

Evaluation of the Use of Jadelle Contraceptive Implant by Women in the City of Parakou in 2016

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Abstract

Introduction: Maternal mortality is still very high in Benin. Being one of the methods of reducing this mortality, contraception is still very rarely used in Benin, particularly in Borgou district. The objective of this work was to evaluate the experience of using Jadelle contraceptive implants by women in the city of Parakou in the Borgou department. **Methodology:** This was a descriptive cross-sectional study, with retrospective and prospective data collection over the period from March 1 to July 31, 2016. **Results:** A total of 320 women were involved in the study. The mean age was 28.29 years, with extremes of 16 and 44 years. Socio-professionally, housewives predominated (56.88%). Sixty-eight point forty-four percent of women were educated and only 111 (34.69%) women had reached secondary school; married women were mostly represented. Obstetrically, multi-gestures were the most affected (43.75%). Birth spacing was the main reason for choosing Jadelle (48.13%). Majority of patients had their husbands consent to use Jadelle contraceptive method (85.31%). Sixty-eight point fifty-two percent of women had used this contraceptive method for 2 to 4 years. Jadelle had been chosen by the majority (78.75%) of the women, for its long duration of action and its easy use. The dropout rate for Jadelle was 35/320 (10.94%) after 3 years of use. The failure rate for this method was 0.31% (1/320). The satisfaction rate was 87.5%. **Conclusion:** Jadelle contraceptive implants are an important part of contraceptive methods in Parakou.

Keywords

Contraceptive Method, Jadelle, Parakou, Benin

1. Introduction

By spacing births and reducing the frequency of miscarriages, the use of this contraception makes it possible both to reduce the high rate of maternal mortality in emerging countries (10 to 70/10,000 versus 3/10,000 in developed countries) and also infant mortality (113/1000 in Africa versus 12/1000 in Europe) [1]. The Benin Demographic and Health Survey (EDSB-IV) indicate high fertility rate (4.9 children per woman), a high rate of children and many early pregnancies (37%) [2]. In recent years, less restrictive modern contraceptive methods have been developed, including progestin implants. Contraceptive prevalence rate is low in Benin (12.5%), with 8% for modern methods [2]. The contraceptive implant, using a progestogen derivative as the active ingredient, has raised hope for interesting effective contraception to women who have a contraindication or intolerance to estrogen-progestogen pill or Intrauterine Device (IUD). Among these implants, the so-called new generation Jadelle implants have been marketed from the United States since 1996. These are 2-stick implants, each containing 75 mg of Levonorgestrel, manufactured using new chemical proceeds. These implants are effective for 5 years [3]. However, its prescription can only be considered in the light of its tolerance. A study reported 27% removal of contraceptive implants before the end of the expiry date of contraceptive effectiveness. The bad experiences with progestin implants recorded in the literature concern mainly women in developed countries. There are few studies in Africa on this issue.

The situation in Borgou district seems very worrying. Indeed, the Demographic and Health Survey in Benin reveals that this district has the highest fertility rate in Benin (4.9 children per woman with an index of 5.4 in rural areas) [2]. Modern contraceptive methods, particularly progestin-only implants, are rarely used (1.1%) by women in this department [2]. Through this work, we therefore suggest to evaluate the use of Jadelle contraceptive implants by women in Parakou, a town in the department of Borgou in Benin.

2. Method

This is a descriptive cross-sectional study over a period of 5 months from March 1 to July 31, 2016.

2.1. Study Population

The study population consists exclusively of women who have used Jadelle contraceptive implants at least once in their lifetime. These are patients who have consulted one of the Health Centres (HCs) in the city of Parakou: the Communal Health Centre (CHC) of Parakou, the HCs of Madina, Kpébié and Zongo.

