Prevalence, severity and factors associated with low back pain and pelvic girdle pain during pregnancy

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Abstract

Background: *Low back pain (LBP) and pelvic girdle pain (PGP) are commonly reported during pregnancy and are known to affect pregnant women's well-being. Still, these conditions are often considered to be a normal part of pregnancy. This study assesses the prevalence and severity of LBP and PGP among pregnant at Hue University of Medicine and Pharmacy (HueUMP) Hospital, as well as exploring factors associated with LBP and PGP.*

Methods: *A cross-sectional study with successive recruitment of pregnant women was conducted at two district hospitals in HueMP from May 2021 to May 2022. The data was collected using self-reported questionnaires. Univariate and multivariate logistic regression were used to assess the associations between independent variables and LBP and PGP.*

Results: *A total of 204 pregnant women were included in the study. The reported prevalence of pregnancyrelated LBP and PGP were 57.8% and 26.5%, separately. Pain intensity was noticeable with a mean score of 4. The median disability scores according to the Oswestry Disability Index and total Pelvic Girdle Questionnaire were 10 (4 - 18) and 12 (9.3 - 17.3), respectively. In the final model for women with LBP the adjusted odds ratios were for body mass index (> 30) 1.0 (95% CI, 0.2–5.9), for participant's education (primary, secondary, high school and university) 8.5 (95% CI, 2.4 - 30.6), 6.4 (95% CI, 1.8 - 23.0), 1.7 (95% CI, 0.5 - 5.6) and 1.8 (95% CI, 0.5 - 6.4), respectively. In the final model for women with PGP the adjusted odds ratios were, for participant's education (primary, secondary, high school and university) 0.5 (95% CI, 0.1 - 2.8), 1.7 (95% CI, 0.4 - 8.2), 5.8 (95% CI, 1.2 - 28.8) and 2.6 (95% CI, 0.5 - 13.3), respectively, for working status and sleep hour per day (p < 0.05).*

Conclusions: *Pregnant women at HueUMP Hospital commonly report LBP and PGP. The women experienced low disability despite moderate pain intensity.*

Keywords: *pelvic girdle pain, low back pain, pregnancy, prevalence, severity.*

1. INTRODUCTION

The most frequent musculoskeletal issues that affect pregnant women's health are LBP and PGP. Pregnant women who experience LBP and PGP typically describe their pain as moderate to severe in intensity and trouble with daily tasks like walking, working, sleeping, and feeling well, which lowers their quality of life [1, 2]. While PGP Pelvic girdle pain (PGP) is described as pain in the symphysis and/or between the posterior iliac crest and the gluteal fold, which may spread to the posterolateral thigh, LBP is defined as pain between the costal margins and the inferior gluteal folds [3].

The percentage of pregnancy-related LBP and PGP ranges from 20% to 80%, with the bulk of studies indicating a prevalence of roughly 50% for LBP and/or PGP, and 20% for PGP separately [1, 3-7]. This considerable range can be ascribed to discrepancies between research in participant recruitment, sample size, and classification method, with the majority of studies relying solely on self-reports of pain [7-11] as opposed to those that incorporated physical examinations [12-15].

It has been hypothesized that biomechanical, hormonal, and vascular factors are involved in the pathophysiology of LBP and PGP during pregnancy, however these hypotheses and the particular reasons are still bitterly debated [3, 16, 17]. Risk factors for pregnancy-related LBP and PGP include a heavy workload, repeated or prolonged torso flexion, a history of LBP before pregnancy, a history of LBP or PGP during or after a prior pregnancy, and a history of pelvic trauma [3, 5, 18]. Also linked with LBP and PGP include body mass index (BMI), parity, mother's height, weight, and age, number of prior pregnancies, and use of epidural anesthesia or cesarean section for previous deliveries as well as depression [3-7, 19].

Most investigations on pregnancy-related LBP and PGP have been undertaken in industrialized nations, and it seems that these disorders are typically ignored in poor countries [20]. To our knowledge, the prevalence and severity of pregnancy-related LBP and PGP have

never been investigated in Vietnam. Thus, the primary aim of this study was to examine the prevalence and severity of LBP and PGP in pregnant Vietnamese women. A secondary purpose was to discover the factors that influence LBP and PGP during pregnancy.

2. METHODS

2.1. Study design and setting

A cross-sectional study with successive recruitment of pregnant women was conducted at Hue University of Medicine and Pharmacy hospital from May 2021 to May 2022.

