Original Research

Journal of Behavioral Health
www.scopemed.org
DOI: 10.5455/jbh.20160804123242

Incidence of back pain among women of childbearing age and its management during pregnancy

Olusola Ayanniyi[1], Arinola Olasumbo Sanya[1], Samuel Olusegun Ogunlade[2]

[1]Department of Physiotherapy, College of Medicine, University of Ibadan, University College Hospital, Ibadan, Nigeria, [2]Department of Surgery, College of Medicine, University of Ibadan, University College Hospital, Ibadan, Nigeria

Address for correspondence:
Olusola Ayanniyi, Department of Physiotherapy, College of Medicine, University of Ibadan, University College Hospital, Ibadan, Nigeria.
E-mail: drayanniyi@gmail.com

Received: April 27, 2016
Accepted: July 01, 2016
Published: August 23, 2016

ABSTRACT

Objective: There is a dearth of studies on the history of back pain (BP) among women of childbearing age in Nigeria. The aims of this study were to investigate the history of incidence of BP among women of childbearing age and how pregnancy-related BP was managed among this population. **Materials and Methods:** A survey of pregnant women attending antenatal clinics in selected medical facilities in Ibadan and Ogbomoso, Nigeria, was conducted over a period of 2 years and 3 months using pre-tested questionnaire. Data obtained were analyzed using descriptive and inferential statistics. **Results:** Of 2187 questionnaires administered, 1919 (87.75%) were fully completed. The incidence of BP was highest during current pregnancy 1008 (52.5%) (odds ratio [OR] = 10.23 [95% confidence intervals (CI) = 8.7167-12.0142]) and least post-delivery 69 (3.6%) (OR = 6.99 [95% CI = 4.22-11.57]). The mean age of those with and without BP was 26.8 ± 5.3 and 27.1 ± 5.4 years, respectively. Cesarean section has no effect on the incidence of BP among the respondents OR = 0.9634 (95% CI = 0.7371-1.2591) with and without BP in the current pregnancy. Prior history of BP was strongly associated with BP during current pregnancy (OR = 23.67 [95% CI = 14.98-37.39]). Analgesics (50.4%) and physical approaches (49.6%) were mainly used to manage BP. Side lying (78.2%) was the most preferred therapeutic position for relieving BP. Standing up and walking around was found useful to relieve BP induced or aggravated by prolonged sitting or maintenance of static posture. **Conclusions:** BP is most prevalent during current pregnancy and least post-delivery among women of childbearing age. Prior history of BP was strongly associated with future BP. Analgesics and postural modifications were the two major interventions used by the respondents in this study. Side lying position was found useful in relieving BP among the respondents.

KEY WORDS: Back pain, incidence, management, pregnancy

INTRODUCTION

Back pain (BP) is a common problem that most people experience at some point in their lives [1]. It is identified as one of the major problems throughout the world with the highest prevalence among female individuals and those aged 40-80 years [2,3]. Moreover, it is one of the common problems associated with pregnancy [4] where it is referred to as pregnancy-related BP. It often appears around 22 weeks of gestation, and it may also occur at any time during pregnancy [4]. Many women may experience their first episodes of BP during pregnancy [5,6] while some may experience BP post-partum [7] and others during menstrual periods [8,9]. The problem of BP among women during the childbearing years was attributed to the combination of mechanical, hormonal, circulatory, and psychosocial factors [6,10,11]. During pregnancy, the female body undergoes a number of hormonal and anatomical changes [12], and these changes affect a wide range of structures and organ systems in the body which may cause BP. Likewise, cesarean section and procedures associated with it such as administration of epidural anesthesia for labor and delivery are also associated with post-partum BP in some women [13,14].

Unlike in the general population, most women consider back discomfort as an inevitable part of pregnancy, and therefore, the majority of them do not seek treatment from health-care professionals, despite the availability of such treatment [6,15]. However, according to Novaes *et al.* [16], pregnancy-related BP should be treated because it impacts negatively on the quality of life of pregnant women and prevents them from living a normal life.

Previous studies from Nigeria [17,18] have examined the prevalence of BP during pregnancy among women of childbearing age. However, the present study investigated the incidences of BP during reproductive years of women of childbearing age such as: Before first pregnancy, during menstrual periods, during pregnancy, post-delivery, and possible contributions of cesarean section (CS) to the incidence of BP

among women of childbearing age. The study also investigated how BP was managed during pregnancy among the affected participants. Data for the present study were derived from a larger study conducted on the "prevalence of BP among pregnant women and available management approaches during pregnancy in some selected medical facilities in Ogbomoso and Ibadan, Oyo state, Nigeria."

