Abstract

Background: The profound physiologic effects of pregnancy affect the musculoskeletal system. Pregnant women are at increased risks of low back/pelvic girdle pains. **Objective:** To determine the incidence of low back/pelvic girdle pains among pregnant women.

**Materials and Methods:** This was a cross-sectional study conducted from May 1 to June 30, 2016, among consenting pregnant women at Aminu Kano Teaching Hospital. Ethical approval was obtained from the Hospital Ethics Committee. Information was obtained in a questionnaire on consecutive pregnant women. Data obtained were analyzed using SPSS version 18 (SPSS Inc., Chicago, Illinois, USA, 2012). Fisher’s exact test was used for categorical data, and $P \leq 0.05$ was considered statistically significant. **Results:** A total of 309 pregnant women were recruited from May 1 to June 30, 2016. The mean age ± standard deviation was 28.4 ± 5.86 years. The incidence of low back pains (LBPs) and pelvic girdle pains among the pregnant women was 106 (34.3%) and 178 (57.6%), respectively. The pain was severe among 26 (9.2%) pregnant women, which warranted analgesic usage. Pain radiation was reported in >50% of cases. There was an incidental finding of urinary incontinence in 36 (12.6%) cases. Low back/pelvic girdle pain was not associated with body mass index (BMI) ($P = 0.390$).

**Conclusion:** The incidence of LBPs and pelvic girdle pains was high and found to be 34.3% and 57.6%, respectively. Analgesics were used especially among those with severe pains. There was an incidental finding of urinary incontinence among pregnant women with complaints of low back/pelvic girdle pains. There was no statistically significant association between LBPs and maternal BMI.

**Keywords:** Low back/pelvic girdle pains, Nigeria, pregnant women

Résumé

Contexte: Les profonds effets physiologiques de la grossesse sur l’appareil locomoteur. Les femmes enceintes sont plus à risques de retour faible/ceinture pelvienne douleurs. Objectif : déterminer l’incidence des faibles douleurs dos/ceinture pelvienne chez les femmes enceintes. **Matériels et Méthodes:** Il s’agissait d’une étude transversale menée du 1er mai au 30 juin 2016, chez les femmes enceintes à consentants Aminu Kano Hôpital d’enseignement. L’approbation éthique a été obtenu à partir de l’hôpital Comité d’éthique. L’information a été obtenue dans un questionnaire sur les femmes enceintes. Les données obtenues ont été analysées à l’aide de SPSS version 18 (SPSS Inc., Chicago, Illinois, USA, 2012). Le test exact de Fisher a été utilisé pour les données catégoriques, et $P \leq 0.05$ était considéré comme statistiquement significatif. **Résultats:** Un total de 309 femmes enceintes ont été recrutés à partir du 1er mai au 30 juin 2016. L’âge moyen ± écart-type était de 28,4 ± 5,86 ans. L’incidence des maux de dos faible (PSL) et douleurs de la ceinture pelvienne chez les femmes enceintes était de 106 (34,3%) et 178 (57,6%), respectivement. La douleur est sévère chez 26 (9,2%) femmes enceintes, ce qui justifie l’utilisation d’analgésique. Le rayonnement de la douleur a été rapportée dans plus de 50% des cas. Il y avait une prise trouvé d’incontinence urinaire dans 36 cas (12,6%), respectivement. Bas dos/ceinture pelvienne douleur n’était pas associée à l’indice de masse corporelle (IMC) ($P = 0.390$). **Conclusion:** L’incidence des PSL et douleurs de la ceinture pelvienne était élevée et trouvé 34,3% et 57,6%, respectivement. Analgésiques ont été utilisés en particulier chez les personnes souffrant de douleurs. Il y avait une prise trouvé d’incontinence urinaire chez les femmes enceintes avec les plaintes de low back/ceinture pelvienne douleurs. Il n’y avait pas de différence statistiquement importante entre les PSL et l’IMC maternelle.

