

Associated Factors and Consequences of Uterine Fibroids in Hospitals in the Borgou Department of Benin in 2022

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Abstract

Introduction: Uterine fibroids are the most common gynecological tumors in women of childbearing age and have multiple clinical manifestations. **Objective:** To determine factors associated with uterine fibroids in the Borgou department of Benin in 2022. **Method:** Descriptive, analytical cross-sectional study from August 22 to September 22, 2022. The sample consisted of women consulting for gynecological problems in 6 hospitals in the Borgou department in the North of Benin. Results: Of the 744 women surveyed, 10.1% were diagnosed with uterine fibroids. Women with uterine fibroids were often married, paucigesture, and nulliparous. Their main reasons for consultation were the desire for motherhood (50.7%), pelvic pain (46.7%), and genital hemorrhage (14.7%). Age, history of miscarriage, high blood pressure, and diabetes were significantly associated with the presence of uterine fibroids (<0.0001). **Conclusion:** Uterine fibroids are common in hospitals in northern Benin. There were factors associated with them that should be taken into account in management strategies.

Keywords

Uterine Fibroid, Associated Factor, Consequence, Benin

1. Introduction

These are the most common benign gynecological tumors in women: A prevalence of 4.5% - 68.6% according to studies [1]. In France, Rongières *et al.* [2] reported a prevalence of 20% of patients aged 40 years or older with uterine fibroids and a preponderant incidence of 50% of women with uterine fibroids post-

mortem. Black American women are more likely to develop a uterine fibroid than white, Asian or Hispanic women: by menopause, 80% of black women had developed a uterine fibroid [3]. Their clinical manifestations are multiple, however the majority of them are asymptomatic [4] [5]. The discovery is often made during a consultation for the desire to have a child. The etiology of uterine fibroids remains unknown. They rarely appear before the first menstrual period and usually experience a regression after menopause. The consequences of uterine fibroids are often a threat to reproductive health. Outside of black race, certain risk factors for uterine fibroids have been described in the literature. However in Africa and in particular in Benin, few studies have looked at the epidemiology of uterine fibroids. The objective of our research was to determine the factors associated with uterine fibroids in the Borgou department of Benin in 2022.

2. Study Framework and Method

2.1. Type and Period of Study

This was an analytical, descriptive cross-sectional study with prospective data collection from August 22 to September 22, 2022.

2.2. Study Population

It consisted of women who came for gynecological consultation in the gynecology and obstetrics departments of the hospitals selected for this study, during the data collection period. The presence of uterine fibroids in a woman was confirmed by a pelvic ultrasound performed by a gynecologist or radiologist. Not included in this study were pregnant women. Our study excluded all women who did not give their free and informed consent.

The study took place in the Gynecology and Obstetrics Department 6 hospitals of the Borgou department in Benin in 2022: the Departmental University Hospital of Borgou and Alibori (DUH-B/A), the Army Training Hospital (ATH) of Parakou, the Saint Jean de Dieu Zone Hospital of Boko (SJZHB), the Saint Martin Zone Hospital of Papané (SMZHP), the Sounon Sero Zone Hospital of Nikki (SSZHN) and the Evangelical Zone Hospital of Bembèrèkè (EZHB).

2.3. Sampling

The sample size (N) was calculated according to the SCHWARTZ formula.

$$N = \frac{Z \times \alpha^2 \times p \times q}{i^2} \quad (1)$$

With: p : prevalence of fibroids worldwide (22.5%) [1], q : $1 - p = 1 - 0.225 = 0.775$, a first species risk (α) of 0.05 *i.e.* $z \alpha = 1.96$; a desired accuracy (i) of 3%; $N = (1.96)^2 \times 0.225 \times 0.775 / (0.03)^2 = 744$ subjects. The sampling technique is presented in three (03) steps:

- Step1: A cumulation of the expected populations of women of childbearing age (15 - 49 years) by health zone of the centers to be visited was made using the statistical numerical base of each health zone. **Table 1** shows the expected

population of women of childbearing age by health zone.