2.2. Participants

If pregnant women visiting antenatal control at HueUMP hospitals were willing to participate and had no history of spinal fracture or surgery, they were eligible for participation in the trial. Women who volunteered to participate in the research provided both oral and written consent. Exclusion criteria included end of pregnancy (defined as delivery or abortion), not being legally able to sign the informed consent (younger than 18 years or suffering from severe intellectual or psychiatric impairment), or having been diagnosed with back pain caused by fractures, direct trauma, or systemic diseases, such as spondylitis or neoplastic, infectious, vascular, metabolic, or endocrine-related processes.

2.3. Procedure

This study required no adjustments to the clinical care of patients. The recruitment process was done as follows. Inclusion and exclusion criteria were applied to every pregnant woman followed by a physician who participated in this study. The physicians explained to all eligible participants the nature of the study and the significance of completing the questionnaires completely and precisely. They then invited participants to sign the informed consent form. The participants in this trial, the physicians who recruited them, and the researchers did not receive any reward for their participation.

Once a subject was enrolled in this study, the recruiting physician provided the data on obstetrical variables and the patient was given self-administered questionnaires to assess the remainder of the variables. Patients independently completed these questionnaires in private. Only the instructions included in the regular, validated versions of the questionnaires were provided. They received no assistance or further instructions from health care professionals, researchers, or other third parties. After completion, surveys were collected by personnel unrelated to the research. For purposes of data protection, subjects were identified by codes rather than their names.

2.4. Variables

The recruiting clinicians obtained obstetrical data from the subject's clinical records, which included the stage of pregnancy (weeks), number of previous pregnancies, number of children born, type of delivery in previous pregnancies (normal, instrumented-forceps, vacuum, or cesarean), and use of epidural anesthesia.

The subjects provided the following personal information: age (date of birth), height (cm), weight (current and before pregnancy, in kg), "body mass index" (BMI) calculated from current weight/(height2), marital status ("living with husband", "husband works away from home", "divorce"), academic level ("no education" "primary" "secondary",, "high school" "university" and employment status (currently working or not and reasons for not working).

Data on the prevalence of LBP and PGP were provided by the participant using a previously validated questionnaire [21]. The questionnaire collected information on pain experienced in the low back or pelvic region during the previous four weeks; whether pain restricted or altered daily activities for more than one day; pain frequency ("some days", "most days", "every day"); and typical pain severity (rated on an 11-point scale, with "0" corresponding to "no pain" and "10" to the worst pain imaginable).

The severity of activity limits and symptoms of pregnancy-related LBP and PGP were assessed using valid and dependable Vietnamese versions of outcome measures. Version 2 of the Oswestry Disability Index (ODI) [22, 23] is comprised of ten items with values ranging from 0 to 5 and describing an increasing degree of difficulty. The Pelvic Girdle Questionnaire (PGQ) consists of 25 items with scores on a 4-point descriptive scale ranging from 0 to 3, indicating an increasing severity of symptoms and activity limits [24, 25]. The combined total score for the ODI and PGQ is expressed as a percentage between 0 and 100 (severe disability).

Additional data provided by the subjects included history of LBP during any previous pregnancies, during postpartum, or not related to pregnancy.

2.5. Statistical analysis

Absolute and relative frequency calculations were performed on categorical variables. For continuous variables, the mean, standard deviation, or median and interquartile ranges were determined, based on whether or not the data displayed a normal distribution. Subjects with and without pain were compared using the Student t test or the Mann-Whitney U test, depending on the normality of the data distribution. Categorical variables were compared through the $\chi 2$ test or the Fisher's exact probability test when $\chi 2$ was not applicable.

Individual factors' connection with LBP and PGP was evaluated using univariate logistic regression analyses, and multivariate logistic models were employed to uncover associations involving several components. The univariate results and clinical

judgment guided the selection of parameters to include in the multivariate models. The odds ratio (OR), 95% confidence intervals (CIs), and p-values were used to report associations. The statistical software package used was SPSS (version 22.0; SPSS, Inc., Chicago, IL). $p < 0.05$ was considered as statistically significant.