Mots-clés: Bas dos/ceinture pelvienne douleurs, le Nigeria, les femmes enceintes

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INTRODUCTION

Pregnancy has profound physiologic effects on a woman’s body, affecting not only the cardiovascular, endocrine, and renal systems, but also the musculoskeletal system, specifically the axial skeleton. Distinct hormonal changes accompanied by an increase in body mass and the presence of the gravid uterus cause a shift of the center of gravity, thereby exerting additional static and dynamic loads on the axial skeleton.[1,2] Soon a woman realizes that her body is undergoing turmoil of events, and then the “aches” and the “pains” associated with pregnancy begin. Majority of the pregnant women do not seek medical help until the discomforts actually start interfering with their activities of daily living. Majority of these discomforts can be directly related to the physical changes that take place during pregnancy and their resultant biomechanical effects upon functional movement.[3] Back pain is not a diagnosis, but a symptom that can follow a variety of medical, musculoskeletal, and neurological conditions. Back pain is considered to be a symptom of variety of changes and disorders affecting the lumbar spine, the sacrococcyx and pelvis, but it may also be a symptom of disorders affecting the neighboring organs.[4]

The prevalence of LBP varies worldwide. The prevalence of LBP during pregnancy ranges from 20% to 90%; most studies report prevalence of >50%.1,4-7

Locally, there is no literature on pregnancy and low back pain (LBP), and hence the justification for this study.

MATERIALS AND METHODS

This was a cross-sectional study conducted from May 1 to June 30, 2016, among consenting pregnant women at Aminu Kano Teaching Hospital. Ethical approval was obtained from the Hospital Ethical Committee. Questionnaire was structured and pretested comprising close and opened ended questions. Information on sociodemographic characteristics, trimesters of pregnancy, low back/pelvic girdle pain, its severity, motor power affectation, and sensory and sphincter involvements were obtained. Administration of the questionnaire was carried out by a trained research assistant on the consecutive pregnant women attending antenatal care at the antenatal clinic of Aminu Kano Teaching Hospital. Informed consent was obtained from the participants before the recruitment. Pregnant women below the age of 18 years were excluded from the study (difficulty obtaining assent).

Data obtained were analyzed using the Statistical Packages for Social Sciences version 18 (SPSS Inc., Chicago, Illinois, USA, 2012). Qualitative data were summarized using frequencies and percentages. Fisher’s exact test was used for categorical data, and $P \leq 0.05$ was considered statistically significant.

RESULTS

A total of 309 pregnant women were recruited during the study (May 1 to June 30, 2016). The mean age ± standard deviation (SD) was 28.4 ± 5.86 years. The median and modal ages were 28 and 32 years, respectively. The age range was from 17 to 47 years.

Majority of the respondents (90, 29.1%) were within the age group of 17–24 years. Age groups of 25–29 years in 84 (27.2%) respondents and 45–49 years in 4 (1.3%) were the second and the least represented, respectively.

Hausa–Fulani was the major ethnic group (216, 69.0%). The Yoruba was the least represented (22, 7.1%) among the major ethnic groups [Table 1].

A whopping (299, 96.8%) pregnant women were married. The single constituted only 9 (2.9%).

| Table 1: Sociodemographic characteristics of the respondents |
|---------------------------------------------------------------|
| **Variable** | **Frequency (%)** |
| Age group (years) | |
| 17-24 | 90 (29.1) |
| 25-29 | 84 (27.2) |
| 30-34 | 82 (26.5) |
| 35-39 | 43 (13.9) |
| 40-44 | 6 (1.9) |
| 45-49 | 4 (1.3) |
| Total | 309 (100.0) |
| Ethnic group | |
| Hausa/Fulani | 216 (69.9) |
| Igbo | 30 (9.7) |
| Yoruba | 22 (7.1) |
| Others | 41 (13.3) |
| Total | 309 (100.0) |
| Marital status | |
| Single | 9 (2.9) |
| Married | 299 (96.8) |
| Divorced | 1 (0.3) |
| Total | 309 (100.0) |
| Religion | |
| Islam | 249 (79.6) |
| Christianity | 55 (17.8) |
| Traditional | 7 (2.3) |
| Others | 1 (0.3) |
| Total | 309 (100.0) |
| Educational status | |
| None | 5 (1.6) |
| Primary | 13 (4.2) |
| Secondary | 107 (34.6) |
| Tertiary | 166 (53.7) |
| Qur’anic/Islamiyya | 18 (5.8) |
| Total | 309 (100.0) |
| Occupation | |
| Home manager | 188 (60.8) |
| Business | 31 (10.0) |
| Professional/executives | 58 (18.8) |
| Artisan | 5 (1.6) |
| Student | 21 (6.8) |
| Others | 6 (1.9) |
| Total | 309 (100.0) |
Majority of the respondents (249, 79.6%) were of Islamic faith. Christians were up to 55 (17.8%).

