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Low Back Pain in Pregnant Women: Prevalence and Associated Factors in Two Maternity Hospitals in Conakry (Guinea)

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Abstract

Introduction: Low back pain is the main complaint of musculoskeletal discomfort in pregnant women. The objective was to describe the prevalence and factors associated with the occurrence of low back pain in pregnant women in Conakry (Guinea). **Patients-Methods:** Cross-sectional study from March 1 to August 31, 2023 in the Gynaecology-Obstetrics departments of the Ignace Deen University Hospital and the Ratoma Communal Medical Center (Conakry). Pregnant women suffering from low back pain were included. We did not include pregnant women with a history of low back pain and those who had undergone spinal surgery. **Results:** We collected 708 pregnant women. The mean age of the pregnant women was 30.6 ± 7.3 years (range: 15 years to 51 years). Two hundred and forty-three (34.3%) of them had low back pain. Of the 243 women with low back pain, 38.7% were primigravidas. A statistically significant difference was found between the age groups and the occurrence of low back pain (p-value = 0.0085). According to the intensity of the low back pain, it was moderate in 57 primigravidas and 87 multigravidas. Subacute low back pain was encountered in 35 multigravidas versus 24 primigravidas. The aggravating factor of the pain was postural (51, 37%), while 36.2% of the pregnant women did not describe any aggravating factors. Carrying weight aggravated low back pain in 129 multigravidas and 86 primigravidas. No statistically significant differences were found between gestational age, occurrence of low back pain during previous pregnancies, number of children of the pregnant woman and being primigravida or multigravida. **Conclusion:** Low

back pain, common and occurring mostly in the second trimester of pregnancy, has a gradual onset and ranges from moderate to severe intensity. This frequency calls for systematic research for better management.

Keywords

Low Back Pain, Pregnant Women, Guinea

1. Introduction

Low back pain is the main complaint of musculoskeletal discomfort in pregnant women [1] [2]. The exact cause of low back pain is poorly understood and is often considered multifactorial in nature, associated with biomechanical, vascular, and hormonal changes during pregnancy [3]. The most commonly assessed risk factors are a history of low back pain before pregnancy, a history of low back pain during or after a previous pregnancy, maternal height, weight, and age, and the number of previous pregnancies [4].

Low back pain is common and universal during pregnancy; it is reportedly more common compared to the general population [5]-[7]. It can occur at all stages of pregnancy, but is most common during the second trimester [8]. In sub-Saharan Africa, although some studies have addressed low back pain during pregnancy, few describe the factors associated with the occurrence of low back pain during pregnancy [3] [9]-[11]. The lack of previous data on this subject in Guinea motivated this study, the objective of which was to determine the prevalence and factors associated with pregnancy-related low back pain.

2. Methods

This was a 6-month cross-sectional study (March 1 to August 31, 2023) in the obstetrics and gynaecology departments of the Ignace Deen University Hospital and the municipal medical center located in the municipality of Ratoma. The study concerned all pregnant women who consulted during the study period. We searched in this group pregnant women who suffered from low back pain with or without irradiation, regardless of the cause. The two groups were subsequently compared. We do not have in the study:

- Patients who have had low back pain before any pregnancy
- Patients with a history of spinal trauma or spinal surgery

A two-part survey form was used for data collection, and these data were collected while respecting patient anonymity:

- The first part: included sociodemographic variables (age in years, sex, marital status, educational level, geographical origin relating to the municipality of residence, occupation of the patient), clinical and paraclinical variables (mechanical or inflammatory low back pain, pain intensity, pelvic radicular pain, intermittent claudication, paraesthesia, mobility impairment assessed according to MRC scale,

sensory disorder, duration of symptom development in acute stage (less than one month), subacute (between one and three months) and chronic (more than three months), body mass index; bell sign; Lasègue sign, paravertebral muscle contracture, sphincter disorders, comorbidities.

- The second part included pregnancy-related information: gravidity (which corresponds to the woman's number of confirmed pregnancies), gestational age, and parity (which is the number of deliveries after 20 weeks of amenorrhea). For parity, we classified the women into primipara (a woman carrying her first pregnancy), multipara (a woman who has given birth multiple times), and grand multipara (a woman who has given birth multiple times without spacing out pregnancies). Pre-pregnancy history was sought.

2.1. Data Analysis

Data entered from the KoboCollect application were exported as an Excel file and analyzed using SPSS version 21 software. Results were presented in tables and figures. Proportions were calculated for qualitative variables. Quantitative variables were expressed as medians and means with standard deviations. The Chi-square test was used to determine the correlation between the dependent variable and the various independent variables. The significance threshold was 5%.