MATERIALS AND METHODS

Participants

Pregnant women attending antenatal clinics in six selected medical facilities participated in the study.

Inclusion criteria

i. Pregnant women who were registered in the antenatal clinics of the selected medical facilities where the study was conducted and who were willing to participate in the study
ii. Women who were able to understand the English or Yoruba language.

Exclusion criteria

Pregnant women who were unable to understand the English language or Yoruba language which were the medium of communication in the area where the study was conducted were excluded from the study. Furthermore, excluded were those who were not willing to take part in the study.

Materials

The main instrument for this study was a researcher-administered questionnaire consisting of closed and open-ended questions, which were adapted from a previous study [17]. The questionnaire was designed to obtain information on the respondents' demographic status, history of BP occurrences among women of childbearing age before and during pregnancy. Modes of delivery, site of BP, severity of BP, effects of positions, and postures on BP. Management of BP during pregnancy was also documented (Appendix). The questionnaire was assessed by experts in physiotherapy and orthopedic to ensure its face and content validity. A pilot study gave its test-retest reliability to be $r = 0.87$.

Procedure

Ethical approval was obtained from each of the medical facilities where the study was conducted, and permission was obtained from the various heads of the antenatal clinics where the study was conducted. The purpose of the study was explained to the intended participants, and their informed consent was sought and obtained before participating in the study. Pregnancy-related BP was defined as BP that has its onset during pregnancy. Such BP has distinctive features of being pregnancy related in nature and often appears around 22 weeks of gestation [4,12,19,20]. The site of BP in this study was broadly defined to include regions of dorsal spine to lower spine and including pelvic girdle structures. Participants were enrolled in the study as they became available during the period of the study. The survey was conducted over a period of 2 years and 3 months. The questionnaire survey was carried out by trained interviewers. The questionnaire was administered to the participants in a purposely designated area in the various antenatal clinics before or after antenatal clinic consultations as deemed appropriate by the matron in charge of each of the antenatal clinics. Participants were interviewed in the language of their choice based on their personal preference between English language and Yoruba language. The questionnaire took an average of 8-10 min to administer.

Data Analysis

Data generated from each of the medical facilities were pooled together for analysis. Simple logistic regression was used to analyze the sample with the calculation of odds ratios (OR) and the 95% confidence intervals (CI) for the incidence of BP among the participants and its association to the current BP. Chi-square test was used to determine if there was a statistical difference in the incidence of BP across the 3 trimesters among the BP group. Alpha level was set at 0.05. The data analyses were carried out using SPSS 13.0 version software (SPSS Inc., Chicago, Illinois, USA).

RESULTS

Of 2187 questionnaires administered in the various clinics 1919 (87.8%) were found admissible for analysis. Respondents were 27.0 ± 5.43 years of age (range 14-47 years), and mean pregnancy was 2.5 ± 1.46. The majority of respondents 1008 (52.5%) have BP during the current pregnancy, and 911 (47.5%) were without BP. The odds of developing BP among the respondents in the current pregnancy were 10.23 (95% CI = 8.72-12.01).

The mean age of respondents with BP were 27.0 ± 5.3 years and those without BP were 27.1 ± 5.4 years old, respectively. Mean pregnancy was higher among respondents with BP 2.6 ± 1.50 than those without BP 2.4 ± 1.40. Chi-square correlation test indicated significant relationship between age and parity among the respondents (r= 0.617; P= 0.001).

The distributions of respondents with BP during the current pregnancy across the three trimesters were: First trimester: 276 (27.4%), second trimester: 289 (28.7%), and third trimester: 443 (43.9%). The respondents in the third trimester constituted the largest single group with BP. Period of peak BP among the respondents in the current pregnancy fell between 20th and 28th weeks of pregnancy. Chi-square analysis indicated that there was a statistically significant difference in the occurrence of BP (P = 0.014) across the trimesters.

Table 1 showed the history of CS among the respondents (n = 1283) excluding women with the first pregnancy. The

odds of CS causing BP among the pregnant women in the current pregnancy was found to be insignificant (OR = 0.96 [95% CI = 0.74-1.26]).