- Involment criteria: The women involved in the study were women who had used Jadelle implant at least once in their lifetime, with the age group of 15 to 45 years and physical present on the day of the survey.
- Rejection criteria: The Women with major mental disorders were excluded

from the study

2.2. Sampling

The minimum sample size was calculated by the SCHWARTZ formula

$$n = \frac{Z\alpha^2 * p*(1-p)}{i^2}$$

n = minimum number of women to be surveyed, z = risk reduced deviation α (1.96), p : 7.9% contraceptive prevalence in Benin in 2011 [4], $q = 1 - p = 92.1\%$, $i = 3\%$ (desired accuracy for our results), $n = 310.57$ That was 311 women to be investigated. The sampling technique used was exhaustive recruitment.

2.3. Data Collection

The information was collected by a documentary review using a tabulation form that concerned the medical files; supplemented by an individual “investigator-investigated” interview.

2.4. Variables

The variables studied were: age, sex, level of education, ethnicity, religion, marital status, background, type of contraception previously used, gestational age, parity, desire for pregnancy, duration of using Jadelle implants, Jadelle implant side effects, patients satisfaction. Satisfaction was assessed by the law of all or nothing: it was coded yes/no.

Any woman who had used subcutaneous Jadelle implants at least once was considered a user of Jadelle.

The potential patient is a woman who attends a health center at the request of a family planning service: information, contraceptive prescription, insertion or withdrawal, follow-up or other services. Abandonment: Abandoning a contraceptive method is synonymous with stopping its use for any other reason than the desire for maternity or the expiry of the time limit for using the method.

The failure rate of a contraceptive method is the number of pregnancies contracted out of the total number of users of that method during a given period.

The duration of effectiveness of Jadelle implants is five years.

2.5. Data Processing and Analysis

The data entry was made using the EPI DATA 3.1 French version. The data were then analyzed using EPI INFO version 7 software. Text processing, tables and graphs were made possible thanks to Microsoft Word and Excel version 2010. Quantitative variables are expressed as means with their standard deviation and qualitative variables as proportions with their confidence interval.

2.6. Ethical Considerations

We obtained the agreement of the Departmental Director of Health of Borgou and Alibori and the managers of the various centers where we conducted the

study. Participants received detailed information about the study and agreed to participate. Data collection procedures were in accordance with the ethical principles contained in the Declaration of the World Medical Association of Helsinki.

3. Results

3.1. Socio-Demographic Characteristics (Table 1)

In total, 320 women were involved in our study with a mean age of 28.29 years

Table 1. Socio-demographic characteristics of patients.

	Effective	%
Age		
≤19	29	9.06
20 - 29	152	47.5
29 - 39	118	36.88
39 - 44	21	6.56
Marital status		
Married	277	86.56
Single	43	13.44
Profession		
Housewives	182	56.88
Liberal	86	26.87
Pupil / Student	28	8.75
Employee	24	7.5
School level		
Not in school	101	31.56
Primary school	96	30
Secondary school	111	34.69
Academic	12	3.75
Religion		
Muslim	190	59.38
Christian	116	36.25
Endogenous religion	14	4.37
Parity		
Nulliparous	19	5.94
Primiparous	57	17.81
Pauciparous (2 - 3)	106	33.13
Multiparous (4)	82	25.62
Large multiparous	56	17.5

and extremes of 16 and 44 years. There was a higher frequency of pauciparous. Moreover 12.50% of our patients had a history of wanted Pregnancy Interruption (VPI), and the average number of living children was 3.17.

3.2. Reasons for Contraception

The need for contraception was motivated by spacing birth for 85.64% of patients. **Table 2** shows the distribution of patients by reasons for choosing Jadelle contraception. Fourteen point sixty nine percent of patients had not obtained their husband consent.

3.3. Sources of Information

Figure 1 shows the distribution of patients by their main source of information on Jadelle implants. Midwives were the primary source of information for patients.

3.4. Previous Contraceptive Methods

Before Jadelle implants, 81.25% of patients did not have a contraceptive method;

Table 2. Patients motivation for Jadelle contraception (one choice possible).

	Effective	%
Long and loosely constraining contraception	261	82.56
Contraindications to IUDs or OPs	4	1.25
Information		
- a health worker	44	13.74
- the media or a friend	6	1.88
Other	5	1.56
Total	320	100

OP: Oestroprogestative; IUD: Intrauterine Device.