2.2. Ethical Considerations

Informed consent was obtained from the patients and the research protocol was accepted by the ethics committee of the Ignace Deen University Hospital in Conakry.

3. Results

We collected 708 pregnant women. The mean age of the pregnant women was 30.6 ± 7.3 years with extremes of 15 years and 51 years. Two hundred and forty-three (34.3%) of them had low back pain. Of the 243 women with low back pain, 38.7% were primigravidas. Eighty-seven (35.8%) pregnant women had a primary education level and 76 (31.2%) were not in school. Low back pain occurred during the first trimester of pregnancy in 29 (36.6%) pregnant women, in the second trimester in 125 (51.4%) and in the last trimester in 89 (36.6%) pregnant women (**Table 1**). The intensity of pain was moderate in 57 (23.4%) primiparas and 87 (35.8%) multiparas. Subacute low back pain was found in 35 (22.6%) multigravidas versus 24 (9.9%) primigravidas. The aggravating factor of the pain was postural in 226 (88.6%) of the pregnant women. Carrying weight aggravated low back pain in 129 multigravidas and in 86 primigravidas (**Table 2**). The factors associated with the occurrence of low back pain in pregnant women were age (p-value = 0.008) and the origin of the pregnant woman (p-value = 0.0008) (**Table 3**). No statistically significant difference was found between gestational age, the occurrence of low back pain during previous pregnancies, the number of children of the pregnant woman and the fact of being primigravida or multigravida (**Table 4**).

Table 1. Distribution of patients according to socio-demographic characteristics of pregnant women.

	Number	Percentage
Prevalence		
Pregnant women	708	100
Pregnant women with low back pain	243	34.3
Gravidity in pregnant women with low back pain		
Primigravida	94	38.7
Multigravida	149	61.3
Age groups in pregnant women with low back pain		
Under 20 years	27	11.1
20 - 29 years	135	55.5
30 - 39 years	69	28.4
40 - 49 years	12	4.9
Over 50 years or older	-	-
Marital status in pregnant women with low back pain		
Single	94	38.6
Married	149	61.3
Divorced	-	
Education level in pregnant women with low back pain		
Primary	87	35.8
Not in school	76	31.2
Tertiary	48	19.7
Secondary	32	13.1
Gestational Age in pregnant women with low back pain		
1st trimester	29	36.6
2nd trimester	125	51.4
3rd trimester	89	11.9

Table 2. Sociodemographic characteristics of pregnant women according to the presence or absence of low back pain.

Characteristics	Low back pain		P-value
	Yes	No	
Age groups			
<20 years	27	9	
20 - 29 years	135	168	
30 - 39 years	69	244	0.0085
40 - 49 years	12	43	
≥50 years	-	1	

Continued

Origin			
Ratoma	51	140	0.0008
Matoto	43	113	
Dixinn	59	77	
Matam	42	81	
Kaloum	48	54	
Marital status			
Single	94	184	0.0313
Married	149	278	
Divorced	-	3	
Education level			
Tertiary	48	103	0.102
Secondary	32	69	
Not in school	76	141	
Primary	87	152	
BMI			
25 - 29.9 (overweight)	51	90	0.753
18.5 - 24.9 (normal weight)	39	52	
>30 (obesity)	3	4	
<18.5 (underweight)	1	3	

Table 3. Clinical characteristics of low back pain in pregnant women according to gestation.

Characteristics	Gravidity		P-value
	Primigravidas	Multigravidas	
Onset mode			
Gradual	66	120	0.315
Abrupt	28	29	
Pain intensity (VAS)			
Moderate pain (4 - 6)	55	87	0.23
Severe pain (7 - 8)	26	-	
Very severe pain (9 - 10)	-	2	
Mild pain (1 - 3)	13	12	
Morning stiffness			
No	76	78	0.09
Yes	18	71	

Continued

Pain rhythm			
On exert	42	79	0.990
Constant	24	16	
Episodic	5	14	
Nocturnal	21	31	
At rest	2	6	
Downward irradiation			
Sciatica S1	42	60	0.804
Sciatica L5	27	22	
Cruralgia L4	18	53	
Cruralgia L3	7	14	
Duration of low back pain			
Subacute	48	59	0.127
Acute	41	35	
Chronic	31	29	
Pain aggravating factors			
Orthostatic posture			
Yes	88	138	0.64
No	6	11	
Load-bearing			
Yes	86	129	0.88
No	8	20	
Sport			
Yes	40	6	1.69
No	54	143	

Table 4. Distribution of pregnant women with low back pain according to gestational characteristics.

