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Original Research Article

Determinants of the use of modern contraceptive methods among women of reproductive age in a health zone in southern Benin

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ABSTRACT

Background: The prevention of unintended pregnancies is one of the essential pillars of reducing avoidable maternal deaths. However, contraceptive prevalence remains low in Benin in general, and particularly in the Allada-Toffo-Zè health zone. Objective was to identify the determinants of the use of modern contraceptive methods among women of reproductive age in the Allada-Toffo-Zè Health Zone.
Methods: This was a cross-sectional study with descriptive and analytical purposes, based on prospective data collection from March 6 to May 31, 2023, conducted in ten (10) health facilities within the Allada-Toffo-Zè health zone located in southern Benin. All women of reproductive age (15-49 years old) who attended consultations and provided informed consent were included and interviewed through a face-to-face structured questionnaire. Logistic regression analysis was performed to assess the association between explanatory variables and the outcome variable, which was the use of modern contraceptive methods, with a significance level set at 5%.
Results: A total of 402 women were surveyed. The prevalence of modern contraceptive use was 20.79%. The mean age was 28.25±7 years. The determinants of modern contraceptive use were parity ($p=0.014$), knowledge of the effectiveness of contraceptive methods ($p<0.001$), knowledge about birth spacing by the method ($p<0.001$), insurance for the prevention of sexually transmitted infections by the method ($p=0.008$).
Conclusions: Understanding the determinants of modern contraceptive use will help target relevant interventions to improve contraceptive prevalence and contribute to accelerating the reduction of maternal mortality in the health zone.

Keywords: Determinants, Modern contraceptive method, Southern Benin, Women of reproductive age

INTRODUCTION

Family planning substantially contributes to the reduction of maternal deaths, the improvement of the socio-economic conditions of women and communities, development, prevention of school dropout among girls, and gender equality. Family planning can contribute to achieving sustainable development goals 1, 3, 5, and 8.[1] However, this remains a challenge for sub-Saharan African countries, particularly Benin where contraceptive prevalence was 12% at the national level and 14% in the Atlantic department in 2018.[2] The objective of this study

was to identify the determinants of the use of modern contraceptive methods among women of reproductive age in the Allada-Toffo-Zè Health Zone in southern Benin.

METHODS

It was a cross-sectional study with descriptive and analytical purposes, based on prospective data collection conducted from March 6 to May 31, 2023, in 10 health facilities within the Allada-Toffo-Zè health zone, one of the three zones in the Atlantic department in southern Benin.

Ten public health facilities were selected as follows: three randomly chosen public health centers in each of the three municipality (Allada, Toffo, Zè), to which we added the referral hospital of the health zone (Allada Zone Hospital). The study targeted women of reproductive age from the health zone who attended consultations in the selected health facilities, regardless of the reason for the visit.

We included girls and women of reproductive age (15-49 years) who attended gynecological, antenatal, postnatal, family planning, or emergency consultations in the maternity units of the selected centers, had been residing in the health zone for at least six months, and freely provided verbal informed consent to participate in the study.

We did not include women who refused to participate and excluded those who withdrew.

The minimum sample size was calculated using Schwartz's formula: $n = Z\alpha^2 \times p \times (1-p)/ i^2$ where "n" is the sample size, "p" the contraceptive prevalence in the city of Parakou from the study of Salifou and al (p=14.74%), Zα= the standard normal deviate at a risk α of 0.05 (Zα=1.96), and "i" the desired precision (4%).[3] This gave a minimum sample size of n=302. After increasing by 10% to account for non-response and incomplete questionnaires, the minimum required sample size was 332. An exhaustive sampling approach was applied.

Data collection was conducted through a structured face-to-face interview. The information was recorded on a digitized collection form, pre-tested on 20 women and validated. The dependent variable was the use of modern contraceptive methods, while the independent variables included socio-demographic and clinical characteristics, as well as the knowledge and attitudes of respondents regarding modern contraceptive methods.

Data were analyzed using R software version 4.3.2. At the descriptive level, we estimated the mean and its standard deviation, or the median and interquartile range for quantitative variables depending on whether the distribution was symmetric or not; for qualitative variables, absolute and relative frequencies were presented. In the bivariate analysis, the association between the dependent variable and the independent variables was assessed by comparing proportions using Pearson's Chi-square test or Fisher's exact test, with a significance threshold of 0.05. In the multivariate analysis, a stepwise descending binary logistic regression was performed. The initial model included independent variables that showed an association with the dependent variable in the bivariate analysis (retention threshold: 0.2). Non-significant predictors were then progressively removed. The measure of association was the adjusted Odds Ratio (aOR), presented with its 95% confidence interval (95% CI); a significance threshold of 5% (p value <0.05) was considered. The validity of the final model was assessed using the Hosmer-Lemeshow goodness-of-fit test.

Authorization was obtained in advance from the Medical Coordinator of the Allada-Toffo-Zè Health Zone and from the Director of the Allada Zone Hospital. Informed consent was obtained from each participant. The confidentiality of the collected data was ensured.

