidence level is 95% and that 24% of WRA (married and unmarried) in Tanzania Mainland use ECs, the calculated sample size for women of reproductive age (WRA) was 1,129. After considering a non-response rate of 15%, the sample size was increased to 1,298. Dar Es Salaam region contributed 44% of the sample size. Thus, the proportion to population size technique was employed to sample the required number of study participants from three randomly selected councils.

Sampling procedures

A multistage sampling approach was employed to select WRA. In the first stage, 6 out of 26 (25%) regions. Except for Dar Es Salaam, in each of the remaining 5 regions, one council was randomly selected from a list of councils in the respective region. The selected councils included Meru, Kondoa, Rungwe, Masasi, and Magu in Arusha, Dodoma, Mtwara, Mbeya, and Mwanza regions, respectively (2nd stage). Due to its socioeconomic diversity and the fact that many WRA, Temeke, Ubungo, and Ilala councils in Dar es Salaam were randomly selected to participate in this study,

With the help of village or street leaders, a list of households with a woman of reproductive age (WRA) was prepared and used as a sampling frame in the respective villages and streets. A systematic sampling approach was used to select households. A WRA (15 – 49 years) was interviewed in each sampled household. However, where there was more than one eligible woman, the person to be interviewed was selected using a simple random sampling technique.

Data collection

A structured questionnaire was used to collect the required information, which included the sociodemographic profile of WRA, the use of ECPs, frequency of use, and the circumstances which led to the use of ECPs. Other collected information included knowledge on indication and appropriate time to take ECPs, awareness of ECPs availability in the market, and the fact that no prescription is required to get ECPs. Perceived ECP safety was assessed using a positive and negative statement with 5 response options: 1 strongly agree to 5 strongly disagree. In the analysis, the response to the negative statement was reversed, and the total score was generated by summing

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up the scores for positive and negative statements and then dichotomizing the score into agreed and disagreed.

Data analysis

Responses from open-ended questions were coded to generate quantifiable responses. Frequency distribution was used to study data patterns and search for inconsistencies. The bivariate association was deduced from the Chi-square test. Multivariate analysis was performed to explore how age and location interact with other social factors to influence access and use of ECPs. Comparison across stratified groups was done using Chi-square or other appropriate statistical tests. The wealth index was assessed using household dwellings and poor population indicators. The number of household members, building materials used for walls and floor, source of fuel for cooking, and household possessions, including land for cultivation and livestock, were summed up and created variables grouped into four quintiles (high, middle, low, and lower wealth index). Data was analysed using SPSS version 21.

Ethical considerations

Ethical clearance was sought from the Medical Research Coordinating Committee of the National Institute for Medical Research – Ref Number NIMR/HQ/R.8a/Vol.IX/4499. Permission to implement the study was sought from relevant authorities. Before any interview with individual respondents, the informed consent and assent forms (for study participants below 18 years) were read in a language the respondent understood. Privacy and confidentiality were maintained throughout the study. Participants were free to withdraw from the study at any point during the interview without worrying they would be penalized.

Results

Profile of study participants

The response rate was 98.9%, most respondents (61%) belonged to the middle wealth quintile, and over 40% were unmarried and attained primary and secondary education (Table 1). A significantly high proportion of WRA in the middle wealth quintile live in urban areas (not shown in the table: 75% urban versus 51.9% rural; P<0.0001). Mbeya (75%) and Dodoma (71.1%) had a significantly high proportion of WRA who peasants were. The mean age at marriage was 21 years (SD=3.9), and more than 10% of WRA in Mwanza (14.1%), Mtwara (13%), and Dodoma (11.8%) got married before the age of 18 years. Over half of WRA have heard about ECPs. However, a significantly low proportion of WRA in Mbeya (16.7%), Dodoma (24.5%), and Mtwara (34.5%), those with no formal education (36.2%) and those aged 40 – 44 years (41%), cohabiting (42%), peasants (37%), those in lower wealth index (42%) and rural dwellers (50%) have heard about ECPs (Table 1).

