

Determinants of Modern Contraception use Among Reproductive Age Women in Cameroon.

Michael guy Toguem (✉ tgmic91@gmail.com)

UNCIAF University

Research

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Abstract

Background: In Cameroon, 23% of married women, 34% of sexually active single women have unmet needs for family planning and 58% of reproductive age women are not interested in family planning. This contributes to the high mother mortality rate, which is at 600 per 100.000 live births. In this study, we tried to identify the factors contributing to the current use of modern contraception by Cameroonian women so that they can be act on to meet the unmet need for modern contraception.

Methods: The study uses data from 12,411 women aged from 15 to 49 years old included in the demographic health survey of Cameroon 2018/19. Bivariate, then multivariate logistic regression analysis were conducted on the study outcome of Modern versus non-modern contraception. Statistical significance was taken at $p < 0.05$.

Results: We found out that 18% of the women in Cameroon use a modern contraception. The main determinants for this were; not working, increasing socioeconomic class, no more wanting children, wanting to delay the next childbirth by at least 2 years, and history of domestic violence.

Conclusion: The above factors should be considered in the making of a national contraception improvement plan. Meanwhile, none working women being more likely to use a modern contraception should be considered with some reserve because this is a highly unexpected finding.

Plain English Summary

In Central and West Africa, 10% of women between 15 and 19 years old have a baby. Cameroon is a lower middle income country in Central Africa. Here, 600 women die for every hundred thousand life births. In high schools, young girls, when found pregnant are expelled from school if they are not married. In addition to this, 23 women out of one thousand risked their lives in 2010 through clandestine abortion. Modern contraceptives can be use to prevent unwanted pregnancies. This is the reason why we seek to identify the raison why some women in Cameroon use or do not use modern contraception.

We got information on 12,411 Cameroonian women aged 15 to 49 years old from the demographic health survey 2018/19 of Cameroon. This is a nationally representative data collection on the population of Cameroon, except for the south west region. This dataset includes information on procreation, contraception, sociodemographic data and more. We analysed this data and found out that 18% of women use a modern contraception in Cameroon.

They do so because they are jobless, do not want more children, want to delay the next childbirth by at least 2 years, when they have been victim of domestic violence, or when they are from higher socio economic classes.

In other to address the unmet need for contraception in Cameroon, women corresponding to the above description can be targeted in priority because, they are most likely to accept to use a modern

contraception.

Background

Contraception is all the means used to prevent pregnancy [1]. In line with the sustainable development goal indicator number 3.7.1, 75.7% of the needs of women for contraception were supposed to be met by 2019 but less than half of these needs have been met in middle and west Africa [2]. Here we define a need for contraception as a fertile woman who is not pregnant and wants to delay her next child birth of at least two years; a women whose current pregnancy is unwanted or consecutive to the failure of a family planning or; a woman in the postpartum period whose last childbirth in the last 2 years was unwanted or consecutive to the failure of a family planning. Meeting these needs implies giving to every woman the modern contraception method that corresponds to her needs and her preferences [3].

In central and west Africa each woman has on average 5 to 6 children and 10% of girls aged between 15 and 19 years have a baby. Each year, 100,000 women are dying of preventable pregnancies; all this illustrating the 24% unmet women's needs for contraception in these regions [3].

Cameroon is a lower middle income country, located in central Africa, with a population of roughly 25 million people and a sex ratio of 1 in 2018 [4]. In Cameroon, 23% of married women and 34% of sexually active single women have unmet needs for family planning [5]. Around 48% of sexually active unmarried women use any type of contraception. Some of the barriers to accessing contraception in Cameroon include several misconceptions about contraception, the cost, the limited options, and so on [6–8]. This partly explains the high level of unplanned pregnancies and the mother mortality rate, which is at 600 per 100.000 live births [9]. Providing access to their favourite contraceptive method to these women can improve the health of all Cameroonians and the standard of life. A spacing of birth of 2 to 3 years reduces the infant mortality rate by 45% compared to when this is less [2]. This explains why it is important to identify these determinants of the use or non-use of modern contraception by women in Cameroon. This will allow us to act promptly on them to feel the gap of unmet need for family planning more efficiently and effectively; thereby contributing to the development of Cameroon by improving the literacy rate and the rights of women, reduction in maternal mortality rate and neonatal mortality among others [2]. Meeting these needs may also contribute to reduce the proportion of women who currently are not interested by any family planning which is at 58% [5]. These are the reasons why, we asked ourselves; what are the determinants for the use or non-use of modern contraceptive methods among women in Cameroon?