- Step 2: Calculation of the number of women to be surveyed per center: A weight (p) was calculated from the sample size and the cumulative found in step 1 and applied to the total number of women of childbearing age expected per health zone; this weighting allowed us to find the number of women to be surveyed per center to be surveyed. $p = \text{sample size}/\text{cumulative expected women of childbearing age} = 744/557,801 = 0.00133381$. This weight, multiplied by the total number of women of childbearing age expected per health zone, gives us the number of women to be surveyed per center. **Table 1** shows the number of women of childbearing age to be surveyed by center.
- Step 3: In the health centers, the women to be surveyed were randomly selected until the height was reached

2.4. Data Collection

The collection technique was a structured interview with the administration of a digitized questionnaire to our respondents in the first instance and then secondarily the missing information was completed thanks to the consultation files after the interview. The data collection was done using a questionnaire that was validated, tested and digitized by the kobocollect application. A team had been set up and trained for this purpose. Also, the consultation boxes will be used for additional information.

2.5. Study Variable

The dependent variable was the presence of uterine fibroid.

The independent variables were:

- Sociodemographic variables: age, place of origin, occupation, level of education, marital status, household type, economic level
- anthropometric parameters: weight, height, body mass index (BMI)
- reasons for consultation

Table 1. The socio-demographic characteristics of the study population.

Name of the center	Population of women of childbearing age expected	Number of women
Departmental University Hospital of Borgou and Alibori (DUH-B/A)	110.768	148
Saint Martin Zone Hospital of Papanè (SMZHP)	61.555	82
Evangelical Zone Hospital of Bembèrèkè (EZHB)	60.272	80
Saint Jean de Dieu Zone Hospital of Boko (SJZHB)	110.768	148
Sounon Sero Zone Hospital of Nikki (SSZHN)	103.670	138
Army Training Hospital (ATH) of Parakou	110.768	148
Total	557.801	744

- variables related to paraclinical examinations: pelvic ultrasound result, hemoglobin level
- Personal history: medical, gynecological, obstetric, surgical
- family history of uterine fibroids

2.6. Data Analysis

The data collected had been recorded and processed with Rstudio software. Qualitative variables were presented as percentages and quantitative variables were averaged with their standard deviations. Karl Pearson's uncorrected Chi-square (χ^2) tests, Fisher's exact tests were used to look for the statistically significant relationship. Measures of association had also been calculated. The significance level was set at a p-value of less than 0.05.

2.7. Ethical Considerations

The research protocol had been submitted to the local ethics committee of the University of Parakou for a favourable opinion. This work was carried out in accordance with the standards of professional conduct in force. The agreement of the authorities at various levels had been obtained. Patients' verbal or written consent had been obtained.

3. Results

A total of 744 women across 6 sites were surveyed. The diagnosis of uterine fibroid was made in 10.1% of women seen in consultation with a 95% confidence interval of [8.1% - 12.4%].

3.1. Sociodemographic Characteristics of the Study Population

The mean age of women with uterine fibroids was 30.49 years \pm 9.63 years with extremes of 13 and 70 years. 32.0% (24/75) of the women were housewives.

Women with uterine fibroids were married 54.7% (41/75), monogamous 50.7% (37/75), polygamous 49.3% (36/75), not in school 28.0% (21/75) and had a monthly income of less than 40000 Franc CFA (48/75). **Table 2** presents the socio-demographic characteristics of the study population.

3.2. Method of Admission and Reasons for Consultation

All the women with uterine fibroids had gone to the various hospitals on their own. Desire for motherhood 50.7% (38/75), pelvic pain 46.7% (35/75) and genital hemorrhage 14.7% (11/75) were their main reasons for consultation. Genital hemorrhages were divided into menorrhagia 2.7% (2/75) and metrorrhagia 12% (9/75). **Figure 1** shows the distribution of the study population by reason for consultation.

3.3. Background

Women with uterine fibroids were hypertensive (11/75) or 14.7%, diabetic (3/75)

or 4.0%. 72.0% (54/75) of them had an irregular menstrual cycle, 37.3% (28/75) were on hormone treatment. They were paucigesture 32.0% (24/75) and nulliparous 37.3% (28/75). They had at least one miscarriage in 62.7% of cases. **Table 3**

Table 2. Socio-demographic characteristics of the study population.

