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Factors Associated with the Non-Use of Modern Contraception in the Djougou-Copargo-Ouaké Health Zone in 2024

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Abstract

Introduction: Family planning remains under-utilized in sub-Saharan Africa, despite its contribution to reducing maternal and infant mortality. This study aimed to identify the factors explaining the low use of modern contraceptive methods in the Djougou-Copargo-Ouaké health zone. **Materials and methods:** A descriptive and analytical cross-sectional study was conducted from June 17 to 21, 2024, in the Djougou-Copargo-Ouaké health zone. Data were collected prospectively from women aged 15–49 years who had been living in the area for at least six months. A proportional stratified

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random sampling method was used to select participants, and a structured questionnaire was administered in face-to-face interviews by trained community health workers. Data were analyzed using descriptive statistics and multivariate logistic regression to identify factors associated with the non-use of modern contraceptive methods. **Results:** The prevalence of modern contraceptive use was 12.01%. Several factors were associated with low use of modern contraceptive methods: desire to have children (OR = 0.039; p = 0.001), low level of knowledge about contraceptive methods (OR = 1.88; p = 0.048), lack of awareness of their benefits (OR = 25.93; p = 0.001), and no experience of unwanted pregnancy (OR = 2.07; p = 0.039). **Conclusion:** These findings highlight the need to raise awareness of modern contraception and to promote the enrolment and retention of young girls in the education system, in order to improve their access to contraceptive methods and strengthen family planning outcomes.

Keywords: Modern contraception, associated factors, Benin

Introduction

High maternal and infant mortality rates are strongly linked to the precarious health of women of childbearing age and their low level of health literacy (SOSSA, 2019). Every year, around **290,000 women** die during pregnancy or childbirth, i.e., around **800 women per day** (INED, 2020). In Benin, the prevalence of modern contraception among women in union increased from 3% in 1996 to 12% in 2017-2018, according to the EDSB-V, a progress still insufficient to reach optimal coverage. This situation reflects deep-seated shortcomings in the healthcare system, exacerbated by low levels of education and limited access to health information for women (WHO, 2022). Family planning (FP) is recognized as a key strategy for reducing maternal and infant mortality (USAID, 2008). Contraception could help prevent around 104,000 maternal deaths each year, representing a 29% reduction (Christin-Maitre, 2022). In addition, making contraceptive methods accessible to all who need them could reduce child mortality by around 10% (Maina et al., 2024). Furthermore, FP contributes to the fight against poverty by enabling families to better manage their resources and plan their future with greater security and stability (UNFPA, 2023). Despite its permanent availability, FP, which is crucial to improving the health of mothers, newborns and children, remains under-utilized in this context. The fifth Demographic and Health Survey in Benin (EDSB-V, 2018) shows a gradual increase in modern contraceptive prevalence among women in union, from 3% in 1996 to 12% in 2017-2018 (INSAE, 2019). However, this progress is insufficient to achieve optimal contraceptive coverage. Moreover, in! northern Benin, and more specifically in the Donga department, the prevalence of modern contraceptive

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method use among women aged 15-49 in union was just 6% in 2018, a particularly worrying figure (INSAE, 2019).

The example of the Donga department, highlights the persistent challenges. This region, with its socio-cultural and economic particularities, illustrates the need for in-depth analysis of the factors influencing the use of modern contraceptive methods. The aim is to identify the factors associated with the low use of modern contraceptive methods, in order to better achieve national reproductive health and sustainable development goals.

Materials and Methods

The study was conducted in the Djougou-Copargo-Ouaké health zone, located in the Donga department in northwestern Benin. This zone includes three predominantly rural communes and several health facilities that provide family planning services. It was a descriptive and analytical cross-sectional study with prospective data collection, carried out from June 17 to 21, 2024.

The source population consisted of all women of reproductive age (15–49 years) residing in the health zone. Eligible participants were women aged 15 to 49 years who had been living in the area for at least six months and who provided verbal informed consent. Women who were unable to answer the questionnaire due to health reasons or who declined participation were excluded. The sample size was calculated using Schwartz's formula, taking into account the finite size of the target population estimated at 261,881 women (INStaD, 2024). With an expected prevalence of modern contraceptive use of 21.6% (DDS, 2022), a 5% margin of error, and a 95% confidence level, the minimum sample size required was 260 women. By adding a 10% allowance for non-responses, the final expected sample size was 286 women. Sampling was conducted using a proportional stratified random technique, based on the distribution of women of reproductive age in each commune.