Most of the respondents (166, 53.7%) attended tertiary institutions as their highest level of education. Those at secondary levels of educational qualification were 107 (34.6%).

A whopping figure of 188 (60.8%) among the pregnant women were home managers. The professional/executive constituted 58 (18.8%).

The incidence of LBPs and pelvic girdle pains among the pregnant women were 106 (34.3%) and 178 (57.6%), respectively [Table 2].

| Variable | Frequency (%) |
|----------|---------------|
| Types of pain |                 |
| Low back pain | 106 (34.3) |
| Pelvic girdle pain | 178 (57.6) |
| None of the two above | 25 (8.1) |
| Total | 309 (100.0) |
| Pain severity |                 |
| Mild | 52 (18.3) |
| Moderate | 206 (72.5) |
| Severe | 26 (9.2) |
| Total | 284 (100.0) |
| Relieving factors |                 |
| Analgesic not required | 148 (52.1) |
| Analgesic required | 127 (44.7) |
| Analgesic + bed rest | 5 (1.8) |
| Analgesic, bed rest + physical therapy | 4 (1.4) |
| Total | 284 (100.0) |
| Radiation of pain |                 |
| Limited to the back | 133 (46.8) |
| Radiates to the gluteal region | 121 (42.6) |
| Radiates to one lower limb | 11 (3.9) |
| Radiates to both lower limb | 19 (6.7) |
| Total | 284 (100.0) |
| Motor power affectation |                 |
| No lower limb weakness | 85 (29.9) |
| Weak lower limb but able to walk | 184 (64.8) |
| Weak lower limb, unable to walk | 15 (5.3) |
| Total | 284 (100.0) |
| Sensory involvement |                 |
| No abnormal sensation | 167 (58.8) |
| Abnormal sensation | 104 (36.6) |
| No sensation | 13 (4.6) |
| Total | 284 (100.0) |
| Sphincter involvement |                 |
| Continence intact | 243 (85.6) |
| Urinary incontinence only | 36 (12.6) |
| Fecal incontinence only | 3 (1.1) |
| Both urinary and fecal incontinence | 2 (0.7) |
| Total | 284 (100.0) |

Up to 206 (72.5%) of the respondents reported moderate pain of either low back or pelvic girdle but was severe in about 26 (9.2%).

An alarming figure of 148 (52.1%) of the respondents did not require analgesics for the pains. However, in 127 (44.7%) respondents, analgesics were required. A smaller proportion required analgesics, bed rest, and physiotherapy for the pains.

The pain was limited to the back in 133 (46.8%); however, 121 (42.6%), 11 (3.9%), and 19 (6.7%) reported pain radiation to the gluteal region, one lower limb, and both lower limbs, respectively.

There was no lower limb weakness in 85 (29.9%), weak lower limb but able to work in 184 (64.8%), abnormal sensation in 104 (36.6%), and loss of sensation in 13 (4.6%) of the respondents.

Both fecal and urinary continence was intact in 243 (85.6%) while 36 (12.6%) of the respondents had urinary incontinence.

A staggering (150, 49.0%) presented with normal body mass index (BMI) while 85 (28.0%) and 64 (21.0%) were underweight and overweight, respectively [Figure 1].

