

## 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 underutilized in sub-Saharan Africa, despite its contribution to reducing maternal and infant mortality. 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 study aims 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 with prospective data collection was carried out among women of childbearing age (15-49 years) residing in this health zone and meeting the inclusion criteria. A multivariate analysis was performed to identify factors associated with non-use of modern contraceptive methods. **Results:** The prevalence of use of modern contraceptive methods 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 results underline 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 promote better family planning.

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**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). 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 (Ahmed et al., 2012). In addition, making contraceptive methods accessible to all who need them could reduce child mortality by around 10% (Osotimehin, 2012). 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. Despite its permanent availability, FP, which is crucial to improving the health of mothers, newborns and children, remains underutilized in this context.

Despite ongoing efforts to improve FP uptake, results remain modest. 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 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.

## Setting and methods

The study was carried out in the Djougou-Copargo-Ouaké health zone (ZS DCO), located in the Donga department in north-west Benin. It comprises three predominantly rural communes and has several health facilities offering family planning services.

This was a descriptive and analytical cross-sectional study with prospective data collection. It was carried out from June 17 to 21, 2024, in the Djougou-Copargo-Ouaké health zone (ZS DCO). The ZS DCO, located in the Donga department, is predominantly rural, with an estimated population of over 500,000. Agriculture, livestock breeding and small-scale commerce are the main economic activities. The target population consisted of all women residing in the area, while the source population comprised all women of childbearing age (15-49) present in the area at the time of the study. Inclusion criteria were: to be a woman aged 15- 49 residing in the health zone for at least six months, and to give verbal consent to participate in the study. Women unable to answer the questions were excluded.

The sample size was determined using Schwartz's formula, taking into account the finite size of the population. For this calculation, the reference population was all women of childbearing age residing in the communes of Djougou, Copargo and Ouaké, estimated at 261,881 women according to INSTAD (2024). The expected prevalence of use of modern contraceptive methods was estimated at 21.6%, based on data provided by the Direction Départementale de la Santé (DDS, 2022). Assuming a confidence level of 95%, i.e., a risk of error of 5%, and a desired precision of 5%, the minimum sample size obtained was around 260 women. To allow for possible non-response or unexploitable data, a safety margin of 10% was applied, bringing the final sample size to 286 women to be surveyed. The sampling method used was proportional stratified probability sampling.

For data collection, survey forms in the form of structured questionnaires were used in face-to-face interviews. These questionnaires covered several dimensions, of which the dependent variable of the study was the use of modern contraceptive methods (MCM), coded in a binary manner (Yes = 1, No = 0). Independent variables included socio-demographic characteristics (age, education, marital status, occupation, ethnicity, religion), as well as level of knowledge of MCMs and perception of family planning (FP) services. The level of knowledge of MCMs was assessed on the basis of the participant's ability to recognize or spontaneously cite at least one modern contraceptive method, from a list including the pill, IUD, injectables, implants, male condom, etc. A participant was considered to have a high level of knowledge of MCMs. A participant was considered to have a good level of knowledge if she knew at least three of these methods. Perception of family planning services was

assessed along three dimensions: accessibility of services (very accessible, accessible, not very accessible, not accessible), cost of services (free, affordable, expensive) and perceived quality of services (good, average, poor).

These variables were coded in ordinal modalities and included in the analysis to determine their possible association with the use or non-use of MCMs.

Data analysis was carried out using Épi Info version 7.1.3.3 and SPSS 26 software. An initial cleaning phase ensured the completeness and consistency of the data collected. Qualitative variables were expressed as frequencies and proportions, while quantitative variables were analyzed as means with standard deviations. A multivariate analysis was conducted using binary logistic regression to identify factors associated with non-use of modern contraceptive methods.