	Study population (n = 744)		Women with fibroids (n = 75)	
	N	%	N	%
Age (years)				
<20	16	5	06,7	00,0
[20 - 30[	333	44,8	18	24,0
[30 - 40[	243	32,6	26	34,7
[40 - 50[	42	12,6	25	33,3
≥50	36	04,8	06	08,0
Marital status				
bachelor	48	06,4	02	02,7
Bride	355	47,7	41	54,7
concubinage	338	45,4	28	37,3
divorcee	04	00,5	04	05,3
Educational attainment				
None	261	35,0	21	28,0
Literate	11	01,5	02	02,6
Primary	209	28,0	20	26,7
Secondary	154	20,7	20	26,7
Upper	110	14,8	12	16,0
Occupation				
Housewife	256	34,4	24	32,0
Trader/reseller	168	22,5	23	30,6
Artisan	115	15,4	11	14,7
Official	105	14,1	14	18,7
Pupil/Student	55	07,4	00	0,0
Income (FCFA)				
<40,000	462	62,0	36	48,0
[40,000 - 80,000[	187	25,2	23	30,7
[80,000 - 120,000[	71	09,5	11	14,7
[120,000 - 160,000[	11	01,5	01	1,3
[160,000 - 200,000[	04	00,5	00	0,0
>200,000	10	01,3	04	5,3

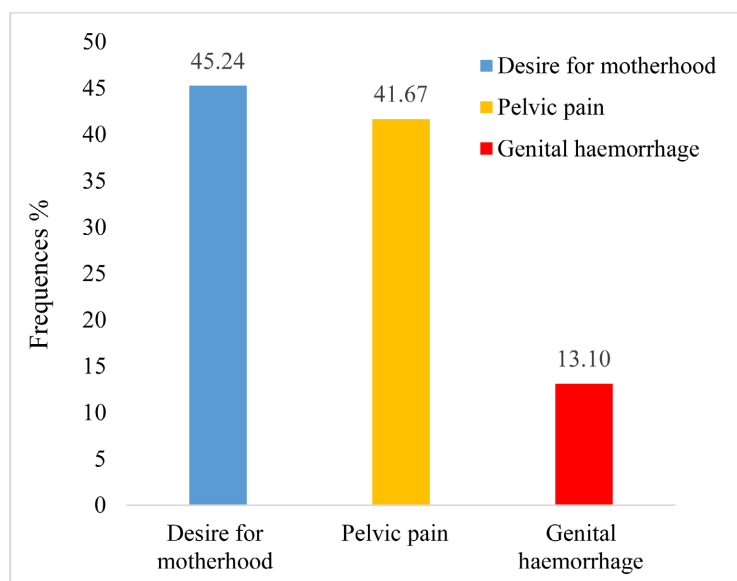


Figure 1. Distribution of women consulting gynecology according to the reason for consultation.

Table 3. Distribution of the study population according to their reproductive characteristics.

	Study population (n = 744) Women with fibroids (n = 75)			
	N	%	N	%
Gesture				
Nulligesture	132	17.6	11	14.7
Primigesture	168	22.6	15	20.0
Paucigesture	209	28.1	24	32.0
Multigesture	165	22.2	18	24.0
Great multi-gesture	71	09.5	07	09.3
Parity				
Nulliparous	225	30.2	28	37.3
Primiparous	151	20.3	15	20.0
Pauciparous	193	25.9	17	22.7
Multiparous	132	17.7	12	16.0
Large multiparous	44	05.9	3	04.0
Number of miscarriages				
0	462	62.0	28	37.3
1 - 2	243	32.6	35	46.8
≥3	40	05.4	12	15.9

shows the distribution of the study population by reproductive characteristics.

One of the women with uterine fibroids had a family history of uterine fibroids, which is 1.3% of cases.

3.4. Classification of Uterine Fibroids

The mean height of the uterus in patients with fibroids was 3.69 cm with extremes of 0 and 31 cm. 56.0% (42/75) of uterine fibroids were multiple, and 44.0% (33/75) of them were single. Of the 75 women with uterine fibroids, 19 women were classified as stage 2 according to the FIGO classification of uterine fibroids, *i.e.* 25.3%. Fibroids were submucosal 57.3% (43/75), interstitial 48.0% (36/75), and subserosal 22.7% (17/75). **Table 4** shows the distribution of uterine fibroid cases according to the FIGO classification. A proportion of 28% (21/75) of women with uterine fibroids had an associated ovarian cyst.