Table 1. Profile of the Interviewed Women of Reproductive Age and Those Who Have Heard About Emergency Contraceptive Pills (N = 1,284)

	Profile		Heard about ECPs	
	Number	Per cent	Number	Per cent
Age group				
15 – 19 years	185	14.4	95	51.4
20 – 24 years	301	23.4	188	62.5
25 – 29 years	270	21.0	168	62.2
30 – 34 years	217	16.9	124	57.1

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35 – 39 years	148	11.5	66	44.6
40 – 44 years	105	8.2	43	41.0*
45 – 49 years	48	4.5	31	53.4
Education level				
Primary	557	43.4	237	42.5
Secondary	555	43.2	345	62.2
Tertiary	125	9.7	116	92.8
No education	47	3.7	17	36.2*
Current marital status				
Married	541	42.1	267	49.1
Cohabiting	133	10.4	56	42.1*
Married but not living together	36	2.8	24	66.7
Not married	574	44.7	368	64.1
Occupation				
Peasant	288	22.4	97	33.7*
Petty business	504	39.3	298	59.1
Livestock	12	0.9	7	58.3
Employed	75	5.8	60	80.0
Self-employed	148	11.5	93	62.8
Student	153	11.9	98	64.1
Other	104	8.1	62	59.6
Wealth Index				
High	169	13.2	91	53.8
Middle	783	61.0	470	60.0
Low	287	22.4	135	47.0
Lower	45	3.5	19	42.2*
Residence				
Urban	504	39.3	320	63.5
Rural	780	60.7	295	50.6*
All	**1,284**	**100.0**	**715**	**55.7**

Use of Emergency Oral Contraceptives

Of the interviewed WRA, 17.4% reported to have ever used ECPs. The use of ECPs varied slightly in terms of education, socioeconomic status, age, location of residence, and marital status. A significantly high proportion of those who have ever used ECP were from Magu-Mwanza (36.4%), followed by Masasi-Mtwara (26.2%) and Meru-Arusha (20%). Among WRAs who used ECPs, 20.3% were aged 25 – 29 years, and 19.2% were unmarried.

Table 2. Prevalence of ECPs Use in Different Periods (N=1,284)

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Council	1 – 7 days	2 – 4 weeks	1 – 3 months	4 – 6 months	7 – 12 months	>12 months	Ever used	Previous 12 months	Used at least once
Meru	2.6	2.6	2.6	4.0	2.0	13.2	20.5	13.1	27.2
Ilala	3.1	0.1	1.3	0.0	0.4	13.8	4.9	5.3	19.1
Ubungo	4.5	5.1	4.5	4.5	0.0	9.6	17.8	18.5	28.0
Temeke	0.4	0.0	2.6	4.4	2.6	19.3	13.2	10.1	29.4
Kondoa	2.5	0.0	3.8	0.6	1.9	9.4	8.2	8.8	18.2
Rungwe	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	15.0
Masasi	0.0	0.0	1.2	2.4	7.1	47.6	26.2	10.7	58.3
Magu	0.5	0.5	2.3	2.7	4.1	8.2	36.4	10.0	36.4
All	**1.9**	**1.1**	**2.5**	**2.5**	**2.5**	**14.3**	**17.4**	**10.1**	**24.4**

To check on questions determining the prevalence of lifetime use of ECPs, each respondent was asked when the last time she used ECPs was. The percentage of WRA who reported to have used ECPs at least once was increased from 17.4% to 24.4%. None of the WRA in Rungwe reported to have used ECPs in the past 12 months. In Masasi-Mtwara, a significantly high proportion of WRA (58.3%; P value=.001) reported to have used ECPs at least once in their lifetime (Table 2). The use of ECPs at least once was commonly reported by young women aged 20 – 24 years and women aged 40 - 44 years (Table 3). High use of ECPs was observed in Councils, where most interviewed WRAs acknowledged that they were not using any of the regular FP methods (Figure 1).