Methods

Study Design

The study was a retrospective cross-sectional study that extracted data from the 2018 demographic health survey (DHS) data set of Cameroon.

Study Population

The study population consisted of women of reproductive age: 15–49 years old who consented to participate in the DHS program. From this population were excluded pregnant women, and those with incomplete data on current family planning method.

Study variables

The study variables included socio-demographic and behavioural variables. These variables are as listed: age, marital status, number of co-wives, age at first cohabitation, highest educational level, religion, work status, region, type of place of residence (urban/rural), number of children born, number of sons dead, daughters dead, number of children alive, sex of children, number of household members, number of children under 5 in households, sex of household head, age of household head, wealth index combined, wealth index for urban/rural, ever had a terminated pregnancy, time since last sex, desire for more children, husband's desire for children, exposure to need for contraception, decision maker for using contraception, person who usually decides on respondent's health care, ever been humiliated by husband/partner, ever been threatened with harm by husband/partner, ever been insulted or made to feel bad by husband/partner, ever experienced any form of violence, covered by health insurance, number of caesarean deliveries.

Data Management

Data was cleaned and analyzed using R version 4 for windows. The recoding of variables and the study outcomes was done as per previous literatures. The study objective was to assess factors influencing the use of modern contraceptive. A binary outcome variable was generated by coding 1 for the use of modern contraceptive and 0 for the non-use of modern contraceptive or not using at all any contraceptive. The outcomes were classified as shown in Table 1

Table 1
categories definition

No modern contraceptives	Modern contraceptives		
	Short acting	Long acting	
		Reversible	None reversible
	- morning after pill	- Intra uterine devices	- female sterilization
	- male condom	- injectables	- male sterilization
	- female condom	- implants	
		- pills	
		- other modern method	

Data Analysis

Data was analyzed using R version 4.0 for Windows. The participant characteristics were presented by use of frequencies and percentages for categorical variables and were stratified by type of family planning method. Difference between these groups were assessed by use of chi-square statistics and fisher's exact count for variables that had cell counts less than 5. The prevalence of family planning use was presented by use of frequencies and percentages. Bivariate logistic regression analysis was conducted for the study outcome of Modern versus non-modern contraceptives. Variables that had a $p < 0.1$ in the bivariate logistic regression analysis were fit in the multivariate logistic regression analysis. All the study data was weighted. Associations were reported by use of unadjusted and adjusted odds ratios with their respective 95% confidence intervals (CIs). Statistical significance is taken at $p < 0.05$.

Results

Participants' characteristics

The study analyzed data from 12,411 women aged 15 to 49 years old. All the participants had had sex at least once in their lives. We found out that, the biggest age category in this group is 20 to 29 years old, representing 34% (4,185 women) of the studied population. Of all the women included in the study, 56% (6,965 women) were living in an urban area and 44% (5,446 women) in the rural area; 55% (6,773) were married or cohabiting, and 45% (5,638) were single, separated or widowed.

Modern contraception use

Of the included 12,411 women, 18% (2,231 women) were using a modern contraception split into 9.8% using a short acting contraception, 8.2% a long acting contraception, 8% a long acting reversible, and 0.2% a long acting non reversible.

a. Factors associated with the use or non-use of modern contraceptives

On the univariate regression model, the main factors associated with an increased likelihood of using a modern contraception were: age below 40, increasing level of education, not working, increasing wealth, history of terminated pregnancy, desire to delay or stop childbirth, ever been victim of domestic violence, being cover by a health insurance, the household head being a female. People from the East region and Catholics were the most likely to use a modern contraception ($p < 0.05$).

The factors found to be associated with a lesser likelihood of use of modern contraception were: increasing number of co-wives in a polygamous marriage, having more than two children alive, having had a death child, decision about the respondent's healthcare made only by the partner, postpartum period, husband wanting more children, and living in a rural area. Women from the Adamawa region were the less likely to use a modern contraception ($p < 0.05$).

