

Persistence of low back/pelvic girdle pains in women after pregnancy: An experience from Aminu Kano Teaching Hospital, Nigeria

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Abstract

Persistence of symptoms of low back pains and pelvic girdle pains are frequent complaints after pregnancy. Knowledge of back pain prevention and back education is essential for prevention and relief of persistence pains after delivery. The aim is to determine the factors that are associated with persistence of low back/girdle pains after pregnancy, the severity of the pains and measures undertaken by the patients for alleviation of this chronic condition. The study was a cross sectional survey. Ethics approval was obtained from Aminu Kano Teaching Hospital Ethics Committee. Information such as socio demographic characteristics of the clients, persistence and severity of low back pains/pelvic girdle pains after pregnancy and associated risk factors, was asked and documented on a questionnaire. Consecutive, consenting clients were recruited for the survey. Data collected were analyzed using SPSS Version 19. Qualitative data were summarized using frequencies and percentages. χ^2 and Fishers' Exact tests were used, where appropriate, for categorical data. A *P* value of ≤ 0.05 was considered significant. During the period, 51 patients with chronic

back/pelvic girdle pains or both were recruited. Their mean age (\pm SD) was 30.9 \pm 5.62 years. Bed rest was the most means of relief of low back/pelvic girdle pains. Variables such as advancing age, ethnic group, high parity, educational status and obesity were found to be present and high among patients with persistence of low back/pelvic girdle pains. However, only their employment status was found to be associated with the severity of their pains ($\chi^2 = 11.443$, *P*=0.001). The survey showed only employment status was statistically associated with severity of the low back/pelvic girdle pains ($\chi^2 = 11.443$, *P*=0.001). Other variables were not associated. There was low knowledge of back pain prevention and back education among the study group.

Introduction

Low back pain (LBP) and pelvic girdle pain (PGP) are frequent problems affecting pregnant women starting even in the early stages of pregnancy. They are very common problems among black population. A figure of 34.3% and 57.6% of LBP and PGP respectively was reported in North Western Nigeria.¹ Persistence of symptoms of low back pains and pelvic girdle pains are frequent complaints after pregnancy. The incidence of persistent low back pains after pregnancy varied from the disappearance of pain in over 60% within 2 days after delivery,² to as high as 82% having persistent pain at 18 months.³ Women with a combined low back pain and pelvic girdle pain recover to a lower degree (33%) compared with those with only pelvic girdle pain (66%) or low back pain (72%) after delivery.⁴

It has been documented that low endurance of back flexors, older age, combined pain in early and work dissatisfaction are among several predictors of persistent low back pain after pregnancy.⁴ Predictors of poor outcome postpartum are previous low back pain, high pain levels postpartum, high BMI, high maternal age, physically strenuous work situation and low job satisfaction. There is an increased likelihood of poorer health in women with continuous pain postpartum.⁵⁻⁷ Studies on low back pain in the general population show previous reported sick leave and episodes of low back pain are predictors of poor outcome, persistence of symptoms and delayed recovery rate.^{7,8} Other potential risk factors known to influence poor outcome include age, marital status, duration of symptoms, psychological stress, low levels of physical activity, heavy physical work, high BMI and level of education.⁷ In addition, individual coping strategies are considered important contributors to future disability in regards to low back pain and psychosocial factors appear to exacerbate the clinical component of pain.⁹

The most effective non-surgical form of treatment is physiotherapy though a systematic review investigating the effectiveness

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of physiotherapy in women with low back pain is inconclusive.¹⁰ Clinicians need to realize that low back pain may not be transient for some women; instead some will become chronic in nature. Also that pregnant women need to be educated on risk factors, screened early in pregnancy and after childbirth, so as to facilitate early customized treatment or intervention, consequently decreasing the risk of transitioning into chronicity.⁸

This study was aimed at determining the factors that are associated with persistence of low back/girdle pains after pregnancy, the severity of the pains and measures undertaken by the patients for alleviation of this chronic condition among black population.

