International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Abdul-Samed F et al. Int J Reprod Contracept Obstet Gynecol. 2026 Feb;15(2):509-514
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20260170

Original Research Article

Prevalence of pregnancy-related low back and pelvic girdle pain among women under antenatal care: insights from an Accra metropolitan survey

Fridaus Abdul-Samed[1]*, Ajediran I. Bello[1], Kwame Adu-Bonsaffoh[2], Beatrice E. A. Sankah[3]

[1]Department of Physiotherapy, School of Biomedical and Allied Health Sciences, College of Health Sciences, University of Ghana, Korle-Bu, Accra, Ghana
[2]Department of Obstetrics and Gynaecology, School of Medicine and Surgery, College of Health Sciences, University of Ghana, Korle-Bu, Accra, Ghana
[3]Department of Sports and Exercise Science, School of Allied Health Sciences, University of Cape Coast, Cape Coast, Ghana

Received: 17 December 2025
Revised: 18 January 2026
Accepted: 19 January 2026

***Correspondence:**
Fridaus Abdul-Samed,
E-mail: Fasamed@ug.edu.gh

ABSTRACT

Background: Pregnancy-related low back pain (LBP) and pelvic girdle pain (PGP) are common health issues with a high global prevalence. Despite its appalling morbidity, there is no discernible epidemiological data on the population in the context of Ghana. Thus, this study aimed to determine the prevalence of pregnancy-related LBP and PGP during antenatal care within the Accra Metropolis of Ghana.
Methods: Pregnant women attending the antenatal clinics of three selected hospitals within the Metropolis were enrolled in the cross-sectional survey using a non-probability proportional quota sampling method. A data-capturing form, the numeric pain rating scale (NPRS), and the Oswestry disability index were incorporated into the Kobo Toolbox software and administered electronically.
Results: The mean age of the 574 respondents was 28.5 (SD: ±5.68), and the respective prevalence of LBP and PGP were 51.4% (n=295) and 49.3% (n=283). Also, 62.0% (183) and 51.6% (146) of those with LBP and PGP rated their pain as moderate, respectively, on the NPRS. Generally, 153 (62.5%) rated their disability as moderate. Gestational age was strongly associated with the occurrence of LBP (χ^2=36.7, df=2, p<0.001) and PGP (χ^2=30.6, df=2, p<0.001). Pregnant women in their third trimester have higher odds of experiencing LBP (OR=3.84, p<0.001) and PGP (OR=3.6, p<0.001).
Conclusions: The survey findings indicate a high prevalence of pregnancy-related LBP and PGP, which tends to be strongly associated with gestational age. Thus, healthcare providers should remain vigilant about these disorders during the later stages of pregnancy

Keywords: Low back pain, Pelvic girdle pain, Prevalence, Pregnancy, Antenatal care

INTRODUCTION

Pregnancy is a transformative physiological process that brings about significant changes in a woman's body, thus leading to discomfort and pain. Globally, low back pain (LBP) and pelvic girdle pain (PGP) have been reported to affect a substantial proportion of pregnant women during the gestational period. The global prevalence of LBP during pregnancy is reported to be 40.5% in a systematic review.[1] Similarly, following a systematic review of cross-sectional studies, a pooled prevalence of 63% was reported for lumbopelvic pain in pregnant women.[2] In Africa, the

prevalence of pregnancy-related LBP was 62% in urban Blantyre, Malawi and 28.9% in Abakaliki, Nigeria.[3,4] Likewise, the prevalence of PGP in pregnancy was 24.3% in Ethiopia and 57.6% in Kano, Nigeria.[5,6] A prevalence rate of 46% of lumbopelvic pain was reported among pregnant women in Kawempe, Uganda.[7]