There was no association between the use of modern contraception and marital status, sex of children, number of household members, and decision maker for using contraception. (Table 2)

Table 2
univariate regression comparing the use of modern contraception vs non-use of modern contraception

Characteristic	OR ¹	95% CI ¹	p-value
Age (years)			
<i>19 and below</i>	—	—	
<i>20–29</i>	2.64	2.22, 3.12	< 0.001
<i>30–39</i>	2.11	1.73, 2.57	< 0.001
<i>40–49</i>	0.91	0.70, 1.18	0.5
Marital status			
<i>Married/Cohabiting</i>	—	—	
<i>Single/Separated/Widowed</i>	1.05	0.93, 1.18	0.4
Number of co-wives			
<i>None</i>	—	—	
<i>One</i>	0.47	0.37, 0.60	< 0.001
<i>Two</i>	0.40	0.25, 0.65	< 0.001
<i>Three and more</i>	0.18	0.08, 0.39	< 0.001
<i>Don't know</i>	1.21	0.82, 1.78	0.3
Age at first cohabitation			
<i>10–14</i>	—	—	
<i>15–19</i>	1.49	1.20, 1.85	< 0.001
<i>20–24</i>	1.98	1.57, 2.50	< 0.001
<i>25–29</i>	1.72	1.29, 2.31	< 0.001
<i>30 +</i>	0.95	0.58, 1.55	0.8
Highest educational level			
<i>No education</i>	—	—	
<i>Primary</i>	5.01	3.88, 6.46	< 0.001
<i>Secondary</i>	6.92	5.31, 9.01	< 0.001
<i>Higher</i>	9.96	7.14, 13.9	< 0.001
Religion			

Characteristic	OR¹	95% CI¹	p-value
<i>Catholic</i>	—	—	
<i>Protestant</i>	0.72	0.62, 0.83	< 0.001
<i>Other Christians</i>	1.03	0.85, 1.25	0.7
<i>Muslim</i>	0.33	0.26, 0.41	< 0.001
<i>Animist</i>	0.14	0.06, 0.37	< 0.001
<i>None</i>	0.60	0.37, 0.98	0.040
<i>Other</i>	0.77	0.36, 1.66	0.5
Work status			
<i>Working</i>	—	—	
<i>Not Working</i>	1.36	1.21, 1.54	< 0.001
Region			
<i>Adamawa</i>	—	—	
<i>Centre (without Yaounde)</i>	5.61	3.33, 9.46	< 0.001
<i>Douala</i>	3.75	2.25, 6.25	< 0.001
<i>East</i>	7.67	4.48, 13.1	< 0.001
<i>Far-North</i>	1.30	0.72, 2.33	0.4
<i>Littoral (without Douala)</i>	2.83	1.56, 5.16	< 0.001
<i>North</i>	1.16	0.69, 1.96	0.6
<i>North-West</i>	3.77	2.24, 6.35	< 0.001
<i>West</i>	3.81	2.32, 6.27	< 0.001
<i>South</i>	2.91	1.69, 5.04	< 0.001
<i>South-West</i>	3.90	2.34, 6.53	< 0.001
<i>Yaounde</i>	5.72	3.50, 9.35	< 0.001
Type of place of residence			
<i>Urban</i>	—	—	
<i>Rural</i>	0.51	0.41, 0.62	< 0.001
No. of children born			
<i>1</i>	—	—	

Characteristic	OR¹	95% CI¹	p-value
<i>2-3</i>	1.04	0.89, 1.22	0.6
<i>4+</i>	0.67	0.58, 0.77	< 0.001
No of sons died			
<i>One</i>	—	—	
<i>One</i>	—	—	
<i>Two</i>	0.73	0.59, 0.92	0.006
<i>Three</i>	0.51	0.33, 0.78	0.002
No. of daughters died			
<i>One</i>	—	—	
<i>One</i>	—	—	
<i>Two</i>	0.72	0.59, 0.89	0.002
<i>Three</i>	0.46	0.28, 0.75	0.002
No. of children alive			
<i>One</i>	—	—	
<i>Two</i>	1.02	0.87, 1.19	0.8
<i>Three</i>	0.69	0.60, 0.79	< 0.001
Sex of children			
<i>Both female and male</i>	—	—	
<i>Female only</i>	1.11	0.95, 1.30	0.2
<i>Male only</i>	1.16	0.97, 1.39	0.11
Number of household members			
<i>1-3</i>	—	—	
<i>4-5</i>	1.06	0.86, 1.30	0.6
<i>6-10</i>	0.97	0.82, 1.15	0.7
<i>11+</i>	0.91	0.72, 1.16	0.5
Number of children under 5 in households			
<i>None</i>	—	—	
<i>One</i>	1.24	1.08, 1.42	0.003