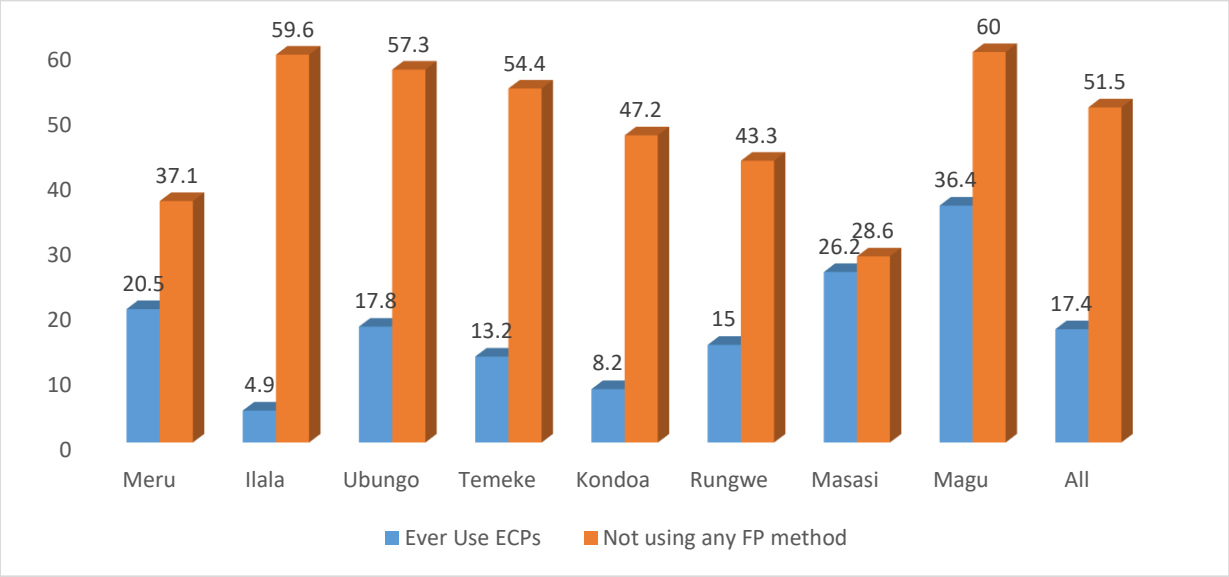

Figure 1. Relationship Between ECPs and Current Use of FP methods

Repeat Use of Emergency Oral Contraceptives

Among WRA who used ECPs in the past 12 months, 54.5% reported repeat use, and a substantial proportion of users (25.6%) consumed ECPs up to three times in a week (Table 4). The councils with a high proportion of WRA who had used ECPs more than three times in the past 12 months included Magu (100%), Kondoa (75%), Masasi (70%), and Ubungo (61%) (Table 5). In addition, nearly half of

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those who used ECPs more than 3 times in the past 12 months were aged 15 – 19 years (42.9%) and 30 – 34 years (Table 3).

Table 3. Prevalence of ECPs Use by Age Group (N=1,284)

Age group	1 – 7 days	2 – 4 weeks	1 – 3 months	4 – 6 months	7 – 12 months	>12 months	Ever used	Previous 12 months	Used at least once
15 – 19	1.6	0.5	1.6	2.2	1.6	**19.5**	13.5	7.6	27.0
20 – 24	1.3	1.7	4.7	2.0	2.3	11.0	16.9	12.0	22.9
25 – 29	2.6	1.9	3.3	1.9	3.3	15.6	19.6	13.0	**28.5**
30 – 34	0.9	0.9	0.9	4.6	2.3	14.3	**20.3**	9.7	24.0
35 – 39	1.4	0.0	0.0	2.7	2.0	16.9	18.2	6.1	23.0
40 – 44	1.0	0.0	1.9	1.9	0.0	7.6	17.1	4.8	12.4
45 – 49	8.6	1.7	3.4	1.7	1.7	13.8	10.3	**17.2**	**31.0**
All	**1.9**	**1.1**	**2.5**	**2.5**	**2.2**	**14.3**	**17.4**	**10.1**	**24.4**
P value	**.01**	**.01**	**.01**	**.01**	**.01**	**.01**	**.39**	**.01**	**.04**

Table 4. Proportion of WRA Reporting Repeat ECPs Use by Period of Consumption (N = 313)

Period	2 – 3 times	>3 times	All
1 – 7 days	25.6	8.8	8.1
2 – 4 weeks	12.8	5.0	6.6
1 – 3 months	15.4	12.6	13.1
4 – 6 months	10.3	16.4	15.2
7 – 12 months	2.6	13.8	11.6
>12 months	28.2	44.0	40.9
Ever used	28.2	31.4	30.8
Past 12 months	66.7	51.6	54.5

Table 5. Proportion of WRA who Used ECPs More Than Three Times by Council and Period of Consumption (N=198)