Table 1. Socio-demographic characteristics of the patients.

| Variable | Frequency | Percent |
|---------------------------|-----------|---------|
| Parity | | |
| Primipara | 16 | 31.4 |
| Multipara | 28 | 54.9 |
| Grandmultipara | 7 | 13.7 |
| Total | 51 | 100.0 |
| Age Group | | |
| 20-24 | 9 | 17.6 |
| 25-29 | 8 | 15.7 |
| 30-34 | 17 | 33.3 |
| 35-39 | 16 | 31.4 |
| 40-44 | 1 | 2.0 |
| Total | 51 | 100.0 |
| Ethnic Group | | |
| Hausa/Fulani | 29 | 56.9 |
| Igbo | 11 | 21.6 |
| Yoruba | 10 | 19.6 |
| Other (Kanuri) | 1 | 2.0 |
| Total | 51 | 100.0 |
| Marital Status | | |
| Single | 3 | 5.9 |
| Married | 48 | 94.1 |
| Total | 51 | 100.0 |
| Marriage Setting | | |
| Monogamy | 42 | 82.3 |
| Polygamy | 9 | 17.7 |
| Total | 51 | 100.0 |
| Order of Marriage | | |
| First Order | 47 | 92.2 |
| Second Order | 4 | 7.8 |
| Total | 51 | 100.0 |
| Religion | | |
| Islam | 32 | 62.8 |
| Christianity | 12 | 23.5 |
| Traditional | 7 | 13.7 |
| Total | 51 | 100.0 |
| Educational Status | | |
| Primary | 4 | 7.8 |
| Secondary | 5 | 9.8 |
| Tertiary | 42 | 82.4 |
| Total | 51 | 100.0 |
| Occupation | | |
| Home Managers | 20 | 39.2 |
| Business | 14 | 27.5 |
| Professional/Executive | 17 | 33.3 |
| Total | 51 | 100.0 |

Materials and Methods

The study was a cross sectional survey that was carried out in the department of obstetrics and gynecology of Aminu Kano Teaching hospital from 1st January to 30th June, 2019. Ethics approval was obtained from Aminu Kano Teaching Hospital Ethics Committee. Participation in the study was voluntary. Information such as socio demographic characteristics of the clients, persistence and severity of low back pains/pelvic girdle pains after pregnancy and associated risk factors, was asked and documented on a pre-tested closed and open-ended questionnaire by trained research assistants. Consecutive, consenting clients were recruited for the survey. Clients below the age of 16 years (difficulty in obtaining assent), were excluded from the study.

Data collected were analyzed using statistical package for the social sciences (SPSS) software package Version 19 (SPSS Inc, IL, Chicago, USA). Qualitative data were summarized using frequencies and percentages. A χ^2 and Fishers' Exact tests were used, where appropriate, for categorical data. A *P* value of ≤ 0.05 was considered significant.

In this survey, chronic low back pain was defined as pain that persists for 12 weeks or longer, even after an initial injury or underlying cause of acute low back pain has been treated.

Results

The survey was carried out from 1st January to 30th June, 2019. During the period, 51 patients with chronic back pain, pelvic girdle pain or both were recruited. Their mean age (\pm SD) was 30.9 \pm 5.62 years. Their median age was 33.0 years. Their age ranged from 20 to 42 years. Their median parity was 2. The average number of weeks after delivery was 4.6 \pm 1.62 with a range of 3 to 13 weeks.

Table 1 shows the socio-demographic characteristics of the patients. Majority of them were multiparous women 28 (54.9%); primipara were 16 (31.4%). Age group of 30-34 years was the majority 17 (33.3%), followed by 35-39 years 16 (31.4%). The least age group was 40-44 years 1 (2.0%). More than half of the patients were Hausa/Fulani 29 (56.9%); the Igbos and Yoruba constituted 11 (21.6%) and 10 (19.6%) respectively. Almost all the patients were married 48 (94.1%), in the first order of marriage 47 (92.2%) and in a monogamous setting 42 (82.3%). More than half

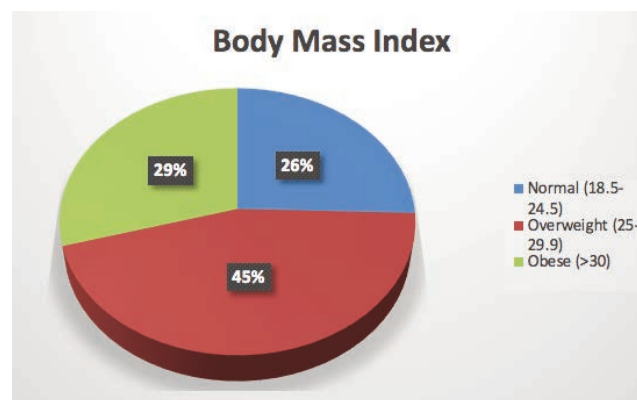


Figure 1. Body Mass Index of the Patients (kg/m²).

of the patients were of Islamic faith 32 (62.8%), the Christians constituted 12 (13.7%).