Characteristic	OR¹	95% CI¹	p-value
<i>Two</i>	1.14	0.99, 1.31	0.070
<i>3 +</i>	1.13	0.95, 1.33	0.2
Sex of household head			
<i>Male</i>	—	—	
<i>Female</i>	1.19	1.04, 1.35	0.009
Age of household head			
<i>29 and below</i>	—	—	
<i>30–39</i>	0.93	0.77, 1.12	0.4
<i>40–49</i>	0.70	0.58, 0.84	< 0.001
<i>50–59</i>	0.67	0.55, 0.82	< 0.001
<i>60 +</i>	0.68	0.56, 0.83	< 0.001
Wealth index combined			
<i>Poorest</i>	—	—	
<i>Poorer</i>	2.96	2.09, 4.21	< 0.001
<i>Middle</i>	4.07	2.82, 5.89	< 0.001
<i>Richer</i>	4.93	3.43, 7.09	< 0.001
<i>Richest</i>	5.62	3.89, 8.14	< 0.001
Wealth index for urban/rural			
<i>Poorest</i>	—	—	
<i>Poorer</i>	1.51	1.16, 1.97	0.002
<i>Middle</i>	1.94	1.50, 2.50	< 0.001
<i>Richer</i>	1.95	1.51, 2.53	< 0.001
<i>Richest</i>	2.54	1.96, 3.29	< 0.001
Ever had a terminated pregnancy			
<i>No</i>	—	—	
<i>Yes</i>	1.49	1.30, 1.70	< 0.001
Time since last sex			
<i>0 days</i>	—	—	

Characteristic	OR¹	95% CI¹	p-value
<i>1 day</i>	1.09	0.71, 1.66	0.7
<i>2 days</i>	1.12	0.74, 1.70	0.6
<i>3–6 days</i>	1.27	0.85, 1.90	0.3
<i>7–14 days</i>	1.86	1.24, 2.80	0.003
<i>15 +</i>	0.97	0.65, 1.43	0.9
Desire for more children			
<i>Wants within 2 years</i>	—	—	
<i>Wants after 2 + years</i>	2.22	1.82, 2.72	< 0.001
<i>Wants, unsure timing</i>	1.13	0.93, 1.38	0.2
<i>Undecided</i>	1.46	1.07, 1.99	0.017
<i>Wants no more</i>	2.05	1.69, 2.47	< 0.001
<i>Declared infecund</i>	0.48	0.34, 0.69	< 0.001
Husband's desire for children			
<i>Both want same</i>	—	—	
<i>Husband wants more</i>	0.63	0.53, 0.76	< 0.001
<i>Husband wants fewer</i>	0.90	0.66, 1.24	0.5
<i>Don't know</i>	0.63	0.50, 0.79	< 0.001
Exposure to need for contraception (definition 3)			
<i>Fecund</i>	—	—	
<i>Postpartum amenorrheic</i>	0.52	0.43, 0.61	< 0.001
Decision maker for using contraception			
<i>Mainly respondent</i>	—	—	
<i>Mainly husband, partner</i>	1.27	0.81, 1.99	0.3
<i>Joint decision</i>	0.95	0.64, 1.40	0.8
<i>Other</i>	0.17	0.01, 2.70	0.2
Person who usually decides on respondent's health care			
<i>Respondent alone</i>	—	—	
<i>Respondent and husband/partner</i>	0.90	0.69, 1.16	0.4

Characteristic	OR¹	95% CI¹	p-value
<i>Husband/partner alone</i>	0.53	0.40, 0.70	< 0.001
<i>Someone else</i>	0.29	0.06, 1.55	0.2
<i>Other</i>	0.29	0.03, 2.47	0.3
Ever been humiliated by husband/partner			
<i>Never</i>	—	—	
<i>Often</i>	1.59	1.07, 2.36	0.023
<i>Sometimes</i>	1.63	1.15, 2.29	0.006
<i>Yes, but not in the last 12 months</i>	1.89	1.29, 2.76	0.001
Ever been threatened with harm by husband/partner			
<i>Never</i>	—	—	
<i>Often</i>	1.59	1.10, 2.30	0.013
<i>Sometimes</i>	1.26	0.93, 1.71	0.14
<i>Yes, but not in the last 12 months</i>	1.45	1.00, 2.10	0.053
Ever been insulted or made to feel bad by husband/partner			
<i>Never</i>	—	—	
<i>Often</i>	1.55	1.03, 2.31	0.034
<i>Sometimes</i>	1.16	0.86, 1.57	0.3
<i>Yes, but not in the last 12 months</i>	1.62	1.12, 2.33	0.011
Ever experienced any form of violence			
<i>Never</i>	—	—	
<i>Yes</i>	1.48	1.21, 1.81	< 0.001
Covered by health insurance			
<i>No</i>	—	—	
<i>Yes</i>	1.78	1.22, 2.60	0.003
No. of caesarian deliveries			
<i>None</i>	—	—	
<i>One</i>	1.85	1.35, 2.52	< 0.001
<i>Two</i>	2.01	0.99, 4.08	0.054