3. RESULTS

There were 204 pregnant women enrolled in the study. The median values for age and pregnancy stage were 28 (25-32) years. The mean of gestation weeks is 20 (SD 9) gestation weeks. Twenty-eight-point four percent of the women were nulliparous. The median BMI value is 24.5 (21.8 - 26.9). The primary reason that more than half of women did not report to work was sick leave (39.7%). Most pregnant women sleep 6-8 hours a day. Table 1 shows the sample's characteristics.

The reported prevalence of pregnancy-related LBP was 57.8% (Table 1). Two-third reported a limitation of their ability to perform their usual activities for more than 1 day due to LBP. Eighty-one point three of the women had pain some days. Median pain severity (NRS score) was 4 (4-5) visual analogue scale points. ODI scores (10%) showed low disability. 44.1% women reported LBP during previous pregnancy. The reported prevalence of pregnancy-related PGP was 26.5%. A half reported a limitation of their ability to perform their usual activities for more than 1 day due to PGP. Only fourteen point eight percent of the women had pain most day. Median pain severity (NRS score) was 4 (3;5) visual analogue scale points. PGQ scores was 12 (9.3-17.3).

Variables associated with a higher likelihood of having experienced LBP during the previous 4 weeks were participant's age, more advanced stage of pregnancy, a higher BMI, a lower education, working status and sleep hour per day (Table 3). The multivariate regression analysis showed significant associations with participant's age, lower education, increased BMI (Table 4). The univariate analyses showed a higher likelihood of pregnancy-related LBP in women with increased BMI, working status and sleep hour per day (Table 3). The multivariate regression analysis showed significant associations in women with increased BMI, participant's education, working status and sleep hour per day (Table 4).

Table 1. Characteristics of pregnant women included in the study.

Variables	n	Value	Variables	n	Value
Age (year)	204	28 (25 - 32)	Height (m)	204	1.58 (1.55 - 1.60)
Weight before pregnancy	204	53 (48 - 55)	Body mass index (BMI)	204	24.5 (21.8 - 26.9)
Current weight (kg)	204	60.5 (56 - 67)	Working status	204	
Marital status	204		Currently working		88 (43.1)
Living with husband		200 (98.0)	Not currently working		116 (56.9)
Husband works away from home		2 (1.0)	Reasons for not working	116	
Divorce		2 (1.0)	Sick leave		46 (39.7)
Participant's education	204		Housewife		26 (22.4)
No education		48 (23.5)	Unemployed		34 (29.3)
Primary		46 (22.5)	Disabled		2 (1.7)
Secondary		40 (19.6)	Others		8 (6.9)
High school		36 (17.6)	Sleep hour per day	204	
University		34 (16.7)	< 6 hour		20 (9.8)
Household work	204		6 - 8 hour		154 (75.5)
No		58 (28.4)	> 8 hour		30 (14.7)
Yes		146 (71.6)			
Washing, cleaning, cooking		140 (95.9)			
Child care		54 (37.0))			
Others		4 (2.7)			

OBSTETRICAL HISTORY					
Gestational week	204	20 (9)	Number of previous pregnancies	204	
Number of pregnancies	204	1 (0 - 2)	0 (current pregnancy is the first one)		58 (28.4)
≥ 1 epidural anesthesia	204	8 (3.9)	1 pregnancy		90 (44.1)
≥ 1 previous instrumented delivery	204	14 (6.9)	2 pregnancies		44 (4.9)
≥1 previous cesarean	204	64 (31.4)	3 pregnancies		10 (4.9)
			≥ 4 pregnancies		2 (1.0)
LBP					
LBP during the last 4 week	204	118 (57.8)	NRS score	118	4 (4 - 5)
Limitation of daily activities		60 (50.8)	ODI score	118	10 (4 - 18)
Frequency of pain	118		History of LBP	118	
Some days		96 (81.3)	LBP during a previous pregnancy		52 (44.1)
Most of the days		14 (11.9)	LBP not related to pregnancy		20 (16.9)
Every day		8 (6.8)	LBP during period		54 (42.4)
PGP					
PGP during the last 4 week	204	54 (26.5)	Frequency of pain	54	
Limitation of daily activities	54	26 (48.1)	Some days		40 (74.1)
NRS score	54	4 (3 - 5)	Most of the days		8 (14.8)
PGQ score	54	12 (9.3 - 17.3)	Every day		6 (11.1)

4. DISCUSSION

Pregnancy-related lumbosacral discomfort is a frequent but poorly understood issue [16, 26]. It is a typical pregnancy-related discomfort since at least 50% of pregnant women experience the presence of back pain of varying intensity during pregnancy[27, 28]. Twenty to ninety percent of pregnant women have this symptom, according to researchers who have studied the topic [6, 29]. Inconsistent epidemiological data in this regard may be due to flaws in the definition and classification of low back pain. Furthermore, numerous pain-intensifying factors, the subjectivity of assessment, and a range of pain components (intensity, frequency of pain occurrence, functional limitation, and well-being) influence the final evaluation of pain and inconsistencies between the results of different studies [30, 31].