Data were collected using a structured questionnaire administered in face-to-face interviews by trained community health workers. The tool was pre-tested in a neighboring zone to ensure clarity and validity. Information collected included sociodemographic characteristics, knowledge and perceptions of modern contraceptive methods, and their actual use or non-use. The dependent variable was the use of modern contraceptive methods, coded as binary (Yes = 1, No = 0). Independent variables included age, education level, marital status, occupation, monthly income, place of residence, religion, level of knowledge of modern contraceptive methods, and perception of family planning services.

Data were entered, cleaned, and analyzed using Epi Info version 7.1.3.3 and SPSS version 26. Qualitative variables were expressed as frequencies and proportions, while quantitative variables were presented as means with standard deviations. Comparisons were made using the Chi-square

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test for categorical variables and the student's t-test for means. Binary logistic regression was performed to identify factors associated with the non-use of modern contraceptive methods. The significance level was set at $p < 0.05$.

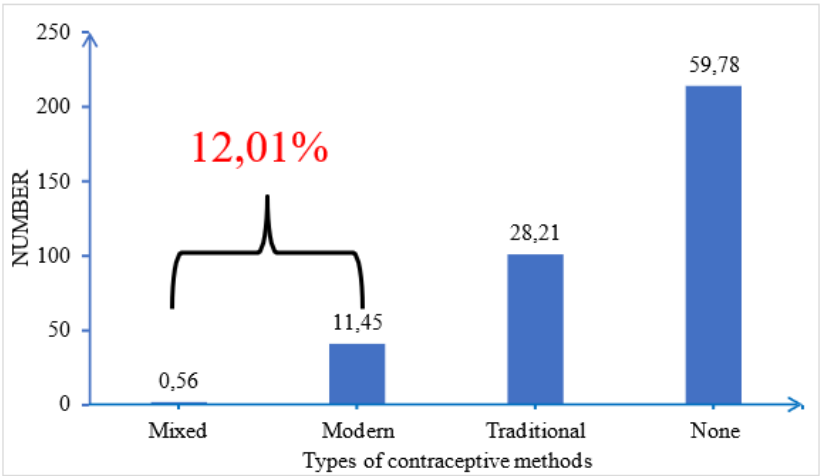
The study complied with ethical principles of confidentiality and anonymity. Authorization was obtained from the Donga Departmental Health Directorate, and verbal informed consent was obtained from each participant prior to questionnaire administration.

Results

Prevalence of modern contraceptive use by women of childbearing age in the DCO health zone

Of the 358 women surveyed, 41 (11.45%) used only modern contraception, 101 (28.21%) used only traditional contraceptive methods, 2 (0.56%) used both modern and traditional contraceptive methods, and 214 (59.78%) used no contraceptive method at all. Thus, a total of 43 women were using modern contraception at the time of the survey, representing a prevalence of 12.01%. Figure 1 shows the distribution of women of childbearing age according to the type of contraception used.

Figure 1: Distribution of women of childbearing age by type of contraception used in the DCO health zone in 2024.



Source: Base from survey in DCO health zone, 2024

Age

The average age of the women surveyed was 27.78 ± 7.49 years, with extremes ranging from 15 to 48 years. The most frequent age bracket was [25; 35[, representing 44.41% of respondents.

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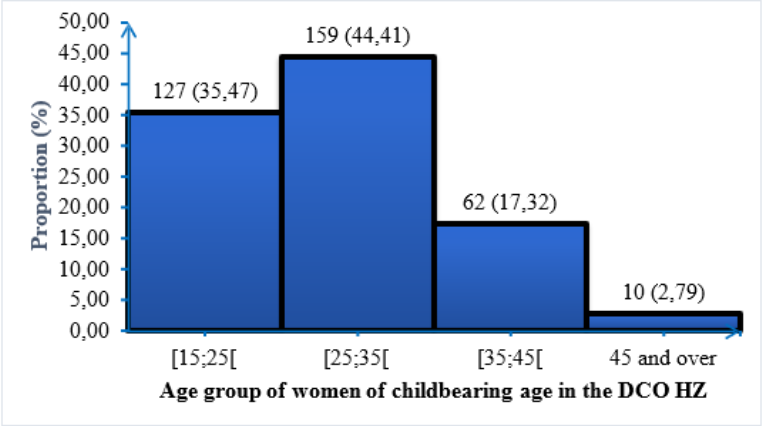
Figure 2: Distribution of women of childbearing age by age group, ZS DCO, 2024.