Characteristic	OR ¹	95% CI ¹	p-value
¹ OR = Odds Ratio, CI = Confidence Interval			

b. Independent determinants for the use or non-use of modern contraceptives

None working women were one and a half times more likely to use a modern contraception compared to the working ones (adjusted Odds Ratio (aOR) = 1.48, 95% CI [1.14–1.92], p = 0.004). Increasing wealth increases the chances for the use of modern contraception. No more wanting children or wanting to delay the next childbirth by at least 2 years were respectively associated with an almost four (aOR = 3.88, 95% CI [2.70–5.59], p < 0.001) and three folds (aOR = 2.77, 95% CI [1.98–3.87], p < 0.001) increase in the likelihood to use a modern contraception. Women with a history of domestic violence were more likely to use a modern contraception (aOR = 1.37, 95% CI [1.07–1.75], P = 0.014).

The postpartum period was associated with a less likelihood of modern contraception use (aOR = 0.34, 95% CI [0.25–0.45], P < 0.001). In addition, having 2 children under 5 years old in the household was associated with reduction in the likelihood of using a modern contraception (aOR = 0.67, 95% CI [0.49–0.92], p = 0.015). (Table 3)

Table 3
 multivariate regression comparing the use of modern contraception vs non-use of modern contraception

Characteristic	aOR ¹	95% CI ¹	p-value
Age (years)			
19 and below	—	—	
20–29	1.37	0.77, 2.45	0.3
30–39	1.24	0.65, 2.37	0.5
40–49	0.48	0.23, 1.01	0.055
Age at first cohabitation			
10–14	—	—	
15–19	1.22	0.86, 1.72	0.3
20–24	1.05	0.73, 1.50	0.8
25–29	1.02	0.65, 1.61	> 0.9
30 +	0.46	0.21, 1.01	0.052
Work status			
Working	—	—	
Not Working	1.48	1.14, 1.92	0.004
Type of place of residence			
Urban	—	—	
Rural	0.93	0.70, 1.25	0.6
No. of children born			
1	—	—	
2–3	1.10	0.45, 2.67	0.8
4 +	1.20	0.41, 3.52	0.7
Number of children under 5 in households			
None	—	—	
One	0.93	0.64, 1.36	0.7
Two	0.67	0.49, 0.92	0.015
3 +	0.90	0.58, 1.42	0.7

Characteristic	aOR ¹	95% CI ¹	p-value
Age of household head			
29 and below	—	—	
30–39	0.98	0.67, 1.42	> 0.9
40–49	0.92	0.59, 1.43	0.7
50–59	0.78	0.49, 1.25	0.3
60 +	1.03	0.62, 1.69	> 0.9
Wealth index combined			
Poorest	—	—	
Poorer	2.55	1.48, 4.41	< 0.001
Middle	3.84	2.16, 6.83	< 0.001
Richer	3.86	2.19, 6.80	< 0.001
Richest	5.16	2.80, 9.51	< 0.001
Ever had a terminated pregnancy			
No	—	—	
Yes	1.14	0.88, 1.50	0.3
Desire for more children			
Wants within 2 years	—	—	
Wants after 2 + years	2.77	1.98, 3.87	< 0.001
Wants, unsure timing	1.78	1.03, 3.06	0.039
Undecided	1.91	1.12, 3.26	0.018
Wants no more	3.88	2.70, 5.59	< 0.001
Husband's desire for children			
Both want same	—	—	
Husband wants more	0.92	0.71, 1.19	0.5
Husband wants fewer	0.96	0.60, 1.53	0.9
Don't know	0.82	0.62, 1.10	0.2
Exposure to need for contraception (definition 3)			
Fecund	—	—	