A significant proportion of the patients attained tertiary level of education 42 (82.4%); those with secondary and primary level of education were 5 (9.8%) and 4 (7.8%) respectively. Only 14 (27.5%) were businesswomen, while 20 (39.2%) and 17 (33.3%) were housewives and professionals/executives respectively.

The mean weight (\pm SD) of the patients was 74.5 \pm 10.36 kg, their mean height (\pm SD) was 164.0 \pm 12.03 cm and their mean age (\pm SD) at first delivery was 27.0 \pm 5.36 years. Their average BMI (body mass index) was 28.0 \pm 5.01 kg/m². Figure 1 depicts the BMI of the patients. All the patients currently presented with both low back pain and pelvic girdle pain following their last pregnancy and delivery. The average age (\pm SD) of their last pregnancy at delivery was 30.6 \pm 5.71 weeks, the average duration of their last labor was 5.4 \pm 3.81 hours and the average weight of their babies was

2.9 \pm 0.55 (Table 2).

Table 2 depicts the symptomatology of low back/pelvic girdle pains. Only 8 (15.7%) patients started experiencing low back/pelvic girdle pains during the first trimester of pregnancy; 20 (39.2%) and 23 (45.1%) started experiencing the pains since from the second and third trimester respectively. More than half of the patients were experiencing low back pains 28 (54.9%) at the time of the interview. Only 17 (33.3%) of the patients were employed, and up to 48 (94.1%) delivered the last pregnancy before term. Spontaneous vaginal delivery was the mode of delivery in most of the patients 32 (62.8%); however, 15 (29.4%) were delivered via Caesarean section. Few of the patients 2 (3.9%) labored for more than 12 hours during vaginal delivery and delivered macrosomic babies respectively.

There was antecedent history of low back pains 21 (41.2%), pelvic girdle pains 3 (5.9%) and both pelvic girdle and low back

Table 2. Symptomatology of low back/pelvic girdle pains.

| Feature | Frequency | Percent |
|---|-----------|---------|
| What trimester of pregnancy you started experiencing low back pain/pelvic girdle pain in your last pregnancy? | | |
| First trimester | 8 | 15.7 |
| Second trimester | 20 | 39.2 |
| Third trimester | 23 | 45.1 |
| Total | 51 | 100.0 |
| Do you presently have low back pain, pelvic girdle pain or both? | | |
| Low back pain | 28 | 54.9 |
| Pelvic girdle | 11 | 21.6 |
| Both | 12 | 23.5 |
| Total | 51 | 100.0 |
| Are you currently employed? | | |
| Yes | 17 | 33.3 |
| No | 34 | 66.7 |
| Total | 51 | 100.0 |
| What was the age of your pregnancy at delivery? | | |
| Term | 3 | 5.9 |
| Preterm | 48 | 94.1 |
| Total | 51 | 100.0 |
| What was the mode of the delivery in your last pregnancy? | | |
| Spontaneous vaginal delivery | 32 | 62.8 |
| Assisted vaginal delivery | 4 | 7.8 |
| Caesarean section | 15 | 29.4 |
| Total | 51 | 100.0 |
| What was the duration of your last labour? | | |
| <12 hours | 49 | 96.1 |
| >12 hours | 2 | 3.9 |
| Total | 51 | 100.0 |
| What was the weight of your last baby? | | |
| Normal (<4 Kg) | 49 | 96.1 |
| Macrosomia (\geq 4 Kg) | 2 | 3.9 |
| Total | 51 | 100.0 |
| Did you experience low back pain, pelvic girdle pain or both during menses? | | |
| Low back pains | 21 | 41.2 |
| Pelvic girdle pains | 3 | 5.9 |
| Both | 27 | 52.9 |
| Total | 51 | 100.0 |
| Did you have trauma during pregnancy? | | |
| Yes | 29 | 56.9 |
| No | 22 | 43.2 |
| Total | 51 | 100.0 |
| Are you engaged in strenuous exercise in your working condition? | | |
| Yes | 26 | 51.0 |
| No | 25 | 49.0 |
| Total | 51 | 100.0 |