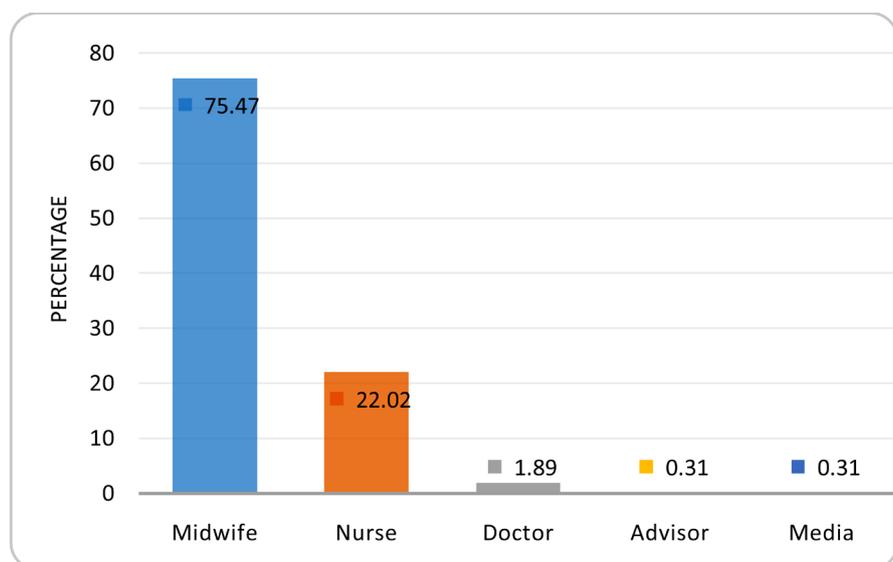


Figure 1. Distribution of patients by information sources.

Figure 2 shows the distribution of patients by previous contraceptive methods.

3.5. Side Effects of Jadelle

Table 3 shows the distribution of patients according to the side effects of Jadelle. A high proportion of patients (70; 21.87%) reported side effects, with a predominance of menstrual cycle disorders (pelvic pain during menstruation, amenorrhea, hyper-menorrhea, hypo-menorrhea). Amenorrhea were the most common menstrual cycle disorders observed (19; 5.94%); we recorded 2 (0.63%) cases of infection of Jadelle implant insertion site.

3.6. Wear Duration of Jadelle

Average duration of Jadelle use was 42.39 months with extremes of 11 and 72 months. **Figure 3** shows the distribution of patients by duration of Jadelle implants.

3.7. Reasons for Jadelle Withdrawal

One hundred and thirty-seven patients had their jadelle implants removed. There were 51 (15.94%) cases of abandonment: side effects (40); husband opposition (4); religious reasons (5); discomfort (1); change of contraceptive method (1). The proportion of abandonment was 11/320 (3.45%) at 1 year and 35/320 (10.94%) at 3 years; **Table 4** shows the distribution of patients according to the reasons for implant removal. We recorded one case of pregnancy despite the placement of Jadelle implants, which represents a failure rate of 0.31%.

3.8. Patients Satisfaction

Two hundred and eighty (87.5%) patients were generally satisfied and had agreed to counsel their family and friends.