Table 2 showed the distribution of the respondents using number of pregnancy. Respondents in their first and second pregnancy constituted the largest groups 636 (33.1%) and 446 (23.2%), respectively. The incidence of BP was highest among the multipara (64.0%). The history of incidence of BP among the respondents was as shown in Table 3. The odds of women of childbearing age with a prior history of BP (e.g., during menses, before first pregnancy, previous pregnancy, post-delivery) to develop BP during the current pregnancy were significantly related to each other as reported in Table 3 showing the OR (95% CI).

Slight majority 508 (50.4%) of the respondents received pain-relieving medication for BP in the course of their antenatal consultations. Counseling, postural education, and modification of activities of daily living were employed by 49.6% of the pregnant women to manage their BP in the current pregnancy. Respondents identified the following sleeping positions for managing BP discomfort during pregnancy: Side lying (78.2%), supine lying (22.6%), and combination of different sleeping positions (side lying, supine lying, and others) (53.7%) as most convenient positions for sleeping. Standing up to walk around was found useful to relieve BP induced or aggravated by prolonged sitting or maintenance of static postures.

Table 1: Number of respondents with and without back pain by mode of delivery (*N*=1919)

Mode of delivery	Back pain		Total (*N*=1919)
	Yes (BP) (*n*=1008)	No (BP) (*n*=911)	
Delivery with Cesarean section	146	128	274
Delivery without Cesarean section	547	462	1009
No birth (first pregnancy)	315	321	636

BP: Back pain, *N*: Number (grand total), *n*: Number (subtotal)

Table 2: Distribution of respondents using number of pregnancy

Order of pregnancy	Frequency	NBPc (%)	BPc
1st pregnancy	636	321 (50.5)	315 (49.5)
2nd pregnancy	446	214 (48.0)	232 (52.0)
3rd pregnancy	328	152 (46.3)	176 (53.7)
4th pregnancy	261	128 (49.0)	133 (51.0)
5th pregnancy	165	66 (40.0)	99 (60.0)
6th pregnancy	83	30 (36.0)	53 (64.0)
Total	1919	911	1008

NBPc: No back pain current pregnancy, BPc: Back pain current pregnancy

Table 3: Odds ratio for incidence of back pain among women of childbearing age with prior history of back pain during the current pregnancy (*N*=1919)

History of BP	*n* (%)	OR (95% CI)
BP during menses (*N*=1919)	341 (17.8)	4.16 (95% CI=3.15-5.48)**
BP before first pregnancy (*N*=1919)	214 (11.2)	5.21 (95% CI=3.6-7.55)**
BP previous pregnancy (*n*=1283)*	295 (23.0)*	23.67 (95% CI=14.98-37.39)**
BP post-delivery (*n*=1283)*	69 (3.6)*	6.99 (95% CI=4.22-11.57)**
BP current pregnancy (*N*=1919)	1008 (52.5)	10.23 (95% CI=8.72-12.01)**

BP: Back pain, *N*: Number (grand total), *n*: Number (subtotal), OR: Odds ratio, CI: Confident interval. **OR (95% CI) significant, *Excluding respondents with first-time pregnancy group (*n*=636)

DISCUSSION

The present study examined the history of incidence of BP among women of childbearing age and its relationship to BP during the current pregnancy and how BP was managed among the respondents. Our finding showed that BP is a major problem among women of childbearing age with 52.5% (OR = 10.23 [95% CI = 8.72-12.01]) reporting BP in the current pregnancy. Our finding thus corroborated previous findings [4-6] which found a strong association between pregnancy and BP in women of childbearing age. The demographic characteristics of our sample with respect to age profile were similar. There was no significant difference in the mean age of respondents with and without BP (P = 0.328). However, there was a significant difference (P = 0.002) in the mean pregnancy between respondents with BP and those without BP. This finding is consistent with previous findings [19,20] where women with high parity suffered from BP than those with low parity. This is a possible indication that high parity predisposed women of childbearing age to BP.