The prevalence of pregnancy-induced LBP and PGP has been attributed to various risk factors including advanced maternal age, history of back pain during previous pregnancy, increased parity, high body mass index, and the history of joint hypermobility.[8-14] Although LBP and PGP are considered normal physiological adaptations to pregnancy, their impact on maternal well-being cannot be underestimated. Beyond the physical discomfort, LBP and PGP could also have significant psychosocial ramifications, thereby resulting in increased stress, anxiety, and depression among expectant mothers.[9,15] Moreover, persistent pain during pregnancy has been linked to adverse birth outcomes, including prolonged labour and increased risk of caesarean delivery.[16] Furthermore, these two disorders vary from mild discomfort to severe debilitation, substantially affecting daily activities, mobility, and overall quality of life for pregnant women.[17,18]

Despite the high global prevalence of LBP and PGP in pregnant women, a context-specific estimation of the prevalence is important, considering the peculiarity of each environment regarding accessibility to health care and comprehensiveness of the available health care services. These factors may influence the health status of any given local population. The study, therefore, aimed to determine the prevalence and predisposing factors of LBP and PGP among pregnant women in Accra, Ghana.

METHODS

Study setting

The study was conducted between the 05 of June and the 17 of October, 2025, at the antenatal clinics of Korle-Bu Teaching Hospital, Mamprobi Government Hospital, and the Ussher Government Hospital. The three health facilities were selected on account of their high patronage of pregnant women for antenatal care.

Participants

Pregnant women attending antenatal clinics at the three hospitals were involved in the cross-sectional study. They were considered eligible for inclusion if they had registered with the antenatal clinics of the study sites and were able to comprehend instructions and consent to participate in the study.

Those declared by the resident obstetrician as having high-risk pregnancies, such as risk of miscarriage, were excluded from the study.

Sample size and sampling methods

A sample size of 574 was estimated using the Cochran formula given, with an estimated LBP prevalence of 53.9%, and a precision level of 5% within a 95% confidence interval (Z=1.96).[10]

$$n = (Z^2 \times P \times (1 - P))/d^2$$

Using consecutive sampling, a proportional quota was obtained from each facility. The ratio of the number of patients in each facility to the total number of patients in all the facilities was multiplied by the estimated study sample.

Data collection procedure

The study was reviewed and approved by the Ethics Protocol Review Committee (EPRC) of the College of Health Sciences, University of Ghana (CHS-Et/M.8 – P 5.9/2024-2025). Permission to conduct the study at the selected study sites was granted by the Regional Health Directorate of the Ghana Health Service and the Research and Ethics Committee of the Korle-Bu Teaching Hospital (KBTH-STC/IRB/000104/2025). To ensure privacy and confidentiality, codes were assigned to the copies of the questionnaire in place of participants' names. An impartial witness was invited to consent for participants who could not read or write. Research assistants were trained on the study protocol and all relevant ethical requirements. A researcher-administered questionnaire was used to collect data from pregnant women at the antenatal clinics following their consent through thumb printing or signatures. A data-capturing form was used to collect data. Section A of the form borders on sociodemographic characteristics such as participants' age, marital status, occupation, education, gestational age, and gravidity. Section B entails data on respondents' experience with LBP and/or PGP, including the Numeric Pain Rating Scale used to rate the intensity of their pain, and the Oswestry Low Back Pain Disability Questionnaire, which was used to collect data on their daily functional ability. The integrated data-capturing form was incorporated into the Kobo Toolbox software and administered electronically using tablets. Data collection started on 05 June 2025, and ended on 17 October 2025. However, the entire study period spanned March 2024 to November 2025.

Data analysis

Data were analyzed using Jamovi version 2.6.44. Descriptive statistics were summarized with frequencies and percentages. The Chi-square test was used to determine the associations between socio-demographic variables and LBP or PGP. Also, a binary logistic regression model was employed to identify the predictive model for LBP and PGP prevalence using the selected covariates such as maternal age, marital status, educational level, gravidity, and gestational age.

Odds ratios (OR) were obtained to quantify the probability of developing LBP during pregnancy. A statistical significance threshold was established at $p<0.05$ for all the inferential analyses. All 574 participants' responses were retrieved from the Kobo Tools database for analysis.