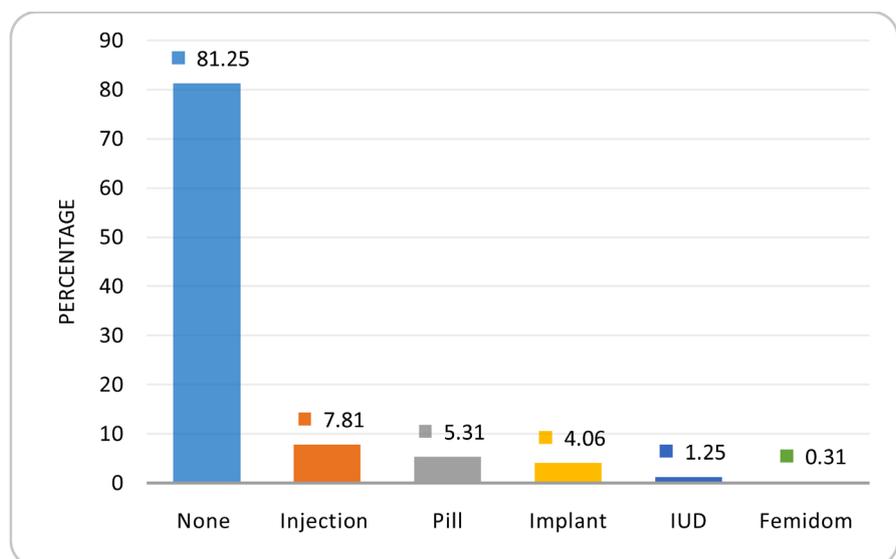


Figure 2. Distribution of patients by previous contraceptive methods used.

Table 3. Patients distribution by Jadelle's side effects.

Side effects	Effective	Percentage	IC _{95%}
HTA			
Yes	4	1.25	0.40 - 3.39
No	316	98.75	96.61 - 99.60
Headaches			
Yes	3	0.94	0.24 - 2.95
No	317	99.06	97.05 - 99.76
Pelvic pain			
Yes	20	6.25	3.96 - 10.10
No	300	93.75	89.61 - 97.60
Breast pain			
Yes	2	0.62	0.11 - 2.49
No	318	99.38	97.51 - 99.89
Pain at the insertion site			
Yes	2	0.62	0.11 - 2.49
No	318	99.38	97.51 - 99.89
Amenorrhea			
Yes	19	5.94	2.64 - 9.89
No	301	94.06	91.27 - 97.68
Acne			
Yes	2	0.62	0.11 - 2.49
No	318	99.38	97.51 - 99.89
Hypermenorrhea			
Yes	4	1.25	0.40 - 3.39
No	316	98.75	96.61 - 99.60
Hypomenorrhea			
Yes	2	0.62	0.11 - 2.49
No	318	99.38	97.51 - 99.89
Weight gain			
Yes	8	2.50	5.86 - 12.37
No	312	97.50	95.73 - 99.05
Hot flush			
Yes	3	0.94	0.24 - 2.95
No	317	99.06	97.05 - 99.76
Others			
Yes	3	0.94	0.24 - 2.95
No	317	99.06	97.05 - 99.76

Others: nervousness 1 vertigo 1 Spaniomenorrhea 1.

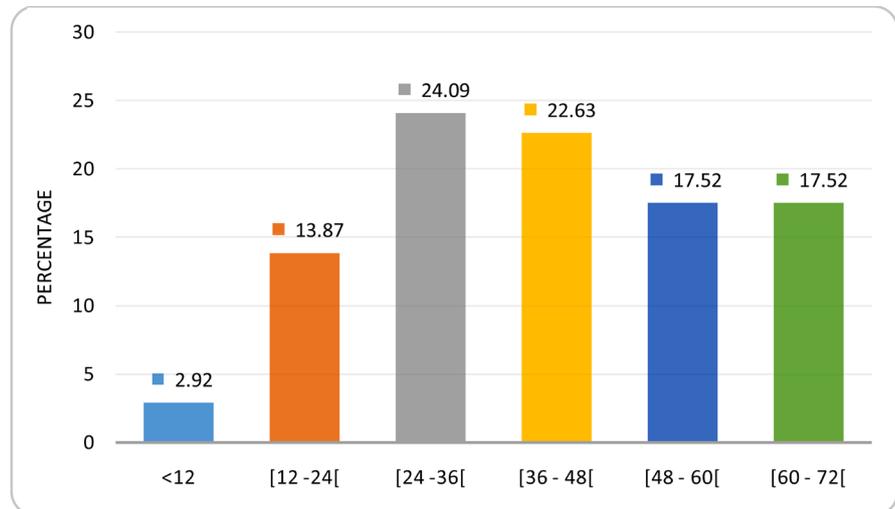


Figure 3. Distribution of patients by duration use of Jadelle implants.