	1 – 7 days	2 – 4 weeks	1 – 3 months	4 – 6 months	7 – 12 months	>12 months	Ever used	Past 12 months
Meru	7.4	3.7	11.1	22.2	11.1	40.7	40.7	55.6
Ilala	8.3	-	16.7	-	-	58.3	25.0	25.9
Ubungo	6.5	19.4	19.4	16.1	-	38.7	22.6	61.3
Temeke	2.6	-	7.9	23.7	13.2	50.0	15.8	47.4
Kondoa	0.0	-	50.0	0.0	25.0	25.0	75.0	75.0
Rungwe	-	-	-	-	-	-	-	-
Masasi	-	-	-	20.0	50.0	30.0	30.0	70.0
Magu	2.7	10.8	10.8	21.6	45.9	8.1	45.9	100.0
All	**3.8**	**5.0**	**12.6**	**16.4**	**13.8**	**44.0**	**31.4**	**51.6**

Circumstances of Oral Emergency Contraceptive Use

A significantly high proportion of WRA who used ECPs at any point in their lives (47.9%) said their spouses/partners prevented them from using regular FP methods (Figure 2).

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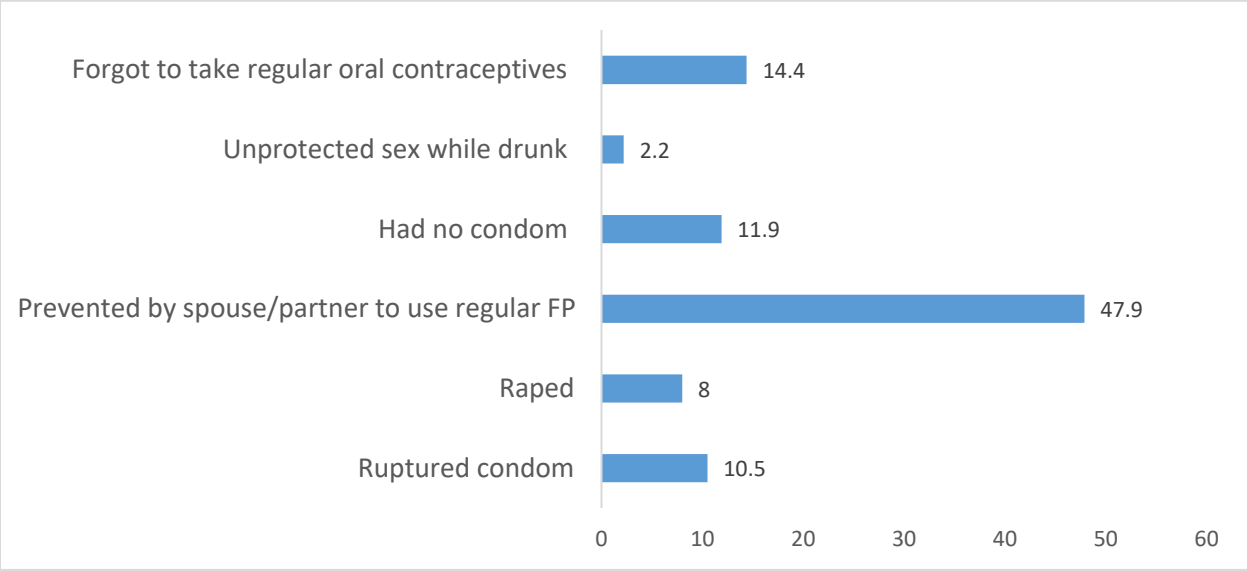

Figure 2. Circumstances which led to the use of Emergency Contraceptive Pills

Knowledge of Appropriate Use and Right Time to Take ECPs

Over half of the interviewed did not know the correct use of ECPs or when the right time to take them was. Knowledge varied with geographical location, age, occupation, education, and marital status. A high proportion of WRA in Kondoa and Rungwe, unmarried adolescent girls and older women, those with less or no education, and rural dwellers had limited knowledge of the appropriate use of ECPs and the right time to take them (Table 6).

Table 6. Knowledge of Appropriate Use and Most Right Time to Take Emergency Contraceptive Pills (N = 1,284)

	Don't know the appropriate use of ECPs n (%)	Don't know the right time to take ECPs n (%)
All	**735 (57.2)**	**750 (58.4)**
Council		
Meru	76 (50.3)	80 (53.0)
Ilala	130 (57.8)	**155 (68.9)****
Ubungo	83 (52.9)	88 (56.1)
Temeke	110 (48.2)	127 (55.7)
Kondoa	**127 (79.9)****	**128 (80.5)****
Rungwe	**51 (85.0)****	**54 (90.0)****
Masasi	58 (69.0)	16 (19.0)
Magu	100 (45.5)	102 (46.4)
Age group		
15 – 19 years	**119 (64.3)****	110 (59.5)