RESULTS

Socio-demographic characteristics of study participants

Respondent ages ranged from 14 to 45, with a mean of 28.5±5.68. Of the 574 respondents, 567 (98.8%) had received formal education at various levels, while 7 (1.2%) had never attended school. More than half of the women (55.1%) were married, while 84 (14.6%) were single mothers. Also, 406 (70.8%) of them engaged in informal work, compared to 56 (9.8%) who were unemployed.

The majority (n=233, 40.6%) of the respondents were in their third trimester, while most respondents, 206 (35.9%), had been pregnant once (Table 1).

Table 1: Socio-demographic characteristics of study participants.

Variable	Number (N)	Percentage
Level of education		
No education	7	1.2
Basic school	64	11.2
Junior high school	152	26.5
Senior high school	227	39.5
Tertiary level	124	21.6
Marital status		
Cohabitating	174	30.3
Married	316	55.1
Single	84	14.6
Occupation		
Formal worker	95	16.6
Informal worker	406	70.8
Student	17	2.8
Unemployed	56	9.8
Gestational age		
First trimester (1-13 weeks)	124	21.6
Second trimester (14-26 weeks)	217	37.8
Third trimester (27-40 weeks)	233	40.6
Gravidity		
One	206	35.9
Two	197	34.3
Three	111	19.3
Four	41	7.1
Five	11	1.9
Six	7	1.2
Seven	1	0.2

Prevalence of pregnancy-related low back and pelvic girdle pain

Two hundred and ninety-five (51.4%) respondents reported experiencing LBP at some point in their pregnancy, with 62.0% rating the pain at moderate intensity level, while 24.4% rated it at severe intensity level. Similarly, 283 (49.3%) respondents reported experiencing PGP, of which 51.6% of them described the intensity of the pain as moderate, while 28.6% reported that it was of severe intensity (Table 2).

Association between socio-demographic factors, clinical profiles, and the prevalence of LBP

A Chi-square analysis of the associations between the prevalence of LBP and sociodemographic and clinical characteristics is presented in Table 3. The gestational age of mothers was significantly associated with LBP prevalence ($\chi^2=36.7$, df=2, $p<0.001$). However, maternal age, level of education, and gravidity showed no significant associations ($p>0.05$) with the prevalence of LBP. Also, pregnant women in their second trimester (OR=3.46, $p<0.001$) and third trimester (OR=3.84, $p<0.001$) had higher odds of experiencing LBP than those in their first trimester (Table 4).

Table 2: Prevalence of pregnancy-related LBP and PGP, NPRS Ratings, and ODI scores.

Variable	Number (n=574)	Percentage
Prevalence of low back pain		
Yes	295	51.4
No	279	48.6
Rating LBP on the numeric pain rating scale (N=295)		
Minimal pain	40	13.6
Moderate pain	183	62.0
severe pain	72	24.4
Rating LBP on the Oswestry disability index (295)		
Minimal disability	193	65.4
Moderate disability	98	33.2
Severe disability	3	1.1
Crippling disability	1	0.3
Prevalence of pelvic girdle pain		
Yes	283	49.3
No	291	50.7
Rating PGP on the numeric pain rating scale (N=283)		
Minimal pain	56	19.8
Moderate pain	146	51.6
Severe pain	81	28.6
Rating PGP on the Oswestry disability index (283)		
Minimal disability	183	64.7
Moderate disability	96	33.9
Severe disability	3	1.1
Crippling disability	1	0.3

LBP – low back pain: PGP – pelvic girdle pain

Table 3: Association between socio-demographic factors, clinical profiles, and the prevalence of LBP.

Variable	N	X^2 value	df	P value
Age (years)	574	29.5	30	0.490
Level of education	574	0.520	3	0.915
Marital status	574	3.58	2	0.167
Occupation	574	0.431	3	0.934
Gestational age	574	36.7	2	<0.001
Gravidity	574	6.46	6	0.374

Association between socio-demographic factors, clinical profiles, and the prevalence of PGP

There was a statistically significant association between the gestational age of participants and the prevalence of PGP (χ^2=30.6, df=2, p<0.001). Similarly, pregnant women in their second trimester (OR=2.2, p<0.001) and third trimester (OR=3.6, p<0.001) had higher odds of experiencing PGP than their counterparts in their first trimester. However, the associations between participant age, level of education, marital status, and the prevalence of PGP were not statistically significant (p>0.05) (Table 5). Gestational age as a risk factor for PGP is shown in Table 6.