Table 4. Distribution of patients by reason for Jadelle implants removal.

	Effective	%
Desire for pregnancy	66	48.18
Side Effects	40	29.20
Expiry of effectiveness	19	14.60
Change of contraceptive method	1	0.73
Discomfort	1	0.73
Husband opposition	4	2.91
Religious reason	5	3.65
Pregnancy	1	0.73
Total	137	100

4. Discussion

Participants mean age in our study was 28.29 years. This result is similar to those of Sergeant [3], Kouakou [5], and Adetoro [6] who reported an average age of 28 years. However, other authors have found a mean age of 32 years higher than that of our series. The 20 - 29 age group was the most represented in our series (47.50%). Martin [7] in France, had noted a predominance of the 20 to 25 age group. These results show that younger women are particularly interested in contraceptive implants.

The Muslim religion predominated in our series (59.38%). But this religious configuration is similar to that of the city of Parakou where she resides. Argina [8] had obtained a predominance of the Christian religion in her series. Despite the reluctance of some religions, it could be said that religion has little influence on the use of contraceptive implants.

Married women were in majority represented (86.56%) in our series. This result is close to that of Ralisata [9]. Married women have more or less regular

sexual relations and seem to be aware of their high risk of pregnancy... Housewives were the most represented in our series (56.88%). This result is similar to that reported by some authors [9] [10].

Multiparous women were mainly represented (43.13%) among our patients. Multiparity was also predominant in some studies [9] [10]. These observations could be justified by the fact that women with children would be more inclined to birth spacing due to their difficulties, but 5.63% of Jadelle users in our series were nulligest: This shows that this contraceptive method is not limited to women with children.

More than 10% of our Jadelle users had a history of wanted pregnancy interruption (abortion). This proportion is lower than that obtained by Ralisata [9] (45.40%). This history of abortion may justify the choice of a long-term contraceptive method such as Jadelle so as not to have to make a radical and risky choice such as abortion.

Most of the spouses (85.31%) of our patients were consenting to the use of Jadelle implants by their wives. The lack of access to good information on different contraceptive methods could justify the hostility of some men, hence the usefulness of strengthening the different means of raising awareness among the population.

A high proportion of patients (70; 21.87%) reported side effects, with amenorrhea predominating (5.94%), Igwe [11] in Nigeria and Bitzer [12] in Switzerland also reported higher proportions of amenorrhea under contraceptive implants, 58.8% and 33% respectively. Some studies report the prevalence of other bleeding disorders under contraceptive implants: spotting (54.70%) in Senegal [13], irregular bleeding (27%) in Belgium [14]. In our study, we observed a small proportion of side effects unrelated to the menstrual cycle under Jadelle. Similar results have been reported by Lankoande [15] and Croxatto [16].

Complications at the insertion site of Jadelle implants were rare. In contrast, in the United States in 1995, Wysowski [17] reported 24 women hospitalized for infectious complications. The occurrence of complications from the implant insertion site would in most cases be related to the competence of the providers and the asepsis conditions.

Jadelle implants average duration was 42.39 months in our study. This duration is higher than those reported by Argina [8] in Ethiopia and Dugoff [18] in the United States respectively 25.3 months and 13.2 months. Maternity was the main reason for removing Jadelle implants for our patients (48.18%). This result is similar to those of Champootaweeep [19], and Igwe [11]. Like Musham [20] in the United States, in our serie, side effects were the first reason for abandoning Jadelle (29.20%). Sihvo [21] in Finland had reported cases of Jadelle abandonment for depression and nervousness. The drop-out rate was 10.94% at 3 years in our series. This rate is lower than that reported by Sergent [3] in France: 30% before 2 years. Contraceptive implants seem to be better tolerated by women in Benin. Other prospective follow-up studies, after the insertion of Jadelles, will

certainly be able to better inform us on the issue.