pains among the patients during menses. So also, 29 (56.9%) of the patients admitted having trauma during pregnancy. Similarly, 26 (51.0%) admitted having strenuous exercise at their working place.

Table 3 shows the nature of the pains experienced by these patients. The pain was described as burning 23 (45.1%), dull 21 (41.1%), and piercing 6 (11.8%) by most of the patients. It radiates in about half of the patients 24 (47.1%), with numbness 47 (92.2%). Many of the patients with low back/pelvic girdle pains 42

(82.4%) used to taking medication. It also prevented them from normal duties 26 (51.0%), and in some, the pain was severe enough to warrant hospitalization 28 (54.9%). Some mention family history of low back/pelvic girdle pains 19 (37.3%).

Table 4 reveals the relationship between low back pain to work and back education. Only 20 (39.2%) of the patients thought their pain was related to the kind of activities they do at work. They admitted that their work within the last two years involves sitting

Table 3. Nature of the pains.

| Feature | Frequency | Percent |
|--|-----------|---------|
| How can you describe the nature of your pain? | | |
| Burning | 23 | 45.1 |
| Piercing | 6 | 11.8 |
| Dull | 21 | 41.1 |
| Gripping | 1 | 2.0 |
| Total* | 59 | 100.0 |
| Does your pain radiate? | | |
| Yes | 24 | 47.1 |
| No | 27 | 52.9 |
| Total | 51 | 100.0 |
| Have you ever had numbness or weakness on the lower limbs during any episode of back pain? | | |
| Yes | 47 | 92.2 |
| No | 4 | 7.8 |
| Total | 51 | 100.0 |
| Have you taken any medication for pain? | | |
| Yes | 42 | 82.4 |
| No | 9 | 17.6 |
| Total | 51 | 100.0 |
| Has your pain ever prevented you from carrying out your normal duties? | | |
| Yes | 26 | 51.0 |
| No | 25 | 49.0 |
| Total | 51 | 100.0 |
| Have you ever been hospitalized for the pain due to its severity? | | |
| Yes | 28 | 54.9 |
| No | 23 | 45.1 |
| Total | 51 | 100.0 |
| Do you have family history of back pain? | | |
| Yes | 19 | 37.3 |
| No | 32 | 62.7 |
| Total | 51 | 100.0 |
| Do you think your pain is related to kind of activities you do at work? | | |
| Yes | 20 | 39.2 |
| No | 31 | 60.8 |
| Total | 51 | 100.0 |
| Does your work within the last two years involves any of the following? | | |
| Sitting for more than two hours at a stretch | 23 | 45.1 |
| Standing more than two hours at a stretch | 24 | 47.1 |
| Lifting of heavy objects | 4 | 7.8 |
| Total | 51 | 100.0 |
| Do you think low back pain is preventable? | | |
| Yes | 19 | 37.3 |
| No | 23 | 45.1 |
| I don't know | 9 | 17.6 |
| Total | 51 | 100.0 |
| Have you had any lectures or educational talk on how to prevent low back pain? | | |
| Yes | 18 | 35.3 |
| No | 33 | 65.7 |
| Total | 51 | 100.0 |
| Have you had any lectures on how best to sit or stand in to prevent low back pain? | | |
| Yes | 19 | 37.3 |
| No | 32 | 62.8 |
| Total | 51 | 100.0 |

*Response not mutually exclusive.