Source: Base from survey in ZS DCO, 2024

Religion, marital status, household type and profession

Muslim women accounted for 74.58% of respondents. Moreover, 70.95% of respondents were married women. Among married women, 53.54% were monogamous. Housewives (61.73%) and shopkeepers (14.53%) predominated in this study. Table I shows the distribution of women of childbearing age in the DCO health zone according to religion, marital status, household type and occupation.

Table I: Distribution of women of childbearing age in the DCO health zone, by religion, marital status, household type and occupation in 2024.

	Number	Percentage
Religion		
Muslim	267	74,58
Christian	82	22,91
Endogenous	2	0,56
None	7	1,96
Marital status		
Married	254	70,95
Single	93	25,98
Widowed	7	1,96
Divorced	4	1,12
Type of household (n=254)		
Monogamous	136	53,54
Polygamous	118	46,46
Profession		
Housewife	221	61,73
Tradeswoman	52	14,53
Learner/student	42	11,73
Civil servant/Employee	17	4,75
Craftswoman	17	4,75
Agricultural	9	2,51
Total	**358**	**100,00**

Source: DCO HZ survey base, 2024

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Women with no Western education represented the majority at 36.03%, followed by those with primary education at 32.68%. The women surveyed came from households with an average socio- economic level (48.32%) and poor households (41.90%). The majority (79.89%) came from rural areas, with a monthly household income of less than 50,000 FCFA, representing 75.42% of those surveyed. Table II shows the distribution of women of childbearing age in the DCO health zone, by level of education, socio-economic level, monthly income and place of residence.

Table II: Distribution of women of childbearing age in the DCO health zone, by level of education, socio-economic level, monthly income and place of residence, in 2024.

	Number	Percentage
Level of education		
None	129	36,03
Primary	117	32,68
Secondary	100	27,93
Higher	12	3,35
Socioeconomic level		0
Very poor	28	7,82
Poor	150	41,9
Average	173	48,32
Rich	7	1,96
Place of residence		
Rural	286	79,89
Urban	55	15,36
Monthly household income		
None	17	4,75
Less than $50,000	270	75,42
[50 000 ;100 000[	56	15,64
100,000 and over	15	4,19
Total	**358**	**100,00**

Source: Base from survey in ZS DCO, 2024

Assessment of knowledge of modern contraception among women of childbearing age in the DCO HZ

Heard about FP and sources of information

Respondents (93.30%) had heard of family planning. The main sources of information on family planning for these women were health centers (84.43%), community relays (45.81%), radio (36.83%) and NGOs (30.84%). Table III shows the distribution of women of childbearing age in the DCO health zone according to their sources of information on family planning.

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Table III: Distribution of sources of information on family planning among women of childbearing age who have heard of FP, in the DCO health zone in 2024.

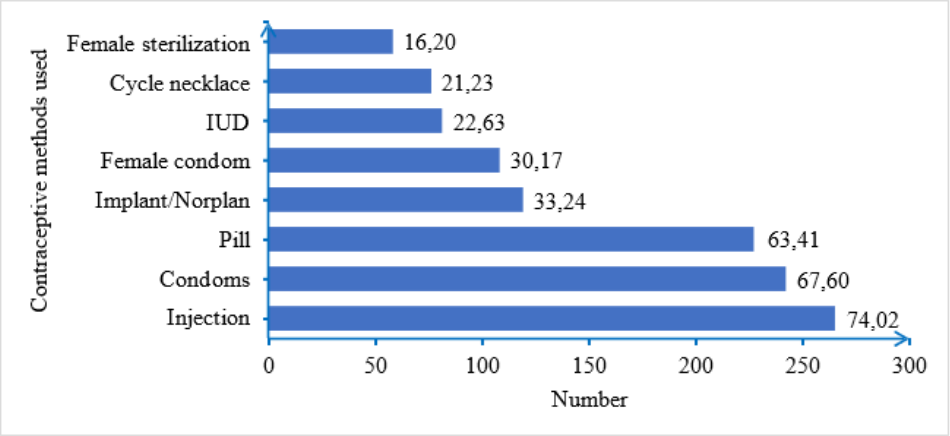
	Number	Percentage
Heard about FP (=Yes)	334	93,30
Sources of information (n=334)		
Health center	282	84,43
Community relay	153	45,81
Radio	123	36,83
NGO	103	30,84
TV	38	11,38
Magazine	17	5,09
Friends/relatives	17	5,09
Total	**334**	**100,00**

Source: Base from survey in ZS DCO, 2024

Knowledge of modern contraceptive methods

The modern contraceptive methods most familiar to women were: injections (74.02%), male condoms (67.60%) and pills (63.41%) (figure 3).