RESULTS

Descriptive analysis

Prevalence

A total of 402 women were surveyed, including 200 pregnant women (49.75%) and 202 non-pregnant women (50.25%). Among them, 40.10% (n=81/402) were favorable to the use of modern contraceptive methods, meaning they were either using contraception at the time of the survey or had already used it in the past. The prevalence of modern contraceptive use was 20.79% (n=42/202).

Socio-demographic characteristics

The mean age was 28.25±7 years, ranging from 14 to 47 years. Most of the women lived in a union (76.87%), were uneducated (35.82%) or had a low level of education (primary level =32.59%), as shown in Table 1.

Obstetric history

The mean gravidity was 3.4±2.6, ranging from 0 to 13. The mean parity was 2.9±3, ranging from 0 to 12. The mean number of living children per woman was 2.3±2.1, ranging from 0 to 11. Most respondents were multigravida (50.50%), multiparous (51.74%), and non-pregnant at the time of the survey (50.25%), as shown in Table 2.

Benefits of contraception

For 83% of respondents, contraceptive methods were perceived as beneficial. The advantages reported were the prevention of unintended pregnancies (35%) and birth spacing (34%). Figure 1 presents the perceived benefits of contraception according to the respondents.

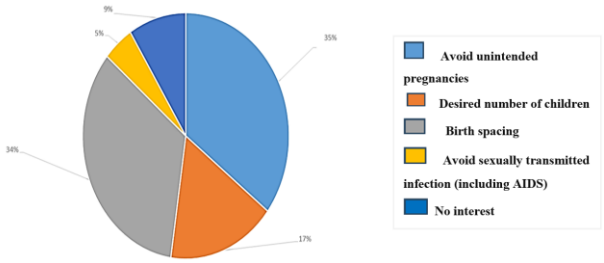

Figure 1: Perceived benefits of using modern contraceptive methods according to participants in the Allada-Toffo-Zè Health Zone, 2023.

Contraceptive methods used

The contraceptives used by respondents favorable to modern contraception were injectable contraceptives (43%), implants (27%), condoms (14%), intrauterine devices (8%), and oral contraceptive pills (8%).

Analytical findings

Factors associated with the use of modern contraceptive methods

In multivariate analysis, the factors associated with the use of modern contraceptive methods were: parity [multiparity aOR=2.31, (1.24-4.42) and primiparity aOR=2.86, (1.23-6.78)], knowledge of the effectiveness of contraceptive methods [aOR = 3.23 (2.04-5.17), p<0.001], knowledge about birth spacing by contraceptive method [aOR=3.21 (1.94-5.42), p<0.001], knowledge about the prevention of sexually transmitted infections by contraceptive method [aOR=3.18 (1.39-7.69), p=0.006], as shown in Table 3

Table 1: Distribution of respondents according to socio-demographic characteristics in the Allada-Toffo-Zè Health Zone, 2023.

	Frequency	Percentage
Age (years)	402	100
≤18	29	7.21
19-35	306	76.12
≥36	67	16.67
Level of education	402	100
No schooling	144	35.82
Primary	131	32.59
Secondary	105	26.12
University	22	5.47
Marital status	n=402	100
Single	56	13.93
In a relationship	25	6.22
Married	309	76.87
Widowed	12	2.99
Occupation	n=402	100
Traders	104	25.87
Craftswomen/workers	103	25.62
Housewives	78	19.40
Salaried workers	43	10.70
Farmers	33	8.21
Pupils/Students	20	4.97
Apprentices (sewing/ hairdressing)	17	4.23
Others	4	0.99

Table 2: Distribution of respondents according to obstetric history in the Allada-Toffo-Zè Health Zone, 2023.

	Frequency	Percentage
Gravidity	**n=402**	**100**
Nulligravida	42	10.45
Primigravida	71	17.66
Multigravida	203	50.50
Grand multigravida	8	21.39
Parity	**n=402**	**100**
Nulliparous	93	23.13

Continued.

	Frequency	Percentage
Primiparous	50	12.44
Multiparous	208	51.74
Grand multiparous	51	12.69
Obstetric status	402	100
Pregnant	200	49.75
Non-pregnant	202	50.25

Table 3: Determinants of modern contraceptive method use in multivariate analysis in the Allada-Toffo-Zè Health Zone, 2023.

	aOR*	95% CI**	P value
Parity			0.014
Nulliparous	1.00	—	
Grand multiparous	1.21	0.52 – 2.84	
Multiparous	2.31	1.24 – 4.42	
Primiparous	2.86	1.23 – 6.78	
Knowledge of contraceptive effectiveness			<0.001
Ineffective	1.00	—	
Effective	3.23	2.04 – 5.17	
knowledge about birth spacing by contraceptive method			<0.001
No	1.00	—	
Yes	3.21	1.94 – 5.42	
Contraception helps prevent unintended pregnancies			0.068
No	1.00	—	
Yes	1.58	0.97 – 2.62	
knowledge about prevention of STI* **			0.006
No	1.00	—	
Yes	3.18	1.39 – 7.69	

aOR*= adjusted Odds ratio, CI** = Confidence Interval, STI***: sexual transmitted infections.