Characteristic	aOR¹	95% CI¹	p-value
Postpartum amenorrheic	0.34	0.25, 0.45	< 0.001
Ever experienced any form of violence			
Never	—	—	
Yes	1.37	1.07, 1.75	0.014
Covered by health insurance			
No	—	—	
Yes	1.76	0.92, 3.39	0.091
No of sons died			
One	—	—	
One	—	—	
Two	0.85	0.59, 1.22	0.4
Three	1.15	0.59, 2.23	0.7
No. of daughters died			
One	—	—	
One	—	—	
Two	0.88	0.59, 1.30	0.5
Three	0.57	0.22, 1.46	0.2
No. of children alive			
One	—	—	
Two	1.08	0.44, 2.64	0.9
Three	0.94	0.33, 2.71	> 0.9
No. of caesarian deliveries			
None	—	—	
One	1.61	0.90, 2.89	0.11
Two	1.18	0.30, 4.59	0.8
¹ aOR = adjusted Odds Ratio, CI = Confidence Interval			

Discussion

The study provides a global picture on the use of modern contraception in Cameroon, in the years 2018 and 2019. It was based on nationally representative data, except for the South-west region, and included 12,411 women aged 15 to 49 years old. The study revealed that the national prevalence of modern contraception is 18% (2,231 women), 9.8% for short acting contraception, 8.2% for long acting contraception, 8% for long acting reversible, and 0.2% for long acting non-reversible contraception. The prevalence of 18% for modern contraception among women in Cameroon is less than the 58.9% found in the Biyem-Assi Health District in Yaounde, inferior to the 34.8% use of male condom in the health district of Mbouda [8, 10]. This is because these areas are relatively urbanized and living in an urban area has been shown to be associated with an increase in the use of modern contraception (Table 2). This prevalence of modern contraception is higher than the 14% observe in the neighbouring country Nigeria [11]. This might suggest a better enforcement of modern contraception in Cameroon compare to Nigeria.

Not working, increasing wealth, no more wanting children, wanting to delay the next childbirth by at least 2 years and ever being victim of domestic violence were found on multivariate analysis to increase the likelihood to use a modern contraceptive. Not working as a determinant of modern contraception use was unexpected because, inconsistent with the findings in Malawi, Ghana, and other parts of the world where working or working out of the house, for women were associated with an increase in the use of modern contraception [12, 13]. This might suggest that Cameroonian women understand the financial burden related to childcare, therefore prefer to delay childbirth until they have an income. Nevertheless, the real reason for this is unclear and further exploration is needed to understand this relationship. Increasing wealth as a determinant for the use of modern contraception is consistent with findings in other middle income countries [14]. About domestic violence a similar effects was observed in Kenya in 2014 and in Honduras in 2011-12[15].

The postpartum period and having 2 children under 5 years old in the household, on multivariate analysis were associated with a reduction in modern contraception use. This is in line with the findings of WHO which shows that postpartum women are those with the highest unmet needs for contraception whereby 95% of women in their first year postpartum would like to avoid pregnancy in the following 2 years but 70% are not using a modern contraception. Meanwhile, if the postpartum period, appear to be a determinant for the non-use of contraception, this suggest that during this period, women might be going more for lactation amenorrhea as the contraception of choice which is not a reliable method [16]. Further explorations need to be made to clearly understand the raisons for this. The results also suggest that having 2 children under 5 years old in the household might make women wanting to take a break thereby, using a modern contraception.

Conclusion

This study helped us to draw a big picture of modern contraception among women of reproductive age in Cameroon in the years 2018 and 2019 with a low usage at 18%. We also identify some of the factors playing a key role into the current picture. We hope that the government and other key people will make

use of these information and address factors such as poverty, postpartum period and so on in order to improve the modern contraception use among women of reproductive age in Cameroon.

Abbreviations

DHS: Demographic Health Survey

Declarations

Ethics approval and consent to participate

The Comité National d'Éthique de la Recherche pour la Santé Humaine (CNERSH) of the ministry of public health of Cameroon and the Institutional Review Board of ICF approved the study protocol, survey instruments and materials prior to the commencement of the survey. Individual written consent was obtained during the data collection process for all participants ages 15 to 49. This research analysed a secondary data after an application requesting for the use of the 2018 Cameroon Demographic and Health Survey data was sent to the Demographic Health Surveys (DHS) representative. Data was then used after approval was granted.

Consent for publication

Not Applicable.

Availability of data and materials

The datasets generated and/or analyzed during the current study are available in the Cameroon demographic and health repository, <http://dhsprogram.com/data/available-datasets.cfm>

Competing interests

The authors declare that they have no competing interests

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Authors' contributions

Michael Guy TOGUEM did the whole work

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