Table 4: Gestational age as a risk factor for LBP.

Model coefficients - low back pain					
Predictor	**Estimate**	**SE**	**Z**	**P value**	**Odds ratio**
Intercept	-0.973	0.201	-4.84	<.001	0.378
Gestational age					
Second trimester – first trimester	1.242	0.243	5.10	<.001	3.464
Third trimester – first trimester	1.347	0.241	5.58	<.001	3.845

Table 5: Association between socio-demographic factors, clinical profiles, and the prevalence of PGP.

Variable	N	X^2 value	df	P value
Age	574	26.7	30	0.637
Level of education	574	2.06	3	0.560
Marital status	574	5.20	2	0.074
Occupation	574	3.94	3	0.268
Gestational age	574	30.6	2	<0.001
Gravidity	574	4.67	6	0.586

Table 6: Gestational age as a risk factor for PGP.

Model coefficients - pelvic girdle pain					
Predictor	**Estimate**	**SE**	**Z**	**P value**	**Odds ratio**
Intercept	-0.855	0.196	-4.36	<0.001	0.425
Gestational age					
Second trimester – first trimester	0.790	0.239	3.31	<0.001	2.204
Third trimester – first trimester	1.282	0.238	5.39	<0.001	3.604

DISCUSSION

The study was designed to establish a population-based prevalence of LPB and PGP, together with their predisposing factors, among pregnant women during their antenatal care. A high prevalence was found for LBP (56.3%) and PGP (37.2%), which was substantially linked with the gestational age. Invariably, the gestational ages of the mothers were found to be a strong predictor of both disorders. Physiologically, a woman's body transformation during pregnancy is tied to a combination of biomechanical, hormonal, and anatomical changes. The impact of these changes is borne directly by the musculoskeletal system, causing pain and discomfort, particularly in the lower back and pelvic regions. Our findings align with those of the previous studies, in which about 50% of pregnant women were reported to have LBP or PGP.[6,7] In the present study, 51.4% of respondents reported LBP, which is about 2 times higher compared to the findings of the LBP prevalence study in Abakaliki, Nigeria, but runs closely with that of a study conducted in the Bamenda Hospital, Cameroon, where a 53.9% LBP prevalence was reported.[2,10] Similarly, the 49.3% PGP prevalence reported in our study is twice that reported in Ethiopia (24.3%).[19]

Considering the non-statistically significant associations found between maternal age, level of education, gravidity, and LBP/PGP prevalence, the most probable reason might be partly connected with the variations in the

morphological architecture of the musculoskeletal system in women across regions and populations. For instance, common DNA sequence variants within genes encoding for structural components or regulators of the collagen fibril and other extracellular matrix proteins, such as collagens, fibrillins, proteoglycans, and non-fibre-forming proteins (glycoproteins), have been associated with susceptibility to musculoskeletal soft tissue injuries.[20] The authors further stressed that the effect sizes of some of these associations are relatively large for multifactorial disorders (OR>2), suggesting that genetic variants are probably strong modulators of the risk for musculoskeletal soft tissue injuries. We also found that participants' gestational age was significantly associated with the prevalence of LBP and PGP. This observation elucidates how LBP and PGP can result from alterations in the musculoskeletal system, including postural adjustments, increased load on the spine due to an expanding fetus, and an exaggerated lordosis, which places additional strain on the spinal joints, causing pain, discomfort, and resulting dysfunction.