Mogren and state that such pain usually occurs between 20 and 28 weeks of pregnancy, with a mean gestational age estimated at 22.1 weeks [32]. In our study, the mean age of gestation

Table 2. Comparison of Subjects' Characteristics Depending on Whether They Reported Pain or Not

Variables	LBP			PGP		
	Reported pain (n=118)	Did not pain (n=86)	p	Reported pain (n=54)	Did not pain (n=150)	p
Age (year)	27 (23 - 30)	29 (26 - 34)	0.005	28 (25 - 33)	28 (25 - 32)	0.448
Weight before pregnancy	52 (50 - 55)	53 (48 - 55)	0.349	54 (52 - 56)	51 (48 - 54)	0.007
Body mass index (BMI)	25.9 (23.5 - 27.9)	22.1 (21.3 - 24.4)	< 0.001	26.2 (25.2 - 29.3)	23.4 (21.4 - 26.2)	< 0.001

Participant's education						
No education	37 (31.4)	11 (12.8)	0.002	9 (16.7)	39 (26.0)	0.166
Primary	34 (28.8)	12 (14.0)	0.012	14 (25.9)	32 (21.3)	0.489
Secondary	21 (17.8)	19 (22.1)	0.445	15 (27.8)	25 (16.7)	0.078
High school	16 (13.6)	20 (23.3)	0.073	12 (22.2)	24 (16.0)	0.304
University	10 (8.5)	24 (27.9)	<0.001	4 (7.4)	30 (20.0)	0.033
Working status						
Currently working	42 (35.6)	46 (53.5)	0.011	6 (11.1)	82 (54.7)	< 0.001
Not currently working	76 (64.4)	40 (46.5)		48 (88.9)	68 (45.3)	
Sleep hour per day						
< 6 hour	12 (10.2)	8 (9.3)	0.837	10 (18.5)	10 (6.7)	0.012
6 - 8 hour	94 (79.7)	60 (69.8)	0.105	42 (77.8)	112 (74.7)	0.649
> 8 hour	12 (10.2)	18 (20.9)	0.032	2 (3.7)	28 (18.7)	0.007
OBSTETRICAL HISTORY						
Gestational week, mean (SD)	21 (9)	18 (9)	0.012	22 (9)	19 (9)	0.149
Number of previous pregnancies						
0 (current pregnancy is the first one)	36 (30.5)	22 (25.6)	0.441	16 (29.6)	42 (28.0)	0.820
1 pregnancy	50 (42.4)	40 (46.5)	0.557	18 (33.3)	72 (48.0)	0.063
2 pregnancies	22 (18.6)	22 (25.6)	0.234	16 (29.6)	28 (18.7)	0.093
3 pregnancies	10 (8.5)	0	-	4 (7.4)	6 (4.0)	0.461
≥ 4 pregnancies	0	2 (2.3)	-	0	2 (1.3)	-
≥1 epidural anesthesia	3 (2.5)	5 (5.8)	0.286	0	8 (5.3)	-
≥1 previous instrumented delivery	8 (6.8)	6 (7.0)	0.956	4 (7.4)	10 (6.7)	1.000
≥1 previous cesarean	36 (30.5)	28 (32.6)	0.755	24 (44.4)	40 (26.7)	0.016
LBP						
LBP during the last 4 weeks	118 (100)	-	-	44 (81.5)	74 (49.3)	<0.001
Limitation of daily activities	60 (50.8)	-	-	24 (44.4)	36 (24.0)	0.005
Frequency of pain						
Some days	96 (81.3)	-	-	38 (70.4)	58 (38.7)	<0.001
Most of the days	14 (11.9)	-	-	4 (7.4)	10 (6.7)	1.000
Every day	8 (6.8)	-	-	2 (3.7)	6 (4.0)	1.000
History of LBP						
LBP during a previous pregnancy	42 (35.6)	-	-	24 (44.4)	28 (13.7)	<0.001
LBP not related to pregnancy	14 (11.9)	-	-	6 (11.1)	14 (9.3)	0.706
LBP during period	42 (35.6)	-	-	24 (44.4)	30 (20.0)	<0.001