The incidence of BP among the respondents during the current pregnancy and past pregnancy is consistent with findings from previous studies [4,5,10,17,18] which recognized pregnancy as a risk factor in the genesis of BP among women of childbearing age. In the literature, histories of previous BP before first pregnancy [21,22] and during menses [8,9] were closely associated with the incidence of BP during pregnancy. This is corroborated by the present study where regression analysis established strong association for prior history of BP (during menses OR 4.16 (95% CI = 3.15-5.48), before first pregnancy OR 5.21 (95% CI = 3.6-7.55), previous pregnancy OR 23.67 (95% CI = 14.98-37.39), post-delivery OR 6.99 (95% CI = 4.22-11.57) with incidence of BP in the current pregnancy among the respondents. In our finding, history of BP during the immediate previous pregnancy showed the strongest association as a predictor of BP during the current pregnancy with OR = 23.67 (95% CI = 14.98-37.39). This is consistent with previous findings [22,23] which implicated prior histories of BP as one of the major risk factors for the development of BP in pregnancy.

The history of previous CS among the respondents does not show any strong association with incidence of BP during the current pregnancy OR = 0.96 (95% CI = 0.74-1.26). This may be an indication that CS is of less importance than pregnancy in causing BP among the pregnant women [13].

Pattern of Management of BP among Pregnant Women

Our findings showed that management options available for managing BP among pregnant women in this study were limited. This is at variance to what is obtainable in the United Kingdom and Scandinavia where many options were available [24-26] but it's consistent with earlier findings by Sanya and Olajitan [17] who found their participants nearly equally divided among those who utilized postural modifications only (48.3%) and those who used a combination of analgesic and postural modifications (41.1%) to manage their BP. The decision as to who determined the mode of treatment received by the pregnant women for their BP is not inquired about, therefore it is not clear whether respondents have an input in choosing the mode of their treatment or not. However, according to Sinclair *et al*. [24], some women may decline the use of medication due to their fear of its safety in pregnancy and possible negative effects on their unborn babies. Conversely, those who took painkillers may also have suffered greater pain regardless of the informed/uninformed status of the patient or prescriber. The utilization of physical approaches such as various exercises, physiotherapy, modification in the activities of daily living had been found useful in the management of BP in the general population [27-29] and among pregnant women [24,25].

The usefulness of side lying sleeping position in the relief of BP among the majority of the participants is consistent with previous finding [25]. This position has being found to be easily amenable to modifications with various forms of support for effective management of BP among pregnant wome [25,30]. The interruption of prolonged or static postures with periodic breaks by pregnant women to relieve their BP is supported in the literature as an effective method of managing BP problem [31].

Recall bias is a potential limitation in this study; however, this is minimized by encouraging the participants to limit their recall to the episode of BP occurrences they were sure of. Most of the pregnant women had poor knowledge of the different mode of delivery apart from the normal delivery and CS. Consequently, this aspect of the questionnaire interview was, therefore, restricted to the two options of normal delivery and CS.

Future Research Focus

There is a need to understand the multifaceted nature of the BP in women of childbearing age to be able to proffer effective management approaches for it. This is important because literature emphasized the interrelationship between pregnancy and BP in female notwithstanding its origin, site, and severity. Future studies need to identify and highlight those factors that promote and perpetuate BP problems in some women and not in others. Health-care professionals in Nigeria and indeed in Africa should play an advocacy role in ensuring that pregnancy-related BP is given due recognition and its effective management appropriately promoted.

Clinical Implications of Findings

It can be inferred from this study that BP is highly prevalent among women of childbearing age; however, there are limited options available for its management during pregnancy. Hence, there is a great potential in exploring different methods of management that have been developed in other parts of the world in combating the problem of BP among pregnant women in Nigeria.

CONCLUSIONS AND RECOMMENDATION

BP was common among women of childbearing age who participated in this study. Prior history of BP was strongly associated with BP during current pregnancy while previous CS has no association with future incidence of BP among women of childbearing age in this study. Analgesics and postural modifications were the two major interventions utilized by the respondents in this study. Side lying position was found to be most useful in relieving BP among pregnant women in the present study.

ACKNOWLEDGMENT

Special thanks to all the pregnant women who participated in this study. We are grateful to the authorities of the various hospitals and head of departments who gave us access to their clinical facility.