3.5. Complications of Uterine Fibroids

A proportion 80.0% (60/75) of women with uterine fibroids had at least one complication. In fact, we recorded 54.7% (41/75) of uterine fibroids complicated by infertility. **Table 5** shows the distribution of women with uterine fibroids according to their complications.

Table 4. Distribution of uterine fibroids according to the International Federation of Obstetrics and Gynecology (FIGO) classification.

	FIGO	Number (n = 75)	%
Submucosal myomas	0	08	10.7
	1	16	21.3
	2	19	25.3
Interstitial myomas	3	18	24.0
	4	18	24.0
Subserous myomas	5	14	18.7
	6	01	1.3
	7	02	2.7
Other	8	02	2.7
Hybrid (affecting both the endometrium and the serosa)	2-5	02	2.7

Table 5. Distribution of women with uterine fibroids according to their complications.

	Number (n = 75)	%
Infertility	41	54.7
Pelvic pain	09	12.0
Menometrorrhagia	07	09.3
Anemia	05	06.7
Fibroid necrobiosis	01	01.3
Uncomplicated fibroid	11	14.7

3.6. Analytique Study

Table 6 provides a comprehensive analysis of the factors associated with and consequences of uterine fibroids in hospitals within the Borgou department in Benin in 2022. Upon examining the data, several significant trends emerge,

Table 6. Factors Associated with uterine fibroids.

	Total	Uterine fibroids				RP	IC 95%	P
		Yes		No				
		n	%	N	%			
Age (years)								<0.0001
<20	50	0	0.0	50	100.0	-	-	
[20 - 30[	333	18	5.4	315	94.6	1	-	
[30 - 40[	243	26	10.7	217	89.3	2.1	[1.12 - 3.92]	
[40 - 50[	83	25	30.1	58	69.9	7.54	[3.87 - 14.70]	
≥50	36	6	16.7	30	83.3	3.5	[1.29 - 9.49]	
Body Mass Index								0.0785
<18.5	28	2	7.1	26	92.9	0.85	[0.19 - 3.72]	
18.5 - 25	471	39	8.3	432	91.7	1		
[25 - 30[	175	22	12.6	153	87.4	1.59	[0.92 - 2.77]	
≥30	71	12	16.9	59	83.1	2.25	[1.12 - 4.55]	
Parity								0.6631
Nulliparous	225	28	12.4	197	87.6	1.93	[0.56 - 6.68]	
primiparous	151	15	9.9	136	90.1	1.5	[0.42 - 5.44]	
Pauciparous	193	17	8.8	176	91.2	1.32	[0.37 - 4.70]	
Multiparous	132	12	9.1	120	90.9	1.36	[0.37 - 5.07]	
Large multiparous	44	03	6.8	41	93.2	1	-	
Number of miscarriages								<0.0001
0	462	28	6.1	434	93.9	1	-	
[1 - 2]	243	35	14.4	208	85.6	2.61	[1.54 - 4.40]	
[3 - 7]	40	12	30.0	28	70.0	6.65	[3.06 - 14.45]	
History of high blood pressure								<0.0001
yes	30	11	36.7	19	63.3	395.18	[52.95 - 15,492.92]	
no	715	01	00.1	714	99.9	1	-	
History of diabetes								0.0004
yes	10	3	30.0	07	70.0	33.68	[4.86 - 181.74]	
no	735	9	01.2	726	98.8	1	-	

highlighting associations. Concerning age, a statistically significant correlation has been established ($p < 0.0001$). The analysis reveals a substantial increase in the relative risk (RR) with age, indicating a rising prevalence of uterine fibroids among older women. Regarding Body Mass Index (BMI), although the trend suggests a slightly higher risk in women with $BMI \geq 30$, no significant association was observed ($p = 0.0785$). Parity did not show a significant link to the presence of uterine fibroids ($p = 0.6631$), indicating that different parity levels do not exhibit marked variations in fibroid prevalence. The number of miscarriages demonstrates a significant correlation with uterine fibroids ($p < 0.0001$). Women who had 1 to 2 miscarriages have an increased risk, and this risk substantially rises for those who had 3 to 7 miscarriages. A significant association was evident between a history of hypertension and the presence of uterine fibroids ($p < 0.0001$). Women with a history of hypertension had a high risk of developing fibroids compared to those without such history. As for the history of diabetes, a significant association is also observed ($p = 0.0004$), indicating an increased risk of uterine fibroids among women with a history of diabetes.