The pain intensity levels of both LBP and PGP were mostly rated as moderate by 62.0% and 51.6% of respondents, respectively. This finding aligns with the report by Gutke et al which suggested that moderate to severe pain levels are associated with reduced mobility and poor sleep quality during pregnancy and delivery. Indeed, LBP and PGP negatively affect the ability of a pregnant woman to perform activities of daily living, such as self-care, walking, sitting, standing, traveling, sleeping, and engaging in sexual activities. This might have explained the significant percentages of 33.2% and 33.9% moderate disability among pregnant women with LBP and PGP, respectively. This finding is similar to the previous studies, indicating that while many pregnant women are able to perform basic activities of daily living, moderate disability can significantly impact occupational functioning, personal care, and social participation.[18,21,22] The low proportion of participants (1.4%) reporting severe and crippling disability may reflect adaptive coping mechanisms or limited reporting due to the perceived normalization of pain during pregnancy in the Ghanaian context. The above findings suggest adequate and structured supports such as physiotherapy, ergonomics education, or workplace modifications, to avert preventable disability among pregnant women.

Limitations

Despite the relevant information gleaned from the study, it has some limitations. Firstly, the use of non-probability proportional quota sampling limits the statistical power of our inferential tests, thereby limiting the generalizability of the findings beyond the selected health facilities. Secondly, the three hospitals reflect urban maternal care in Accra; thus, the results may not represent pregnant women in rural areas or other regions of Ghana. Lastly, the study relied on self-reported measures of pain intensity and functional disability. While validated tools were used, self-reporting may be affected by recall bias, variability in pain perception, and social desirability bias, particularly in contexts where pregnancy-related pain is often normalized.

CONCLUSION

In spite of the identified limitations in this study, LBP and PGP were found to be highly prevalent among pregnant women attending the antenatal clinic in the Accra Metropolis of Ghana, particularly during the third trimester. Given the high prevalence of these conditions during this period, adequate assessment and education become imperative among the health care professionals to proactively provide effective clinical care and appropriate referrals, when the need arises. Also, ensuring regular updated training for the midwives and nurses is highly necessary while educating the pregnant women on the preventive measures for LBP and PGP, with a view to curbing the high prevalence. Future studies should explore the consequences of pregnancy-related LBP and PGP post-delivery, particularly in contexts like Ghana.

ACKNOWLEDGEMENTS

Authors would like to thank the women who voluntarily participated in this study for their time, the management of the Mamprobi Hospital, Ussher Hospital, and the Korle-Bu Teaching Hospital for permitting to conduct the study within their premises, and the research assistants who assisted with data collection.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Salari N, Mohammadi A, Hemmati M, Hasheminezhad R, Kani S, Shohaimi S, et al. The global prevalence of low back pain in pregnancy: a comprehensive systematic review and meta-analysis. BMC Pregnancy Childbirth. 2023;23(1).
2. Shanshan H, Liying C, Huihong Z, Yanting W, Tiantian L, Tong J, et al. Prevalence of lumbopelvic pain during pregnancy: A systematic review and meta-analysis of cross-sectional studies. Acta Obstetricia et Gynecologica Scandinavica. 2024;103:225-40.
3. Manyozo SD, Nesto T, Bonongwe P, Muula AS. Low back pain during pregnancy: Prevalence, risk factors and association with daily activities among pregnant women in urban Blantyre, Malawi. Malawi Med J. 2019;31(1):71-6.
4. Omoke NI, Amaraegbulam PI, Umeora OUJ, Okafor LC. Prevalence and risk factors for low back pain during pregnancy among women in Abakaliki, Nigeria. Pan Afr Med J. 2021;39.