for more than two hours at a stretch, standing for more than two hours at a stretch and lifting of heavy objects in 23 (45.1%), 24 (47.1%) and 4 (7.8%) respectively. Only 19 (37.3%) thought low back pain was preventable and 18 (35.3%) had any lectures or educational talk on how to prevent low back pains. Surprisingly, 19 (37.3%) had any lectures on how best to sit or stand to prevent low back pain. Figure 2 shows where the pain radiates. In most of the cases, it radiated to the feet, followed by legs, upper back and thigh. Figure 3 shows the means of relief for low back pains among the patients. Bed rest was the most followed by medication and physiotherapy. Figure 1 depicts the body mass index (BMI) of the patients. Only 26% had normal BMI; 45% were overweight while 29% were obese. There was no statistically significant association between severity of the pains (evidenced by hospital admission) and their age groups (P (Fischer's=) 0.723), parity (P (Fischer's=) 1.000), ethnicity (P (Fischer's=) 0.297), marital status (P (Fischer's=) 0.242), marriage setting (P (Fischer's=) 0.487), order of marriage (P (Fischer's=) 0.617), religion (P (Fischer's=) 1.000), educational status (P (Fischer's=) 0.561) or occupation ($\chi^2 = 4.806$, $P = 0.101$). Also, there was no statistically significant association between the severity of the pains and their BMI ($\chi^2 = 6.122$, $P = 0.056$) or the trimester of pregnancy pain started (P (Fischer's=) 0.932). However, there was statistically significant association between their employment status and the severity of their pains ($\chi^2 = 11.443$, $P = 0.001$). The employed were more likely to have hospital admission due to severity of the pains. Similarly, there was no statistically significant association between the severity of the pains and the gestational age at delivery (P (Fischer's=) 1.000), the mode of delivery (P (Fischer's=) 0.556), the duration of the last delivery (P (Fischer's=) 1.000), the weight of the baby in their last delivery (P (Fischer's=) 1.000), antecedent history of trauma (P (Fischer's=) 0.581) or engagement in strenuous exercise ($\chi^2 = 2.354$, $P = 0.164$).

Family history of low back pains was also not associated with the severity of the pains ($\chi^2 = 0.834$, $P = 0.398$) (Table 5).

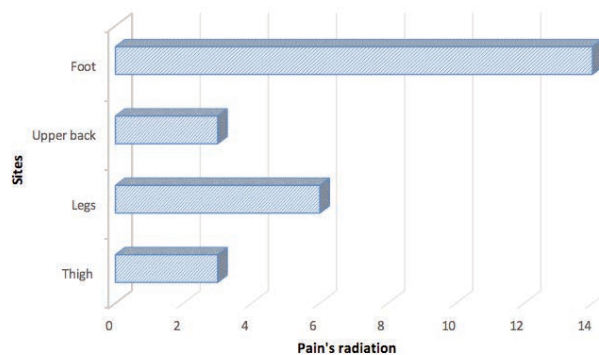


Figure 2. Sites of Pain's Radiation.

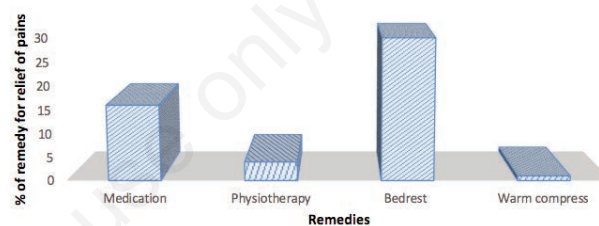


Figure 3. Remedy for Relief of Low Back/Pelvic Girdle Pains

Table 4. Cross-tabulation between the severity of the pains (evidenced by hospital admission) and their employment status.

| Employment status | | Have you ever been hospitalized due to the severity of the pains? | | Total |
|-------------------|------------|---|------|-------|
| | | Yes | No | |
| Employed | Count | 15 | 2 | 17 |
| | % of Total | 29.4 | 3.9 | 33.3 |
| Unemployed | Count | 13 | 21 | 34 |
| | % of Total | 25.5 | 41.2 | 66.7 |
| Total | Count | 28 | 23 | 51 |
| | % of Total | 54.9 | 45.1 | 100.0 |

$\chi^2 = 11.443$, $P = 0.001$

Table 5. Cross-tabulation between the severity of the pains (evidenced by hospital admission) and family history of low back pains.