3.7. Profile of Women with Uterine Fibroids

In this study, women with uterine fibroids were aged 30 to 39 years, housewives, married, paucigesture and nulliparous, with a history of spontaneous miscarriage.

4. Discussion

This was a cross-sectional study with an analytical purpose and prospective data collection. The sampling technique used allowed us to determine the number of women to be surveyed per center. Random sampling helps to limit sampling bias. There are certainly some biases in this study that are specific to studies based on declarative data and those specific to the choice of collection sites that are hospitals. Our results were based on hospital data. These results could be generalized to women seen in gynaecological consultations in northern Benin. But they could not be generalized to the population of northern Benin.

At the end of this work, our objectives had been achieved: The frequency of uterine fibroids in hospitals in northern Benin was 10.1% (75/745) among female gynecological consultants, with a 95% confidence interval of [8.1% - 12.4%]. Factors associated with uterine fibroids were: age ($p < 0.0001$), history of miscarriage ($p < 0.0001$), history of high blood pressure ($p < 0.0001$), and history of diabetes ($p = 0.0004$). The consequences of uterine fibroids were: infertility (54.7%), pelvic pain (12.0%), menometrorrhagia (9.3%), anemia (6.7%), aseptic necrobiosis (1.3%).

The frequency of symptomatic uterine fibroids was 10.1% in hospitals in northern Benin. This frequency is similar to those reported in population-based studies by Fernandez *et al.* [6] in France (8.8%), Zimmermann *et al.* [7] in Italy (9.8%), Korea (9%), Germany (8%) and Brazil (7%). These results confirm that

most uterine fibroids are asymptomatic.

In our series, the main reasons for consultation for women with uterine fibroids were: desire for motherhood (50.7%), pelvic pain (46.7%) and genital hemorrhage (14.7%). Dembele *et al.* [8] find in their series the same reasons for consultation but in different proportions: desire for motherhood (35%), pelvic pain (35%), genital hemorrhage (17.5%). These observed differences could be explained by the difference in the study methods used.

In this study, half of the women (50.7%) with uterine fibroids had consulted for desire for motherhood. Dembele *et al.* [8] in Kayes, also report a high proportion of women with uterine fibroids seen in consultation for desire for motherhood (35%). These high proportions could be explained by the culture in Africa characterized by the importance of motherhood for women. Uterine fibroids accounted for 2-3% of causes of infertility [9] [10]. Interstitial and submucosal uterine fibroids are characterized by low fertility and a higher rate of spontaneous miscarriage [5] [9].

Menorrhagia accounted for 12.0% of the reasons for consultation among women with uterine fibroids. This frequency is similar to that reported by Tiemtoré-Kambou *et al.* [11] in Burkina Faso (12.1%).

In this study, we found 57.3% submucosal fibroid, 48% interstitial fibroid, 22.7% sub-serosal fibroid. These results are different depending of the study population and methodology: Balungwe *et al.* [12] in the Democratic Republic of Congo had found 48.6% submucosal fibroid, 0.55% interstitial fibroid, 1% sub-serosal fibroid. Tiemtoré-Kambou *et al.* [11] in Burkina Faso had found 6.4% submucosal fibroid, 48.9% interstitial fibroid, 11.8% subserosal fibroid.

Statistical age was linked to the appearance of uterine fibroids ($P < 0.0001$). Indeed. Compared to women aged 20 to 29, women aged 30 and over have a greater risk of having a uterine fibroid (RP = 2.1). 95% CI [1.12 - 3.92] with a higher risk between 40 and 49 years (RP = 7.54). 95% CI [3.87 - 14.70]. According to Wise *et al.* [13] the highest incidence of uterine fibroids is in the 40 - 44 age group. According to the study by Baird *et al.* [14] in the United States, 60% of women have a uterine fibroid at menopause (age 50). The appearance of uterine fibroids is similar to the period of genital activity. Their development occurs in the post-pubertal period and their growth decreases from menopause. The rate of appearance increases with age to reach a peak in the perimenopausal period [2].