We noted a failure rate of 0.31% in our study. Koné [10] had objectified 2 cases of pregnancy in patients who were on anti-tuberculosis drugs. In view of all this, we could say that Jadelle remains an effective and acceptable contraceptive method. Most of our patient under Jadelle were satisfied (87.5%) and had agreed to recommend it to their family and friends. Sergeant [3] reported a dissatisfaction rate of 81%, lower than that in our study, and according to our results Jadelle users were predominantly educated (68.44%). Hodonou [22] had reported the positive attitude of married teachers towards contraception. Sépou [23] had also shown that there was a significant relationship between educational level and contraceptive use. Most health information and awareness is provided in French and therefore requires a certain level of education to be understood.

One of the limitations of our study was that it was partly retrospective, leading to information bias. Moreover, not all users of Jadelle implants were interviewed.

5. Conclusion

Jadelle's users are young. Most of them had never used a contraceptive method previously. Side effects were rare and dominated by menstrual disorders typed amenorrhea. Most of them were satisfied.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix. Individual Survey Form

SOCIO-DEMOGRAPHIC CHARACTERISTICS:

Age (at the time of installation).....

Age (at the time of withdrawal).....

Female occupation: Housewife /____/ Liberal /____/ Student /____/ Employee /____/ Other /____/ Specify.....

Women's educational level: Primary /____/ Secondary /____/ University /____/ Out of school /____/

Marital status: Married /____/ Single /____/

Religion: Muslim /____/ Christian /____/ Endogenous religion /____/

Parity: Nulliparous /____/ Primiparous /____/ Poor (2-3) /____/

Multipare (4) /____// Large multipare (>4) /____/

Number of living children /____/ History of induced abortion /____/

HAVE YOU BEEN INFORMED ABOUT THE ADVANTAGES AND DISADVANTAGES OF JADELLE BEFORE INSTALLATION? No /____/ Yes /____/

If yes by whom?

Counsellor /____/ Physician /____/ Midwife /____/ Nurse /____/

Other /____/ Specify

HUSBAND'S/PARTNER'S CONSENT: YES /____/ NO /____/

WHAT CONTRACEPTION DID YOU PREVIOUSLY USE?

MOTIVATION FOR THIS METHOD OF CONTRACEPTION:

Long, loosely constraining contraception /____/

Contraindication to estrogen-progestin or IUDs /____/

Following the advice of a health worker /____/

Following the advice of a friend /____/ Following the advice of the media /____/

Other /____/ Specify.....

DURATION OF USE:

<1-2 years /____/ 2-3 years /____/ 3-4 years /____/ 4-5 years /____/ 5-6 years /____/

DID YOU NOTICE A CHANGE UNDER JADELLE? No /____/ Yes /____/ with

Weight change: Weight gain in kg/____/ Weight loss in kg /____/

Menstrual cycle disorders: Amenorrhea /____/ Dysmenorrhea /____/ Polymenorrhea /____/ Spaniomenorrhea /____/ Hypermenorrhea /____/ Others /____/ Specify.....

Blood pressure abnormalities: No /____/ Yes /____/ If Yes specify.....

Other /____/ Specify.....

ARE YOU TAKING ANY MEDICATION SINCE THE POSE? No/____/ yes/____/

If yes which:.....

REASONS FOR WITHDRAWAL:

Desire for pregnancy /____/ Side effects /____/ Expiration of efficacy /____/ Choice of another contraceptive method /____/ Other /___/ Specify.....

DEGREE OF SATISFACTION WITH THE JADELLE:

Satisfied /___/ not satisfied /___/ satisfied but adverse reactions /___/

DO YOU PLAN TO GIVE AN IMPLANT AT THE END OF THESE 5 YEARS?

Yes /___/ No /___/

WOULD YOU RECOMMEND IT TO THOSE AROUND YOU ? Yes /___/ No /___/

DO YOU HAVE ANY COMMENTS ABOUT JADELLE ? :.....