Figure 3: Distribution of women of childbearing age in the ZS-DCO according to their knowledge of MCM, in 2024.



Source: Base from survey in DCO ZS, 2024

Women's overall knowledge of modern contraceptive methods

Some 82.68% of women had a low level of knowledge about contraceptive methods. Figure 4 shows the distribution of women of childbearing age according to their level of knowledge of c

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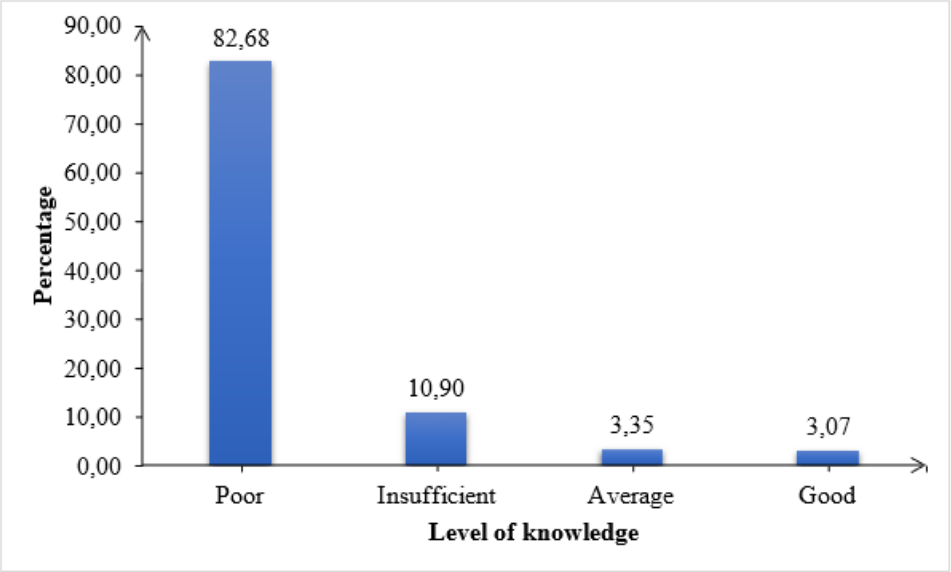
Figure 4: Distribution of women of childbearing age in the DCO health zone, by level of knowledge of MC in 2024.



Source: Base from survey in DCO health zone, 2024

Women's perception of modern contraception

The majority of women have a positive perception of the benefits of modern contraceptive methods, particularly in terms of birth spacing and the prevention of unwanted pregnancies. However, certain constraints limit their use:

- Disruption of the menstrual cycle, perceived as an annoying side effect,
- Spouse's permission required,
- Distance between home and family planning facilities,
- Financial problems, despite fees deemed affordable overall.

Factors associated with non-use of modern contraception

Multivariate analysis revealed several factors negatively influencing the adoption of modern contraceptives:

- Desire to have children (OR = 33.33; p = 0.001),
- Low level of knowledge about contraceptive methods (OR = 1.88; p = 0.048),
- Lack of awareness of the benefits of contraception (OR = 25.93; p = 0.001),
- Negative appraisal of family planning costs (OR = 8.33; p = 0.001).

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Table IV: Results of multivariate analysis of factors associated with non-use of modern contraceptive methods, ZS DCO, 2024.

Associated factors	OR	P
Desire to have children	33,33	0,001
Low level of knowledge of contraceptive methods	1,88	0,048
Lack of knowledge of the benefits of contraception	25,93	0,001
Negative appraisal of family planning costs	8.33	0,001
No experience of unwanted pregnancy	2.07	0,039

Discussion

Study quality and validity

This study of factors associated with the non-use of modern contraceptive methods in the Djougou- Copargo-Ouaké health zone (ZS-DCO) was based on a rigorous methodology designed to guarantee the validity of the results and their extrapolation to the entire target population. To limit selection bias and ensure a representative sample, proportional stratified probability sampling was used, taking into account the relative size of women of childbearing age in each arrondissement of the zone. This methodological choice ensured balanced coverage and reflected the geographical and socio-demographic diversity of women in the health zone.