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20 – 24 years	153 (50.8)	167 (55.5)
25 – 29 years	141 (52.2)	146 (54.1)
30 – 34 years	118 (54.4)	125 (57.6)
35 – 39 years	89 (60.1)	90 (60.8)
40 – 44 years	**72 (68.6)****	**77 (73.3)****
45 – 49 years	**43 (74.1)****	35 (60.8)
Education level		
Primary	**366 (65.7)****	**381 (68.4)****
Secondary	298 (53.7)	296 (53.3)
Tertiary	38 (30.4)	43 (34.4)
No education	**33 (70.2)****	**30 (63.8)****
Marital status		
Married	**455 (64.1)****	**463 (65.2)****
Unmarried	280 (48.8)	287 (50.0)
Occupation		
Peasant	**204 (70.8)****	198 (68.8)
Petty business	269 (53.4)	288 (57.1)
Livestock	**11 (91.7)****	**9 (75.0)****
Employed	32 (42.7)	30 (40.0)
Self-employed	77 (52.0)	74 (50.0)
Student	85 (55.6)	82 (53.6)
Other	57 (54.8)	69 (66.3)
Wealth Index		
High	91 (53.8)	91 (53.8)
Middle	434 (55.4)	447 (57.1)
Low	179 (62.4)	179 (62.4)
Lower	31 (68.9)	33 (73.3)
Residence		
Urban	270 (53.3)	309 (61.3)
Rural	**465 (59.6)***	441 (56.5)

**P<0.001; *P<0.05

Perception of WRA on the use and safety of ECPs

Generally, WRAs had a positive perception of using ECPs. However, a significantly low proportion of WRAs in Mbeya (36.7%) agreed that ECPs are safe for use and can be recommended to a friend. Nearly one-third of WRAs in Mwanza (27.3%), one-fifth of WRAs with tertiary education (21.6%), and almost a quarter of employed WRAs (24%) had a negative perception of the use of ECPs (Table 7).

Table 7. Perception on Use of ECPs Among of Women of Reproductive Age

	Agreed that ECPs are safe for use and can be recommended to a friend (Positive perception) – n (%)	Agreed that ECPs are not safe, kill the foetus, promote promiscuous and spread of STIs/HIV (Negative perception) – n (%)
All	978 (76.2)	142 (11.1)
Council		

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Meru	142 (94.0)	17 (11.3)
Ilala	135 (60.0)	16 (7.1)
Ubungo	103 (65.6)	18 (11.5)
Temeke	182 (79.8)	17 (7.5)
Kondoa	131 (82.4)	9 (5.7)
Rungwe	**22 (36.7)***	1 (1.7)
Masasi	71 (84.5)	4 (4.8)
Magu	192 (84.5)	**60 (27.3)***
Age group		
15 – 19 years	133 (71.9)	27 (14.6)
20 – 24 years	242 (80.4)	31 (10.3)
25 – 29 years	213 (78.9)	29 (10.7)
30 – 34 years	172 (79.3)	26 (12.0)
35 – 39 years	112 (75.7)	12 (8.1)
40 – 44 years	**69 (65.7)***	9 (8.6)
45 – 49 years	**37 (63.8)***	8 (13.8)
Education level attained		
Primary	432 (77.6)	41 (7.4)
Secondary	403 (72.6)	70 (12.6)
Tertiary	111 (88.8)	**27 (21.6)***
No education	**32 (68.1)***	4 (8.5)
Current marital status		
Married	407 (75.2)	43 (7.9)
Cohabiting	106 (79.7)	9 (6.8)
Not living together, married	23 (63.9)	4 (11.1)
Not married	442 (77.0)	86 (15.0)
Occupation		
Peasant	219 (76.0)	9 (3.1)
Petty business	384 (76.2)	54 (10.7)
Livestock	7 (58.3)	1 (8.3)
Employed	59 (78.7)	**18 (24.0)***
Self-employed	115 (77.7)	22 (14.9)
Student	116 (75.8)	27 (17.6)
Other	78 (75.0)	11 (10.6)
Wealth Index		
High	125 (74.0)	25 (14.8)
Middle	606 (77.4)	94 (12.0)
Low	212 (73.9)	21 (7.3)
Lower	35 (77.8)	**2 (4.4)***
Location		
Urban	368 (73.0)	**78 (15.5)***
Rural	**610 (78.2)***	64 (8.2)