History of high blood pressure was statistically associated with uterine fibroid ($p < 0.0001$). A similar result was reported by Boynton-Jarrett *et al.* [15]. According to these authors' explanations, high blood pressure represents a "proatherogenic" state which increases the risk of developing uterine fibroids. Elevated blood pressure can cause damage to smooth muscle cells and/or release of cytokines and thus increase the risk of the appearance or growth of uterine fibroids in a process analogous to atherosclerosis [15].

We also found that diabetes was statistically associated with uterine fibroid ($p = 0.0004$) but there was no association between body mass index and uterine fi-

broid. According to some studies, obesity and excessive weight gain had a positive association with fibroids [6] [16].

Spontaneous miscarriages were significantly associated with the presence of uterine fibroids ($p < 0.0001$). The greater the number of miscarriages, the greater the risk of having a fibroid. Klatsky *et al.* [17] finds an association between interstitial fibroids and spontaneous miscarriages. Kellal *et al.* [18] found a significant association between first trimester bleeding and uterine fibroids during pregnancy. These first trimester bleedings and spontaneous miscarriages in cases of fibroid and pregnancy association could be explained by the hormonal imbalance common during fibromatous disease on the one hand, and on the other hand by the deformation of the uterine cavity due to the presence of submucosal fibroid [18].

5. Conclusion

Uterine fibroids are common in hospitals in northern Benin. Their main circumstance of discovery was the desire for motherhood. We found certain factors that were associated with these uterine fibroids. These factors should be taken into account in management strategies for this condition.

Conflicts of Interest

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

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Annexe—Questionnaire

No	Question title	Answer options	Code
SOCIO-DEMOGRAPHIC DATA			
Q1	Age (in years)		---
Q2	Place of origin	1 = DUH-B/A; 2 = SJZHB; 3 = ATH of Parakou; 4 = EZHB; 5 = SSZHN; 6 = SMZHP;	---
Q3	Profession	1 = Homemaker; 2 = Civil servant; 3 = Learner (student); 4 = Cultivator; 5 = Artisan; 6 = Trader/Seller; 7- Other (specify)	---
Q4	Educational level	1 = None; 2 = Literacy; 3 = Primary; 4 = Secondary; 5 = University	---
Q5	Monthly income (FCFA)	1: < 40,000; 2: [40,000 - 80,000]; 3: [80,000 - 120,000]; 4: [120,000 - 160,000]; 5: [160,000 - 200,000]; 6: >200,000	---
Q6	Marital status	1 = Single; 2 = Married; 3 = Divorced; 4 = Widowed; 5 = Common-law union	---
Q7	Type of household	1 = Monogamous; 2 = Polygamous	---
Q8	Ethnicity	1 = Bariba; 2 = Dendi; 3 = Fulani; 4 = Fon and related; 5 = Otamari and related; 6 = Yoruba and related; 7 = Others (specify)	---
Q9	Religion	1 = Christian; 2 = Islam; 3 = Endogenous religions; 4 = No religion; 5- Others (specify)	---
Q10	Do you consume?		
Q10-1	Tobacco in any form?	1- Yes; 2- No	---
Q10-2	Alcohol?	1- Yes; 2- No	---
CLINICAL DATA			
Q11	Mode of admission	1- Emergency; 2- Voluntary	---
Q12	Reason for consultation		
Q12-1	Desire for maternity	3- Yes; 4- No	---
Q12-2	Pelvic pain	3- Yes; 4- No	---
Q12-3	Dysmenorrhea	1- Yes; 2- No	---
Q12-4	High genital bleeding	1- Menorrhagia; 2- Metrorrhagia; 3- Menometrorrhagia	---
Q12-5	Others (specify)		---
Q13	Previous Treatments		
Q13-1	Hormonal treatment	1- Yes; 2- No	---
Q13-1-1	If yes, specify		---
Q13-2	Non-hormonal treatment	1- Yes; 2- No	---
Q13-2-1	If yes, specify		---
PERSONAL HISTORY			
Q14	Medical History		
Q14-1	Hypertension	1- Yes; 2- No	---