5. Gashaw M, Gedlu S, Janakiraman B. Burden of pelvic girdle pain during pregnancy among women attending ante-natal clinic, Ethiopia:a cross-sectional study. BMC Pregnancy Childbirth. 2020;20(1):494.
6. Usman MI, Abubakar MK, Muhammad S, Rabiu A, Garba I. Low back pain in pregnant women attending antenatal clinic: The Aminu Kano teaching hospital experience. Ann Afr Med. 2017;16(3):136-40.
7. Kizito S, Musaba MW, Wandabwa J, Kiondo P. Prevalence and factors associated with lumbopelvic pain among pregnant women in their third trimester: a cross-sectional study. Pan Afr Med J. 2023;46.
8. Sudha V, Katadi M, Rao Kolati S, Rameswarapu R, Vansh K, Prasanthi A, et al. Prevalence and Risk Factors of Pregnancy-Associated Low Back Pain: A Cross-Sectional Observational Study. J Contemp Clin Pract. 2024;10(2):512-7.
9. Mohammad Hadi Binesh. Low back pain during pregnancy. Salamat Aca Res J. 2025;2(2):61-8.
10. Pisoh DW, Karelle NTJ, Nchufor RN, Ako TW, Mforteh AAA, Boten M, et al. Low back pain during pregnancy: prevalence, risk factors and clinical profile in the Bamenda Regional Hospital. BMC Pregnancy Childbirth. 2025;25(1).
11. Bjelland EK, Eskild A, Johansen R, Eberhard-Gran M. Pelvic girdle pain in pregnancy: The impact of parity. Am J Obstet Gynecol. 2010;203(2):146.e1-e6.
12. Bjelland EK, Eberhard-Gran M, Nielsen CS, Eskild A. Age at menarche and pelvic girdle syndrome in pregnancy: A Population study of 74 973 women. BJOG. 2011;118(13):1646-52.
13. Casagrande D, Gugala Z, Clark SM, Lindsey RW. Low Back Pain and Pelvic Girdle Pain in Pregnancy. J Am Academy Orthop Surg. 2015;23(9):539-49.
14. Vleeming A, Albert HB, Östgaard HC, Sturesson B, Stuge B. European guidelines for the diagnosis and treatment of pelvic girdle pain. Eu Spine J. 2008;17:794-819.
15. Virgara Rosa, Maher Carol, Van Kessel Gisela. The comorbidity of low back pelvic pain and risk of depression and anxiety in pregnancy in primiparous women. BMC Pregnancy Childbirth. 2018;288(18):1-7.
16. Gutke A, Boissonnault J, Brook G, Stuge B. The Severity and Impact of Pelvic Girdle Pain and Low-Back Pain in Pregnancy: A Multinational Study. J Womens Health. 2018;27(4):510-7.
17. Mamipour H, Farazmehr S, Negahban H, Nazary-Moghadam S, Dehghan-Manshadi F, Navi Nezhad M, et al. Effect of Core Stabilization Exercises on Pain, Functional Disability, and Quality of Life in Pregnant Women With Lumbar and Pelvic Girdle Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2023;46(1):27-36.
18. Clinton SC, Newell A, Downey PA, Ferreira K. Pelvic Girdle Pain in the Antepartum Population: Physical Therapy Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability, and Health From the Section on Women's Health and the Orthopaedic Section of the American Physical Therapy Association. J Womens Health Phys Therap. 2017;41(2):102-25.
19. Gashaw M, Gedlu S, Janakiraman B. Burden of pelvic girdle pain during pregnancy among women attending ante-natal clinic, Ethiopia: a cross-sectional study. BMC Pregnancy Childbirth. 2020;20(1).
20. Collins M, September A V, Posthumus M. Biological variation in musculoskeletal injuries: Current knowledge, future research and practical implications. Br J Sports Med. BMJ Publishing Group. 2015;49:1497-503.
21. Svahn Ekdahl A, Fagevik Olsén M, Jendman T, Gutke A. Maintenance of physical activity level, functioning and health after non-pharmacological treatment of pelvic girdle pain with either transcutaneous electrical nerve stimulation or acupuncture: A randomised controlled trial. BMJ Open. 2021;11(10).
22. Liddle SD, Pennick V. Interventions for preventing and treating low-back and pelvic pain during pregnancy. Cochrane Database Syst Rev. 2015;2015(9):CD001139.

Cite this article as: Abdul-Samed F, Bello AI, Adu-Bonsaffoh K, Sankah BEA. Prevalence of pregnancy-related low back and pelvic girdle pain among women under antenatal care: insights from an Accra metropolitan survey. Int J Reprod Contracept Obstet Gynecol 2026;15:509-14.