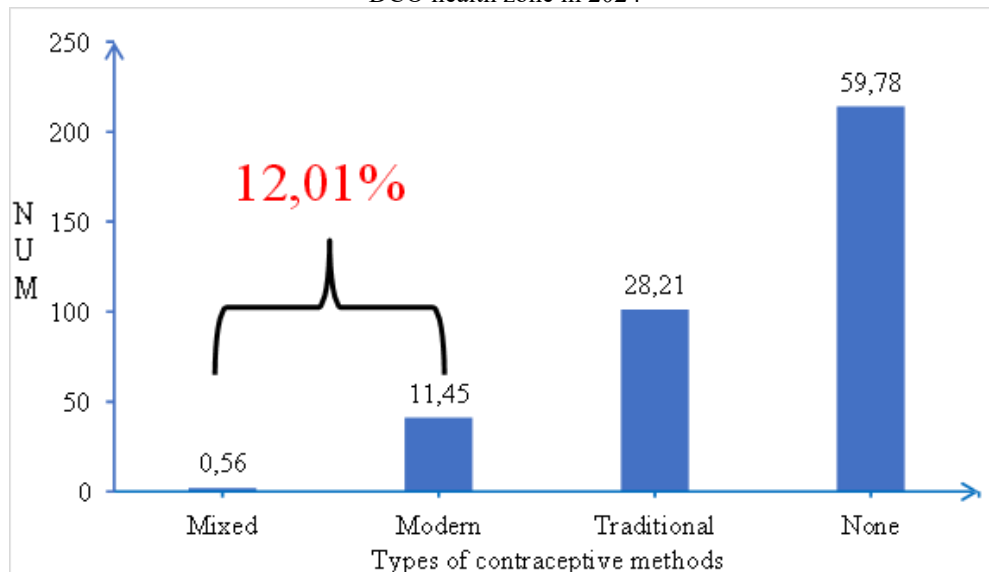
The study complied with current ethical and deontological principles. Approval was obtained from the Direction Départementale de la Santé (DDS), and verbal consent was obtained from participants. Similarly, the confidentiality and anonymity of the data collected were respected.

## **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



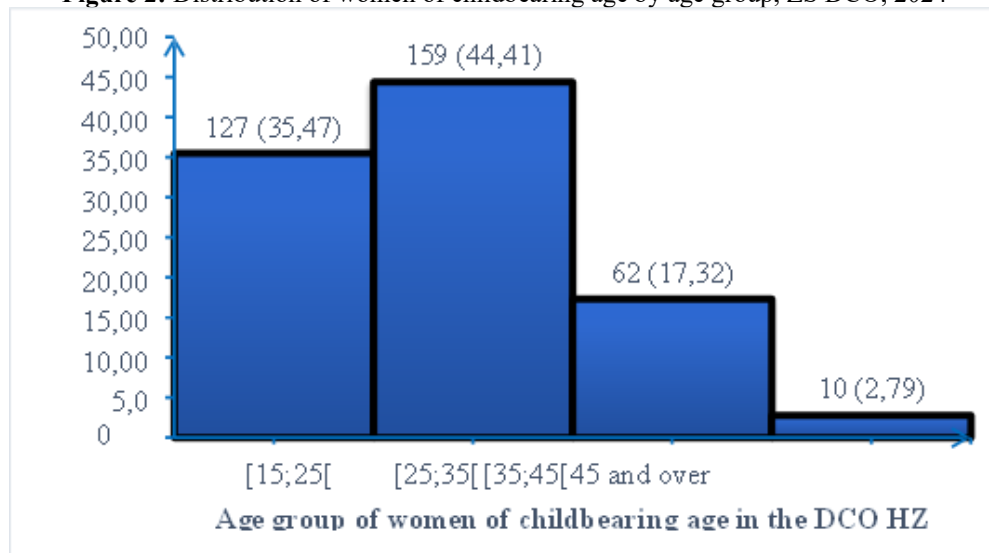
Source: Based on a survey in the DCO health zone, 2024