Continued

Q14-2	Diabetes	1- Yes; 2- No	---
Q14-3	Coagulation disorders	1- Yes; 2- No	---
Q14-4	Hemoglobinopathy	1- Yes; 2- No	---
Q14-5	Others (specify)		---
Q15	Surgical History		
Q15-1	Cesarean section	1- Yes; 2- No	---
Q15-1-1	If yes, indication?		---
Q15-2	Laparotomy	1- Yes; 2- No	---
Q15-2-1	If yes, indication?		---
Q15-3	Others (specify)		---
Q16	Family History		
Q16-1	Family history of fibroids	1- Yes; 2- No	---
Q16-1-1	If yes, receive treatment.		---
Q16-2	Others (specify)		---
Q17	Obstetric History		
Q17-1	Gesture	1- Nulligesture 2- Primigesture 3- Paucigesture 4- multigesture 5-great multigesture	---
Q17-2	Parity	1- Nulliparous; 2- Primiparous; 3- Pauciparous; 4- Multiparous; 5- large multiparous	---
Q17-3	Number of living children		---
Q17-4	Miscarriage	1- Yes; 2- No	---
Q17-4-1	If miscarriage, specify the number of times.		---
Q17-5	Premature birth	1- Small premature [34 weeks, 37 weeks]; 2- Medium premature [32 weeks, 34 weeks]; 3- Large premature [28 weeks, 32 weeks]; 4- Very large premature [22 weeks, 28 weeks]	---
Q17-5-1	If premature birth, specify the number of times.		---
Q17-6	Stillborn	1- Yes; 2- No	---
Q17-6-1	If stillborn, specify the number of times.		--
Q17-7	Number of deceased children		---
Q18	Gynecological History		
Q18-1	Menstrual cycle	1- Regular; 2- Irregular	---
Q18-2	Adoption of a contraceptive method	1- Yes; 2- No	---
Q18-2-1	If yes, specify		---
Q18-3	Others (specify)		---

Continued**PHYSICAL EXAMINATION ON ADMISSION**

Q19	General condition assessment		
Q19-1	General condition	1- Satisfactory; 2- Not very satisfactory; 3- Altered	---
Q19-2	Pallor	1- Yes; 2- No	---
Q19-3	Temperature	1- Normal; 2- Hypothermia; 3- Hyperthermia	---
Q19-4	Blood pressure	1- Normal; 2- Hypotension; 3- Hypertension	---
Q19-5	Weight (in kg)		---
Q19-6	Height (in m)		---
Q19-7	Body Mass Index (BMI) (in kg/m ²)		---
Q20	Obstetrical examination		
Q20-1	Uterine height (in centimeters)		---
Q20-2	Uterine contour	1- Smooth; 2- Regular; 3- Irregular; 4- Bumpy; 5- Others (specify)	---
Q20-3	Sensitivity	1- Painful; 2- Painless	---
Q20-4	Mobility	1- Fixed; 2- Mobile	---
Q20-5	Consistency	1- Hard; 2- Stony; 3- Firm; 4- Elastic	---
Q20-6	Others (specify)		---

PARACLINICAL EXAMINATIONS

Q21	Ultrasound		
Q21-1	Fibroids	1- Yes; 2- No	---
Q21-1-1	If yes, single or multiple		---
Q21-1-2	Size of fibroids (in millimeters)	1- [0; 2]; 2- [3; 5]; 3- ≥6	---
Q21-1-3	Location: FIGO Classification (Stages)	1- [0]; 2- [1]; 3- [2]; 4- [3]; 5- [4]; 6- [5]; 7- [6]; 8- [7]; 9- [8]; 10- 2 - 5	---
Q21-2	Ovary status: Cysts?	1- Yes; 2- No	---
Q21-4	Tubes visualized?	1- Yes; 2- No	---
Q21-4-1	If yes, hydrosalpinx?	1- Yes; 2- No	---
Q21-4-2	Hematosalpinx?	1- Yes; 2- No	---
Q22	CBC or Hemoglobin level (g/dl)		---
Q23	Outcome		
Q23-1	Favorable outcome	1- Yes; 2- No	---
Q23-1-1	If no, complications?	1- Menorrhagia; 2- Pelvic pain; 3- Anemia; 4- Infertility; 5- Others (specify)	---
Q23-1-2	Recurrences	1- Yes; 2- No	---

Departmental University Hospital of Borgou and Alibori (DUH-B/A); Saint Martin Zone Hospital of Papanè (SMZHP); Evangelical Zone Hospital of Bembèrèkè (EZHB); Saint Jean de Dieu Zone Hospital of Boko (SJZHB); Sounon Sero Zone Hospital of Nikki (SSZHN); Army Training Hospital (ATH) of Parakou.