REFERENCES

1. Garcia JB, Hernandez-Castro JJ, Nunez RG, Pazos MA, Aguirre JO, Jreige A, *et al*. Prevalence of low back pain in Latin America: A systematic literature review. Pain Physician 2014;17:379-91.
2. Ehrlich GE. Low back pain. Bull World Health Organ 2003;81:671-6.
3. Hoy D, Bain C, Williams G, March L, Brooks P, Blyth F, *et al*. A systematic review of the global prevalence of low back pain. Arthritis Rheum 2012;64:2028-37.
4. Mogren IM, Pohjanen AI. Low back pain and pelvic pain during pregnancy: Prevalence and risk factors. Spine (Phila Pa 1976) 2005;30:983-91.
5. DeJoseph JF, Cragin L. Biomedical and feminist perspectives on low back pain during pregnancy. Nurs Clin North Am 1998;33:713-24.
6. Sabino J, Grauer JN. Pregnancy and low back pain. Curr Rev Musculoskelet Med 2008;1:137-41.
7. Nilsson-Wikmar L, Harms-Ringdahl K, Pilo C, Pahlbäck M. Back pain in women post-partum is not a unitary concept. Physiother Res Int 1999;4:201-13.
8. Wijnhoven HA, de Vet HC, Smit HA, Picavet HS. Hormonal and reproductive factors are associated with chronic low back pain and chronic upper extremity pain in women – The MORGEN study. Spine (Phila Pa 1976) 2006;31:1496-502.
9. Smith DR, Mihashi M, Adachi Y, Shouyama Y, Mouri F, Ishibashi N, *et al*. Menstrual disorders and their influence on low back pain among Japanese nurses. Ind Health 2009;47:301-12.
10. Rodrigues WF, Silva LR, Nascimento MA, Pernambuco CS, Giani TS, Dantas EH. Prevalence of lower back pain and physical inactivity: The impact of psychosocial factors in pregnant women served by the Family Health Strategy. Einstein (Sao Paulo) 2011;9:489-93.
11. Wilder DG, Pope MH, Magnusson M. Mechanical stress reduction during seated jolt/vibration exposure. Semin Perinatol 1996;20:54-60.
12. Heckman JD, Sassard R. Musculoskeletal considerations in pregnancy. J Bone Joint Surg Am 1994;76:1720-30.
13. Drew MK, Sibbritt D, Chiarelli P. No association between previous caesarean-section delivery and back pain in mid-aged Australian

women: An observational study. Aust J Physiother 2008;54:269-72.
14. Loughnan BA, Carli F, Romney M, Doré CJ, Gordon H. Epidural analgesia and backache: A randomized controlled comparison with intramuscular meperidine for analgesia during labour. Br J Anaesth 2002;89:466-72.
15. Colliton J. Back pain and pregnancy: Active management strategies. Phys Sportsmed 1996;24:89-93.
16. Novaes FS, Shimo AK, Lopes MH. Low back pain during gestation. Rev Lat Am Enfermagem 2006;14:620-4.
17. Sanya AO, Olajitan A. Incidence of low back pain in pregnancy. Afr J Biomed Res 2001;4:57-60.
18. Ayanniyi O, Sanya AO, Ogunlade SO, Oni-Orisan MO, Prevalence and pattern of back pain among pregnant women attending Antenatal clinics in selected health care facilities. Afr J Biomed Res 2006;9:149-56.
19. Melzack R, Bélanger E. Labour pain: Correlations with menstrual pain and acute low-back pain before and during pregnancy. Pain 1989;36:225-9.
20. Turgut F, Turgut M, Cetinsahin M. A prospective study of persistent back pain after pregnancy. Eur J Obstet Gynecol Reprod Biol 1998;80:45-8.
21. Ostgaard HC. Lumbar back and posterior pelvic pain in pregnancy. In: Vleeming A, Mooney V, Dorman T, Snijders C, Stoeckart, R, editors. Movement, Stability and Low Back Pain: The Essential Role of the Pelvis. New York: Churchill Livingstone; 1997. P. 52-61.
22. Wang SM, Dezinno P, Maranets I, Berman MR, Caldwell-Andrews AA, Kain ZN. Low back pain during pregnancy: Prevalence, risk factors, and outcomes. Obstet Gynecol 2004;104:65-70.
23. Ansari NN, Hasson S, Naghdi S, Keyhani S, Jalaie S. Low back pain during pregnancy in Iranian women: Prevalence and risk factors. Physiother Theory Pract 2010;26:40-8.
24. Sinclair M, Close C, McCullough J, Hughes C, Liddle D. How do women manage pregnancy-related low back and/or pelvic pain? Descriptive findings from an online survey. Evid Based Midwifery 2014;12:76-82.
25. Ashby JF, Johnson GM. The therapeutic positional preferences of pregnant women. NZJP 2015;43:86-92.
26. Vermani E, Mittal R, Weeks A. Pelvic girdle pain and low back pain in pregnancy: A review. Pain Pract 2010;10:60-71.
27. Stankovic R, Johnell O. Conservative treatment of acute low-back pain: A prospective randomised trial: McKenzie method of treatment versus patient education in 'Mini back school'. Spine 1990;15:120-3.
28. Boissonnault W, DiFabio RP. Pain profile of patients with low back pain referred to physical therapy. J Orthop Sports Phys Ther 1996;24:180-91.
29. Ayanniyi O, Ige OG. Back care education on peasant farmers suffering from chronic mechanical low back pain. J Exp Integr Med 2016;5:215-21.
30. Thomas IL, Nicklin J, Pollock H, Faulkner K. Evaluation of a maternity cushion (Ozzlo pillow) for backache and insomnia in late pregnancy. Aust N Z J Obstet Gynaecol 1989;29:133-8.
31. McKenzie RA. Treat Your Own Back. Waikanae, New Zealand: Spinal Publication; 1990.