*P<0.01

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Factors associated with repeated ECP use

In multinomial logistic regression, councils where WRA live, age and occupation maintained their significant association with repeat use of ECPs. WRA in Temeke (OR = 0.07; 95% CI 0.01 – 0.34) and Masasi (OR = 0.03; 95% CI 0.002 – 0.37) were less likely to report repeat use of ECPs in three months when compared to WRA in Magu. Compared with other occupations, peasants, petty business, livestock keepers, employed, self-employed, and students were less likely to report repeat use of ECPs within three months (Table 8). However, when interaction term access point and access rating were included in the model, WRA in urban with easy access to health facilities were more likely to report repeat use of ECPs in three months (OR=2.9, 95% CI 11.0 – 8.4; p=0.044). Similarly, WRA in Ubungo (OR = 7.9; 95% CI 1.2 – 44.5; p = 0.029) and Ilala (OR = 5.7, 95% CI 1.2 – 26.9) WRA who acknowledged that there is no difficulty in accessing ECPs were more likely to report repeat use within the three months.

Table 8. Factors Associated with Repeated Use of Emergency Contraceptive Pills

	Odd Ratio	**95% CI**
Council		
Meru	1.5	0.28 – 7.81
Ilala	0.8	0.78 – 3.87
Ubungo	2.8	0.74 – 10.9
Temeke	**0.1**	**0.01 – 0.34**
Kondoa	3.6	0.65 – 24.5
Rungwe	**-**	-
Masasi	**0.03**	**0.002 – 0.37**
Magu	1	
Age group		
15 – 19 years	0.23	0.03 – 1.68
20 – 24 years	0.47	0.19 – 2.48
25 – 29 years	0.20	0.04 – 1.07
30 – 34 years	**0.07**	**0.01 – 0.48**
35 – 39 years	**0.03**	**0.004 – 0.31**
40 – 44 years	0.29	0.03 – 2.94
45 – 49 years	1	
Education level attained		
Primary	0.46	0.07 – 3.09
Secondary	0.29	0.04 – 1.96
Tertiary	0.60	0.08 – 4.47
No education	1	
Current marital status		
Married	1.05	0.46 – 2.43
Unmarried	1	
Occupation		
Peasant	**0.15**	**0.03 – 0.95**
Petty business	**0.11**	**0.03 – 0.41**
Livestock	**0.02**	**0.001 – 0.912**
Employed	**0.15**	**0.03 – 0.79**

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Self-employed	**0.06**	**0.01 – 0.35**
Student	**0.05**	**0.01 – 0.33**
Other	1	
Wealth Index		
High	0.9	0.09 – 21.5
Middle	1.2	0.13 – 22.1
Low	1.2	0.11 – 22.1
Lower	1	
Location		
Urban	1.8	0.62 – 6.10
Rural	1	
ECPs are safe for use	1.2	0.62 – 6.10
ECPs promote promiscuous	3.2	1.01 – 10.5
Do not know correct ECPs use	0.9	0.38 – 1.97
Do not know right time to take ECPs	0.9	0.24 – 3.23
Not using any FP method	2.1	0.95 – 4.83

Discussion

Coercive intercourse towards women of reproductive age (WRA) is among a range of causal situations that often put this group of people into conceiving unintended pregnancies **(Fau´ndes *et al.*, 2003)**. The worldwide introduction of emergency contraceptives, as recommended by the WHO, aims to safeguard WRA against this socioeconomic burden of medical importance **(WHO, 1998)**. The simplistic nature of the use of pill-forms of these contraceptives, coupled with their excellent safety profile, have made authorities all over the world categorize them as over-the-counter drugs and, therefore, bypass the need for a doctor's prescription **(Jackson et al., 2003; Leelakanok *et al.*, 2020)**. This enhances access and makes them ideal for risk mitigation against unintended pregnancies to WRA in emergencies **(Mariki *et al.*, 2022)**.