### Socio-demographic characteristics

#### Age

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

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



Source: Based on a 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
<b>Religion</b>		
Muslim	267	74,58
Christian	82	22,91
Endogenous	2	0,56
None	7	1,96
<b>Marital status</b>		
Married	254	70,95
Single	93	25,98
Widowed	7	1,96
Divorced	4	1,12
<b>Type of household (n=254)</b>		
Monogamous	136	53,54
Polygamous	118	46,46
<b>Profession</b>		
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
<b>Total</b>	<b>358</b>	<b>100,00</b>

Source: DCO HZ survey base, 2024

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
<b>Level of education</b>		
None	129	36,03
Primary	117	32,68
Secondary	100	27,93
Higher	12	3,35
<b>Socioeconomic level</b>		0
Very poor	28	7,82
Poor	150	41,9
Average	173	48,32
Rich	7	1,96
<b>Place of residence</b>		
Rural	286	79,89
Urban	55	15,36
<b>Monthly household income</b>		
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
<b>Total</b>	<b>358</b>	<b>100,00</b>

Source: Based on a 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.

**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

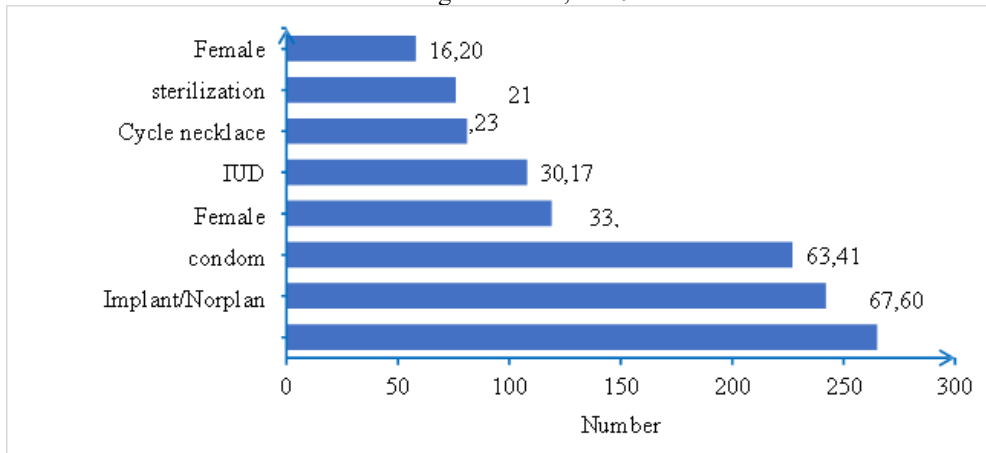
	Number	Percentage
<b>Heard about FP (=Yes)</b>	334	93,30
<b>Sources of information (n=334)</b>		