Source of Support: Nil, Conflict of Interest: None declared.

APPENDIX

Questionnaire

1. Hospital No/Name:.....
2. Address and Phone No:.....
3. Age:.....
4. Number of past pregnancy(ies):.....
5. Number of children:.....
6. Age at first delivery?.....
7. Duration of present pregnancy (Weeks/Months):.....
8. History of pregnancy

		1st	2nd	3rd	4th	5th	6th
(a)	Order of current pregnancy	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
(b)	Age at pregnancies (mother)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
(c)	Mode of delivery (ND, ID, FD, CS)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
(d)	Age of children (years)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

9. Back pain during menstrual period? Yes [ ] No [ ]
10. *Any back pain before the 1st pregnancy? Yes [ ] No [ ]
    (*Not related to pregnancy)
11. Any back pain after previous delivery? Yes [ ] No [ ]
12. Back pain in pregnancy
    (a) Back pain previous pregnancy HBP/LBP/Waist? Yes [ ] No [ ]
    (b) Any back pain this pregnancy? Yes [ ] No [ ]
    (c) *Location/site of the pain: High back/Low back/Waist/Thigh/Leg?
    (*Mark the location of your back pain on the attached BODY diagram)
    (d) Severity of pain: Mild 1 [ ] Moderate 2 [ ] Severe 3 [ ]
    (e) Which area of your back gives you the most pain in this current episode of back pain: HBP [ ], LBP [ ], Waist area/gluteal [ ]
    (f) Trimester of peak back pain (Weeks*/Months): 1, 2, 3, 4, 5, 6, 7, 8, 9
    (*Use the attached Weekly chart form to document this section)
    (g) Is pain (a) intermittent [ ] or (b) continuous [ ]? (Tick one)
13 Management of Back Pain
    (a) Do you received or are you receiving treatment for back pain this pregnancy: Yes [ ] No [ ]
    (b) Type of treatment received/receiving:
        (i) Pain killer/analgesics Yes [ ] No [ ]
        (ii) Adoption of posture/position that relieve the back pain Yes [ ] No [ ]
        (iii) Counseling/health talk/health education Yes [ ] No [ ]
        (vi) Referred for special consultation to other doctor/Department? Yes [ ] No [ ]
        (v) Other form of treatment (please specify) _____
        _____
        _____
        (iv) Explain what was done/the nature of the treatment you received: _____
        _____
        _____
        _____
        (iiv) Was there any improvement in the symptoms of the back pain as a result of treatment? Yes [ ] No [ ]
14. Assessment of postures and positions that relieve back pain: What positions make your back pain better?
    a. Sitting [ ]
    b. Rising up from sitting [ ]
    c. Bending [ ]
    d. Standing [ ]
    e. Lying face down [ ]
    f. Lying on your back [ ]
    g. Lying on your right side [ ]
    h. Lying on your left side [ ]
    i. Walking [ ]
    j. Other modification to postures/positions to relieve back pain (please specify)

Thank you.
END

KEY:
ML: Mild (1)
FD: Forceps delivery
MD: Moderate (2)
CS: Cesarean section
SV: Severe (3)
NA: Not applicable
T1: 1st trimester
T2: 2nd trimester
T3: 3rd trimester
HBP: High back pain
LBP: Low back pain
WP: Waist pain
I: Intermittent
C: Continuous
ND: Normal delivery
ID: Induced labor.