| Employment status | | Have you ever been hospitalized due to the severity of the pains? | | Total |
|-------------------|------------|---|------|-------|
| | | Yes | No | |
| Yes | Count | 12 | 7 | 19 |
| | % of Total | 23.5 | 13.7 | 37.3 |
| No | Count | 16 | 16 | 32 |
| | % of Total | 31.4 | 31.4 | 62.7 |
| Total | Count | 28 | 23 | 51 |
| | % of Total | 54.9 | 45.1 | 100.0 |

$\chi^2 = 0.834$, $P = 0.398$

Discussion

The mean age of patient with persistent back/pelvic girdle pains after pregnancy was 27.5 ± 5.35 , this was similar to what was obtained by other studies (25-31 yrs).^{4,11-14} The mean BMI of our study group was $28.0 \pm 5.36 \text{ Kg/m}^2$. This is slightly higher than what was obtained in similar studies.¹¹⁻¹³ This may be connected to the cultural preference to Overweight or high rate of multiparity, in most African society.

Back pain in most of our patients started from the second and third trimester. This is consistent with what has been reported in most literature.^{11,15} This has been attributed to the weight gain and hormonal changes that affect the ligaments of the back and pelvis that occur in the latter half of pregnancy.¹⁶

From our study, there was no significant evidence that CS increase the risk of post-partum Back pain. Other researchers had also reported similar conclusions.^{11,17} However; Mukkannavar *et al.*¹² reported a high prevalence of post-partum back pain.

We also noted that previous history of trauma and vigorous exercise during pregnancy is a significant cause of admission during pregnancy.

Up to 47.1% of patient described their pain as radiating and most of them (92.2%) have numbness or weakness. This is significantly higher than what was obtained by To and Wong¹¹ and what the authors obtained in a similar topic among pregnant women.¹ This was because the study population was only those with persistence of low back pain in this study. A significant number of patients (51%) had their activities interfered with, by back/pelvic girdle pains and some had to be hospitalized. (51% and 54%). This is higher than the findings in other studies.^{1,8} About 39.2% of the respondent believed that their back pain is related to their activities. This is slightly lower than what was obtained among non-pregnant patient in studies done in Nigeria.^{18,19} There is a high correlation of back pain with activities like bending, lifting and prolonged standing.¹⁸⁻²¹

The result indicated that there is generally low knowledge of back pain prevention and back education (37.3% and 35.3% respectively). Knowledge of prevention of low back pains during pregnancy and postpartum include back and aerobic exercises, back education, mechanical support (corset), ergonomic interventions at workplace, and risk factor modifications (smoking cessation, weight loss etc).^{22,23} There was no statistically significant association between severity of the pains with most demographic feature like, Age, ethnicity, marital status, marriage setting, religion, parity and occupation ($P < 0.05$).

Also, there was no statistically significant association between the severity of the pains and BMI ($p < 0.05$). A similar finding has been reported by some workers,^{1,7} while some workers reported the contrary.²⁴ There was also no significant association between the severity of the back pain with the trimester of pregnancy that the pain started (P (Fischer's) = 0.932). There was statistically significant association between employment status and the severity of the pains ($\chi^2 = 11.443$, $P = 0.001$). Those employed are more likely to have hospital admission due to severity of the pains. This may be connected to the sick role in the employed patients. Some perinatal demographic characteristics did not show significant role in pain severity. These are: gestational age at delivery, mode of delivery the duration of the last delivery, the weight of the baby in the last delivery. In our survey, antecedent history of trauma and engagement in strenuous exercise were not associated with severity of pain. Family history of low back pains was also not associated with the severity of the pains.

Limitations

It was a cross sectional survey. The researcher did not determine the incidence of persistence low back pain after pregnancy.

Conclusions

The survey showed that several factors such as increasing age, high parity and obesity that were found in patients with persistence of low back/pelvic girdle pains were not statistically associated with the severity of low back/pelvic girdle pains after delivery. However, employment status was statistically associated with severity of the pains ($\chi^2 = 11.443$, $P = 0.001$).

The result indicated that there is generally low knowledge of back pain prevention and back education (37.3% and 35.3% respectively). Concerning the means of relief for low back/pelvic girdle pains; bed rest was the most followed by medication and physiotherapy.

Recommendations

Knowledge of back pain prevention and back education should be incorporated into the routine health education given to women during antenatal care clinic and during postpartum visits. Further studies are required to determine the natural history of this pathology.

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