Source: Based on a 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

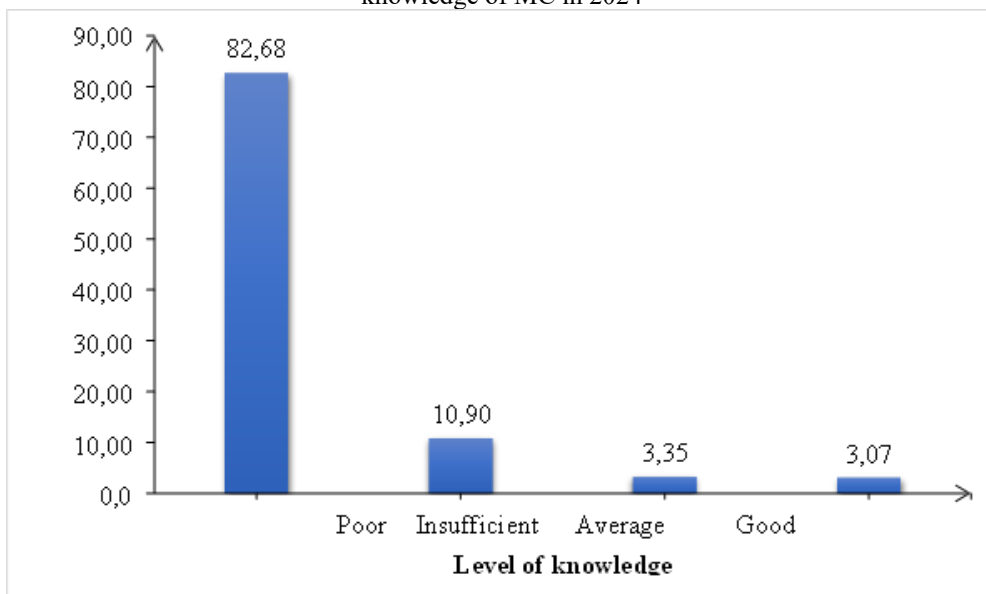


Source: Based on a survey in DCO ZS, 2024

### 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 contraceptive methods.

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



Source: Based on a survey in the 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;  $p = 0.001$ ).

**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 a 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.

### **Analysis, interpretation and comparison of results**

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; 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 twelve out of an expected one hundred women were using modern CMs in the DCO SZ. Factors associated with non-use of modern MC included a desire to have children, a low level of knowledge about MC, a lack of awareness of the benefits of MC, and no experience of unwanted pregnancy.

These findings underline the importance of strengthening girls' overall education and awareness of modern MCs in order to improve their uptake. In addition, it is crucial to consider women's reproductive desires and past experiences when developing effective family planning strategies.

Looking ahead, future studies could explore targeted interventions to improve knowledge and perceptions of modern MC among women, particularly those with low levels of education.

**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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## References:

1. Ahmed, S., Li, Q., Liu, L., & Tsui, A. O. (2012). Maternal deaths averted by contraceptive use: An analysis of 172 countries. *The Lancet*, -380(9837), 111125.
2. Dramé, L., Kolié, D., Sidibé, S., Yombouno, J. F., & Delamou, A. (2023). Factors associated with contraceptive method use among young female students in rural Guinea. *Santé Publique*, -35(6), 129140. <https://doi.org/10.3917/spub.236.0129>

3. Benin demographic and health survey 2011-2012. (2013). Institut National de la Statistique et de l'Analyse Économique.
4. INED. (2020). Maternal Mortality in the World. [https://www.ined.fr/fichier/s\\_rubrique/263/fichier.fiche.peda.mortalite.maternelle.monde.fr.pdf](https://www.ined.fr/fichier/s_rubrique/263/fichier.fiche.peda.mortalite.maternelle.monde.fr.pdf)
5. INSAE. (2019). Fifth demographic and health survey in Benin (EDSB-V) 2017-2018 (p. 675). Institut National de la Statistique et de l'Analyse Économique. [https://instad.bj/images/docs/insae-statistiques/enquetes-recensements/EDS/2017-2018/1.Benin\\_EDSBV\\_Rapport\\_final.pdf](https://instad.bj/images/docs/insae-statistiques/enquetes-recensements/EDS/2017-2018/1.Benin_EDSBV_Rapport_final.pdf)
6. Mbacké Leye, M. M., Faye, A., Diongue, M., Wone, I., Seck, I., Ndiaye, P., & Tal Dia, A. (2015). Determinants of modern contraceptive use in the health district of Mbacké (Senegal). *Public Health*, -27(1), 107116. <https://doi.org/10.3917/spub.151.0107>
7. WHO. (2022). Contraception. World Health Organization. <https://www.who.int/health-topics/contraception>
8. Osotimehin, B. (2012). Family planning saves lives, yet investments falter. *The Lancet*, - 380(9837), 8283.
9. Sossa, F. (2019). Relationship between parental education and child mortality in Benin [Master's thesis, Université de Montréal]. Papyrus. [https://papyrus.bib.umontreal.ca/xmlui/bitstream/handle/1866/23412/Sossa\\_Fortune\\_2019\\_these.pdf?sequence=2&isAllowed=y](https://papyrus.bib.umontreal.ca/xmlui/bitstream/handle/1866/23412/Sossa_Fortune_2019_these.pdf?sequence=2&isAllowed=y)
10. USAID & WHO. (2008). Repositioning family planning: advocacy guidelines. Geneva.