PGP						
PGP during the last 4 weeks	44 (37.3)	10 (11.6)	<0.001	54 (100)	-	-
Limitation of daily activities	22 (18.6)	4 (4.7)	0.003	26 (48.1)	-	-
Frequency of pain						
Some days	32 (27.1)	8 (9.3)	0.002	40 (74.1)	-	-
Most of the days	8 (6.8)	0	-	8 (14.8)	-	-
Every day	4 (3.4)	2 (2.3)	1.000	6 (11.1)	-	-
NRS score	4 (3 - 4)	4 (3 - 5.8)	0.468	4 (3 - 5)	-	-
PGQ score	12.0 (10.7 - 17.3)	10.7 (6.7 - 15.7)	0.969	12.0 (9.3 - 17.3)	-	-

Table 3. Univariate logistic regression analysis of factors associated with low back pain (LBP) and pelvic girdle pain (PGP)

Variables	Reported pain (n=118)	Did not pain (n=86)	Odds ratio (95% confidence interval)	p	Reported pain (n=54)	Did not pain (n=150)	Odds ratio (95% confidence interval)	p
Age (year), n (%)								
≤ 21	18 (15.3)	6 (7.0)	-	0.013	8 (14.8)	16 (10.7)	-	0.796
22 - 24	16 (13.6)	4 (4.7)	3.2 (1.2 - 8.8)		4 (7.4)	16 (10.7)	1.4 (0.6 - 3.7)	
25 - 27	32 (15.7)	20 (23.3)	4.3 (1.4 - 13.7)		14 (25.9)	38 (25.3)	0.7 (0.2 - 2.3)	
≥ 28	52 (44.1)	56 (65.1)	1.7 (0.9 - 3.4)		28 (51.9)	80 (53.3)	1.1 (0.5 - 2.2)	
Weeks of gestation, n (%)								
1 - 12	25 (21.2)	32 (37.2)	-	0.044	11 (20.4)	46 (30.7)	-	0.356
13 - 24	38 (32.2)	23 (26.7)	0.4 (0.2 - 0.9)		18 (33.3)	43 (28.7)	0.6 (0.3 - 1.3)	
25 - 40	55 (46.6)	31 (36.0)	0.9 (0.5 - 1.8)		25 (46.3)	61 (40.7)	1.0 (0.5 - 2.1)	
Body mass index, n (%)								
< 20	2 (1.9)	8 (10.0))	-	< 0.001	4 (2.0)	16 (7.8)	-	< 0.001
20 - 24	28 (26.9)	52 (65.0)	0.1 (0.01 - 0.77)		6 (11.1)	80 (53.3)	0.1 (0.02 - 0.49)	
25 - 30	68 (65.4)	18 (22.5)	0.2 (0.03 - 0.95)		34 (63.0)	50 (33.3)	0.03 (0.01 - 0.13)	
> 30	6 (5.8)	2 (2.5)	1.3 (0.2 - 6.8)		10 (18.5)	4 (2.7)	0.27 (0.08 - 0.94)	
Participant's education, n (%)								
No education	37 (31.4)	11 (12.8)	-	< 0.001	9 (4.4)	39 (26.0)	-	0.077
Primary	34 (28.8)	12 (14.0)	8.1 (3.0 - 21.9)		14 (25.9)	32 (21.3)	1.7 (0.5 - 6.2)	