DISCUSSION

This study estimated contraceptive prevalence among women of reproductive age attending health facilities in the Allada-Toffo-Zè Health Zone in 2023. While 40.10% of respondents were favorable to the use of contraceptive methods, the actual contraceptive prevalence was 20.79%. This prevalence was 14.74% in the study by Salifou and al. in Parakou in northern Benin, compared to 19% in the Mbacké Health District in Senegal according to Léyé et al, and 11% in the city of Port Harcourt in Nigeria according to Tobin-West.[3-5] The studies in Nigeria and Parakou were population-based, which may explain the lower prevalence. In the Mumbunda Health Zone of Lubumbashi in the Democratic Republic of Congo, the prevalence was 27.6%.[6] Higher prevalence rates have been reported in Ethiopia (46.9%) and Tunisia (66.4%, of which 82% were modern methods).[7,8] At the national level in Benin, modern contraceptive prevalence in 2023 was 15.4% compared to 9.1% in 2021 among women of reproductive age, according to the FP2030 2023 measurement report, which potentially prevented 180,000 unintended pregnancies, 66,000 unsafe abortions, and 670 maternal deaths.[9]

Injectable contraceptives (43%), implants (27%), and male condoms (14%) were the main methods used in this study. Similar findings have been widely reported, with injectable methods predominating, often in even higher proportions: 42.86% in Parakou, 55.6% in Senegal, and 62.9% in Ethiopia.[3,4,7] However, this pattern is not uniform. In the Mumbunda Health Zone of Lubumbashi in the DRC, the most commonly used methods were periodic abstinence (28.8%) and male condoms (17.6%), with injectables far behind (2.4%).[6] Likewise, in Tunisia, the intrauterine device was the primary method (37.2%), followed by contraceptive pills (33%), while injectables were used by only 1.1% of respondents.[8] Preferred methods vary according to region and study, as do the reasons underlying these choices. Beyond medical factors, the desire for discretion, the absence of risk of forgetting, and the lack of daily usage constraints explain the reliance on injectable contraceptives, implants, and, to some extent, intrauterine devices in socio-cultural contexts marked by frequent spousal opposition to contraception and social stigma.[3,4]

In any case, the use or non-use of modern contraceptive methods is influenced by several factors: parity, particularly primiparity and multiparity, knowledge of the effectiveness of contraceptive methods, knowledge about birth spacing by contraceptive method, knowledge about the prevention of sexually transmitted infections by

contraceptive method were positively associated with the use of modern contraceptive methods in this study.

Knowledge about contraceptive methods shapes women's attitudes, which in turn determine their contraceptive practices. Thus, women who are most inclined to use modern contraceptive methods are those who possess knowledge about them, as demonstrated by several studies.[3,4,6,10-12] However, beyond general knowledge, it is accurate information about contraception that promotes its use. Familiarity with various methods, their effectiveness, side effects, and the benefits of contraception are the main pieces of information positively associated with the adoption of contraceptive methods.[3-6] Conversely, myths, misinformation, and beliefs about contraception, such as the idea that it causes infertility, leads to the birth of deformed babies later, promotes female infidelity, or negative experiences linked to poor management of side effects, are factors negatively associated with the use of these methods.[13-19] Therefore, awareness campaigns must not only provide correct information, be repeated and include influential people such as husbands, but also debunk myths and false beliefs about contraception.[20] Moreover, follow-up for women using contraception should be planned in consultation with them to ensure proper management of any side effects. In this study, primiparity and multiparity were positively associated with the use of modern contraceptive methods. Indeed, these women already have children and have experience with sexual and reproductive health care, at least through the follow-up of previous pregnancies. The number of children is therefore one of the factors associated with contraceptive use, whether for spacing, limiting, or stopping births. Furthermore, health services and their providers constitute a key source of information about contraception, as reported in several studies.[8,11,12,21]

Socio-cultural factors such as educational level, area of residence, marital status, purchasing power, as well as institutional and organizational factors, particularly the accessibility of contraceptive methods, were not associated with the use of modern contraceptive methods in this study.

CONCLUSION

The prevalence of modern contraceptive use remains limited among women of reproductive age attending health facilities in the Allada-Toffo-Zè health zone. The determinants of the use of these methods are related to parity and women's knowledge of contraceptive methods. Interventions aimed at boosting contraceptive prevalence in this zone should target these factors, which are true levers for action. Therefore, it is appropriate to disseminate accurate information on family planning through mass awareness campaigns, individual counselling during gynecological, prenatal, and postnatal consultations, on a routine basis. This will contribute to accelerating the reduction of maternal mortality, improving household income, preventing girls from dropping out of school, enhancing professional opportunities for women, and promoting gender balance in the health zone.

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