The mean parity ± SD was 2.5 ± 2.41. The parity range was from 0 to 11. The average number of living children was 2.02 ± 2.044.

Up to 14 (4.5%) of the pregnant women were in the first trimester, while 192 (62.1%) and 103 (33.3%) were in second and third trimesters, respectively [Figure 2].

Low back/pelvic girdle pain was not statistically associated with age group (P = 0.691), trimester of pregnancy (P = 0.169) or BMI (P = 0.390).

**Discussion**

The incidence of low back and pelvic girdle pains were found to be 34.3% and 57.6%, respectively. Kovacs et al.[9] reported prevalence of LBPs and pelvic girdle pains of 71.3% and 64.7% among Spanish pregnant women, respectively. A study conducted in New Delhi, India, on prevalence of pregnancy-related pelvic girdle pain among primigravidae reported prevalence of 60.3% and 29.9% of LBPs and pelvic girdle pains, respectively.[9] Our figures are lower than the former and invariably proportional to the latter. Racial difference could be responsible for the disparity.

The pain experienced by the respondent in this study was mild/moderate using the visual analog scale in majority of the respondents (72.5%) while only 9.2% experience severe pains. This is consistent with the findings of Nwugba[3] where they found only 10.1% of their study population with severe pains and 81.3% with mild to moderate consistency.

The pain severity correlates with the need for treatment. Up to 52.1% of the pregnant women required no special treatment like analgesics. About 44.7% required analgesia...
mainly paracetamol and rarely diclofenac. Only 1.4% required a combination of treatment involving analgesics, bed rest, and or physical therapy. A research finding showed that only about a half of all women suffering from pregnancy-related LBP will ultimately seek medical advice from health-care professionals and 70% of them will further receive some kind of treatment.[10] Other treatment options, apart from pharmacological and physiotherapy, include stabilization belts, acupuncture, relaxation, massage, yoga, and nerve stimulation. Weight reduction within puerperium may assist in preventing the risk and severity of LBPs.[11]

In about 46.8%, the pain was limited to the back but in 42.6%, 3.9%, and 6.7%, the pain was reported to radiate to the gluteal region, one lower limb and both lower limbs. A study conducted in Maiduguri, Northeastern Nigeria, on LBPs among pregnant women reported that up to 56.2% of the pregnant women had LBPs with no radiation but 33.3% and 10.5% reported pain radiation to the thigh and down to the calf muscles, respectively.[12] Our findings were almost similar. A study carried out by Orvieto et al.[13] showed that in pregnant women with LBPs, there was a statistically significant correlation between pain radiation and fetal weight. We did not estimate fetal weight in our research but we found no statistically significant association between LBPs and maternal BMI.

Both fecal and urinary continence was intact in 85.6% of the pregnant women, but 12.6% of the respondents had urinary incontinence. Other researchers[14-16] reported association between LBP/pelvic girdle pain and urinary incontinence among women, either pregnant or outside pregnancy. With the alarming high incidence of LBPs (34.3%) and pelvic girdle pains (57.6%) in this study, there is a need for a further study on postpartum low back and pelvic girdle pain for evaluation whether these pains resolve or become permanent. This will enable us to really define whether LBPs and pelvic girdle pains are like other pregnancy symptoms that will certainly abate with or without medications after puerperium.

**Conclusion**

The incidence of LBPs and pelvic girdle pains was found to be 34.3% and 57.6%, respectively. The pain was mild in most of the respondents but severe among 9.2% which warranted the use of analgesics, bed rest, and physiotherapy. There was an incidental finding of urinary incontinence among pregnant women with complaints of low back/pelvic girdle pains. There was no statistically significant association between LBPs and maternal BMI.

We recommend multidisciplinary approach involving the physiotherapist in the management, especially of those with severe low back/pelvic girdle pains.

**Limitation**

This is questionnaire-based study.

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Nil.

**Conflicts of interest**

There are no conflicts of interest.

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