This study has revealed a well-distributed clientele of ECPs across age groups, geographical locations, economic status, and marital status in Tanzania. The overall use rate of 17.4% is distributed across regions, ranging from the lowest in Dodoma (8.2%) to the highest in Mwanza (36.4%). The use rate of ECPs is more meaningfully interpreted when compared to the rate of unintended pregnancies in the study society. According to one organization that deals with reproductive health issues, Guttmacher, the annual average occurrences of unintended pregnancies in the years 2015 through 2019 in Tanzania was 105 pregnancies per 1,000 women aged 15 to 49 years (Guttmacher Institute**, 2022)**. The East African average was 99 pregnancies per 1,000 WRA. By implication, therefore, the revealed rate of use of 17.4% still leaves around 10% of WRAs to unintended pregnancies.

Multitudes of reasons have been put forward by the interviewees in this study as to why they use ECPs. The reasons include rape, raptured condom, alcohol influence, lack of condom, partner's objection to using regular FP methods, and forgetfulness to take regular oral contraceptives. For all these reasons, mentioning the partner's objection to regular FP methods is the most common. As such, this reason alone is almost mentioned more often than all other reasons combined. This implies a continued presence of male dominance and the ill effects of Tanzanian society on decision-making.

A notable disparity between Mbeya and the other regions in the reported use rate within the past 12 months calls for attention. Mbeya has shown a zero-use rate among the interviewees in the past 12

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months. Without an immediate probable reason for this disparity, it may be assumed that the results have occurred by chance due to sampling. Nonetheless, particular attention may be needed in this region. This calls for further research to unveil any hidden reason behind this.

Despite the unmatched proportion of users of ECPs versus the actual need for the service, as shown above, there are concerns that there is a probable irrationality, particularly overuse of emergency contraceptive pills in Tanzanian society. This concern comes from a range of hints starting from speculative experts' ideas, anecdotal literature as well as sporadic studies done in patchy geographical areas that do not ideally represent the whole country **(Kagashe *et al.*, 2013; Mariki *et al.*, 2022; Samson *et al.*, 2023; Hinju *et al.*, 2005; Karwani *et al.*, 2024)**. This was the reason why this study was carried out. This study has revealed a significant level of irrational overuse of emergency contraceptive pills among users in Tanzania. This high proportion of WRAs who overuse ECPs accounts for almost 80% of all such users.

Although ECPs have been commended for their impressive tolerability by the users and appreciable protection against unintended pregnancies, these pills are not ideal for regular use. Replacing regular FP methods with ECPs or any level of overuse of the ECPs has to be avoided for many reasons. These include the fact that ECPs are less effective than regular contraceptive methods. Regular contraceptives like birth control pills, intrauterine devices (IUDs), and implants provide more reliable and consistent protection against pregnancy when used correctly. Emergency contraceptive pills are designed for occasional emergencies and must be taken within a specific time frame after unprotected intercourse (usually within 72-120 hours) **(Mariki *et al.*, 2022)**. This timing can be difficult to manage consistently and is less practical than regular contraceptives.

From a biological point of view, ECPs contain higher doses of hormones compared to regular contraceptive pills. Frequent use of high doses can lead to more pronounced side effects such as nausea, irregular bleeding, and hormonal imbalances (**Leelakanok *et al.*, 2020**). Other rational reasons that have excluded ECPs from regular use include menstrual cycle disruption, where regular use of ECPs can lead to irregular menstrual cycles, making it difficult to predict ovulation and menstrual periods, which can cause additional stress and uncertainty. Emergency contraceptive pills also do not protect against sexually transmitted infections (STIs); instead, consistent use of condoms, in conjunction with regular contraceptives, is recommended for STI prevention. Consideration of costs and accessibility is also important; it should be noted that regular use of ECPs can be more expensive and less accessible compared to obtaining a prescription for regular contraceptives, which are often covered by insurance and available in longer-term supplies. Therefore, it is recommended to use more effective, lower-dose, and more manageable methods of contraception for ongoing family planning needs rather than relying on ECPs.

Conclusion

By and large, this study reveals two main issues of concern about ECPs in Tanzanian society: the presence of a significant number of WRA who still do not use ECPs despite their exposure to unconsented yet unprotected intercourse, thus leading to unintended pregnancy and the presence of a significant number of WRA who irrationally use ECPs by making them their regular FP methods. It is recommended that educational programs, particularly for women of reproductive age, be introduced to society to bridge this knowledge gap on the proper use of ECPs.

Study limitations

This study divulges the existing situation of ECP overuse in Tanzania by limiting its scope to quantitative methods. However, with limited discussion of the reasons behind it, it hardly offers solutions to mitigate the overuse. Therefore, further research of a qualitative nature is called for.

Conflict of interest: None.

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