In addition, data collection was carried out using a structured, digitized questionnaire, administered by community relays trained in conducting surveys. This arrangement reduced information bias, particularly reporting bias, by promoting better understanding of the questions and ensuring a climate of trust with the respondents. The use of a questionnaire pre-test also made it possible to adjust wording for greater clarity and to ensure the content validity of the collection tool.

Taken together, these methodological measures helped to strengthen the internal and external validity of the study, enabling results to be extrapolated prudently to the female population of childbearing age in the ZS-DCO.

Comments

The study revealed a 12.01% prevalence of modern contraceptive method use among women of childbearing age in the Djougou-Copargo-Ouaké health zone, a low rate although similar to the national average according to the fifth Demographic and Health Survey in Benin (EDS-V, INSAE, 2019), which reports a rate of 12% among women in union. This low uptake can be explained by several factors well documented in the literature, including cultural and religious barriers, limited access to family planning services and persistent misinformation (WHO, 2023; Boadu, 2022;

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Guttmacher Institute, 2016).

Furthermore, 82.68% of women surveyed had a low level of knowledge of modern contraceptive methods, although 93.30% had heard of them. This paradox illustrates a significant gap between exposure to information and actual understanding, already observed in other similar contexts (DRAME et al., 2023; Matungulu et al., 2015). This situation suggests that available sources of information are inadequate or unreliable, and highlights the urgent need to strengthen educational campaigns, particularly in local languages and via culturally relevant channels. More generally, we need to improve the level of education or instruction of girls. In our context of low school enrolment rates for girls, studies aimed at identifying factors that could favorably influence the use of MMCs, despite the level of education, would be more relevant.

As far as women's perceptions are concerned, family planning costs are generally considered affordable, and the advantages of modern methods - notably birth spacing and the prevention of unwanted pregnancies - are well understood. However, disadvantages, such as disruption of the menstrual cycle, and social constraints, such as the need for spousal authorization or geographical distance from health facilities, continue to hinder their use (Mbacké Leye et al., 2015; DRAME et al., 2023).

Finally, multivariate analysis identified five factors significantly associated with non-use of modern contraceptive methods: the desire to have children, a low level of knowledge, lack of awareness of the benefits of using MC, a negative assessment of the cost of FP services and never having had an unwanted pregnancy.

These findings concur with those of other work carried out in West Africa, notably in Benin and Guinea (Mbacké Leye et al., 2015; DRAME et al., 2023), and call for targeted awareness-raising and education strategies, mobilizing the media, community leaders, religious figures, as well as digital platforms and social networks, to remove barriers to the adoption of modern contraceptive methods.

Conclusion

This study revealed that only twelve out of one hundred women of reproductive age were using modern contraceptive methods in the Djougou-Copargo-Ouaké health zone in 2024. The main factors associated with non-use included the desire to have children, a low level of knowledge, lack of awareness of the benefits of contraception, and no prior experience of unwanted pregnancy. These findings highlight the importance of improving women’s general education and awareness of family planning, as well as considering reproductive desires and past experiences when designing appropriate strategies. However, limitations related to the sample size and the

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specific study setting call for caution in generalizing these results to the entire country.

In light of these findings, it is recommended to:

1. Strengthen community awareness campaigns, with a focus on local languages and culturally appropriate communication channels.
2. Improve girls' access to education in order to increase their knowledge and autonomy in reproductive health.
3. Further engage community and religious leaders in the promotion of modern contraception to help overcome persistent socio-cultural barriers.
4. Ensure the continuous availability and financial accessibility of modern contraceptive methods in health facilities across the zone.
5. Promote complementary large-scale studies to confirm and expand these findings, particularly in other regions of Benin.

Conflict of Interest: The authors reported no conflict of interest.

Data Availability: All data are included in the content of the paper.

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Declaration Regarding Human Participants: This study was approved by the Public Health Unit of the Faculty of Health Sciences in Cotonou. Data collection authorizations were obtained from the said unit and from the health authorities of the Borgou Department. The anonymity and confidentiality of the collected data were ensured in accordance with the ethical principles for medical research involving human subjects contained in the Declaration of Helsinki of the World Medical Association.

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