	Gravidity		OR	IC	P-value
	Primigravida	Multigravida			
Gestational age					
3rd trimester	67	80	0.83	0.21 - 3.31	0.797
2nd trimester	24	52			
1st trimester	3	17			
Pain during previous pregnancies (n = 149)					
Yes to some	-	82	-	-	0.095
No	-	67			

Continued

How many children are you expecting?					
1	75	132			
2	16	11	0.95	0.22 - 4.06	0.952
Undetermined	3	17			
Total	**94**	**149**			

4. Discussion

We conducted this cross-sectional study on low back pain in pregnant women. We collected information directly from the patients. However, any interpretation of the data should take into account the study's limitations. Our limitations and difficulties were related to the failure to perform certain laboratory and ultrasound assessments due to the precarious financial situation. Despite these limitations, the results of this study made it possible to describe the epidemiological and clinical characteristics of low back pain in pregnant women.

In our study, 708 pregnant women were interviewed, 243 (34.3%) of whom reported having low back pain during their pregnancies. Our results were similar to those of Omoke *et al.* [11] in 2021 in Nigeria, where the prevalence of low back pain was 28.9%. However, our data were lower than those of Manyozo *et al.* [3] in Brazil, where the prevalence of low back pain was 68%. The average age of the respondents was similar to that of Morino *et al.* [12] in Japan (25.8 years), Manyozo *et al.* [3] in Malawi (25.8 years), Hawker *et al.* [13] in South Africa (31 years) and Bryndal *et al.* [14] in Poland (31.8 years). This could be explained by the fact that they are the most active in housework. Housewives were the most affected. This was in agreement with the study of Hawker *et al.* [13] in South Africa. In our study, we have a predominance for a BMI of 25 - 29.9 = overweight, with a percentage of 51.1. This result is comparable to those of Hawker *et al.* [13] in 2021 in South Africa and Duarte *et al.* [5] in 2016 in Brazil who found respectively that 32.4% and 29.00% of women were overweight. The increase in body weight leads to a greater overload of the osteo-musculo-ligamentary structures of the lumbar region, predisposing to the appearance of symptoms in the pre-gestational period. During pregnancy, these symptoms can be aggravated due to an increase even greater of this overload due to the physiological changes in the lumbar region. Indeed, in our country, the work of a housewife requires considerable physical activity such as washing clothes, carrying the bucket by hand, drawing water by hand, cleaning the floor, and carrying the child on the back.

While in developed countries, housework is being replaced by machines like washing machines, vacuum cleaners, etc. The arduous nature of domestic work places a heavy strain on the back. The predominance of married women was similar to that of Carvalho *et al.* in 2016 in Brazil (86.6%) and Duarte *et al.* in Brazil [2] [5] (58.8%), who reported in their study that married women are the most affected. In contrast, Hawker *et al.* [13] in South Africa found that 82% of women

were single. Married status is thought to increase social support with health benefits, and to reduce stress related to social and financial life situations.

The occurrence of low back pain, primarily during the second and third trimesters of pregnancy in this study, was similar to that of most published reports. In the study by Carvalho *et al.* [2], in Brazil, 43.24% of pregnant women reported that low back pain began in the 2nd trimester. Also, Manyozo *et al.* [3] found that women in their second (43%) and third trimesters (49%) were more likely to report low back pain compared to those in the first trimester (8%). This could be explained by the fact that the development of the fetus tends to compress the intra-abdominal organs and the spine. In our study, although the majority of cases were presented during the second trimester, the difference between the trimesters was not significant.

Low back pain was felt at any time without a specific time with moderate to severe intensity and in the majority of patients. These results were different from the data of Omoke *et al.* [11], in which the average pain intensity was mild (30.4%) and moderate (63.0%). They also found that the aggravating factors were mainly orthostatic posture (51.37%) and load carrying (23.9%), intense physical work and postural and intense work (2.9%). For the occurrence of low back pain in the 2nd and 3rd trimester, Wang *et al.* [15] indicated that low back pain mainly occurs during the first 5 to 7 months of pregnancy. Low back pain can be present at any time during pregnancy. The difference could be explained by the fact that the reported pain intensity is a reflection of the subjectivity of pain and sociocultural circumstances. They affect the adaptation and perception of low back pain during pregnancy. The treatment of low back pain in pregnant women in our context is based on psychological support, the use of paracetamol, physiotherapy and maintenance of activities

5. Conclusion

Low back pain, common and occurring mostly in the second trimester of pregnancy, had a gradual onset and was moderate to severe in intensity. Given the prevalence and clinical importance during pregnancy, health workers should be proactive in asking women about their experiences of low back pain in order to provide the necessary clinical care for their pain. These measures will go through the screening of low back pain and provide advice on postural changes, avoiding wearing a burden and a sedentary lifestyle.

Conflicts of Interest

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

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