Secondary	21 (17.8)	19 (22.1)	6.8 (2.5 - 18.3)		15 (27.8)	25 (16.7)	3.3 (1.0 - 11.1)	
High school	16 (13.6)	20 (23.3)	2.7 (1.0 - 7.0)		12 (33.3)	24 (16.0)	4.5 (1.3 - 15.3)	
University	10 (8.5)	24 (27.9)	1.9 (0.7 - 5.2)		4 (7.4)	30 (20.0)	3.8 (1.1 - 13.1)	
Working status, n (%)								
Not currently working	76 (64.4)	40 (46.5)	-	0.011	48 (88.9)	68 (45.3)	-	<0.001
Currently working	42 (35.6)	46 (53.5)	2.01 (1.2 - 3.7)		6 (11.1)	82 (54.7)	9.6 (3.9 - 23.9)	
Household work, n (%)								
No child care	96 (81.4)	54 (62.8)	-	0.003	18 (70.4)	112 (74.7)	-	0.54
Child care	22 (18.6)	32 (37.2)	2.7 (1.4 - 4.9)		16 (29.6)	38 (25.3)	0.8 (0.4 - 1.6)	
Sleep hour per day, n (%)								
< 6 hour	12 (10.2)	8 (9.3)	-	0.109	10 (18.5)	10 (6.7)	-	0.007
6 - 8 hour	94 (79.7)	60 (69.8)	2.3 (0.7 - 7.1)		42 (77.8)	112 (74.7)	14.0 (2.6 - 75.2)	
> 8 hour	12 (10.2)	18 (20.9)	2.4 (1.1 - 5.2)		2 (3.7)	28 (18.7)	5.3 (1.2 - 23.0)	

Table 4. Multivariate logistic regression analysis of factors associated with low back pain (LBP) and pelvic girdle pain (PGP)

	Low back pain		Pelvic girdle pain	
Variables	**Adjusted Odds ratio (95% confidence interval)**	**p**	**Adjusted Odds ratio (95% confidence interval)**	**p**
Age (year), n (%)				
≤ 21	-	0.031		
22 - 24	2.9 (0.9 - 9.7)			
25 - 27	8.2 (1.7 - 39.1)			
≥ 28	1.7 (0.7 - 4.1)			
Weeks of gestation , n (%)				
1 - 12	-	0.186	-	0.171
13 - 24	0.4 (0.2 - 1.1)		0.8 (2.7 - 2.2)	
25 - 40	0.8 (0.3 - 2.1)		2.3 (0.8 - 6.8)	
Body mass index, n (%)				
< 20	-	< 0.001	-	< 0.001
20 - 24	0.10 (0.01 - 0.72)		0.06 (0.01 - 0.68)	
25 - 30	0.12 (0.02 - 0.66)		0.02 (0.01 - 0.15)	
> 30	1.0 (0.2 - 5.9)		0.30 (0.05 - 1.60)	

Participant's education, n (%)				
No education	-	0.002	-	0.027
Primary	8.5 (2.4 - 30.6)		0.5 (0.1 - 2.8)	
Secondary	6.4 (1.8 - 23.0)		1.7 (0.4 - 8.2)	
High school	1.7 (0.5 - 5.6)		5.8 (1.2 - 28.8)	
University	1.8 (0.5 - 6.4)		2.6 (0.5 - 13.3)	
Sleep hour per day, n (%)				
< 6 hour	-	0.127	-	< 0.001
6 - 8 hour	3.6 (0.7 - 19.1)		76.1 (8.0 - 719.9)	
> 8 hour	2.8 (1.0 - 8.2)		12.3 (1.8 - 82.9)	

Week was 20. PGP typically begins around the end of the first trimester, peaks between 24 and 36 weeks of pregnancy, and reduces naturally within 6 months postpartum; however, in 8% to 10% of women, the pain lingers for 1 to 2 years after birth [33-35]. The incidence of PGP during pregnancy varies between 4% and 76%, based on the criteria employed, which frequently includes LBP. The prevalence ranges from 16% to 25% when characterized as discomfort at the level of the posterior iliac crest and the gluteal fold over the anterior and posterior parts of the bony pelvis [35]. Nevertheless, the precise definition of PGP frequently overlaps with that of LBP, which is commonly employed for all frequency index estimates in the literature [34].

Prevalence rates may also be affected by data collection methods. Typically, data on LBP and PGP are collected by questionnaires [1, 36]. Classification of LBP and PGP should ideally be based on a comprehensive clinical evaluation [3]. Unfortunately, we were unable to conduct clinical examinations on all the patients. We based our classification on a validated body chart by having the ladies indicate where the discomfort was located on their body.

Compared to a recent worldwide survey, the pain intensity of the women in our study was comparable to that of women from the United States, Norway, and Sweden, but lower than that of women from the United Kingdom [1]. Despite observable pain severity, impairment scores were minimal. In Scandinavian countries, the United Kingdom, and the United States, disability rates among pregnant women were significantly higher than in the United States, the United Kingdom, and the United Kingdom [1]. Despite the striking discrepancy between pain intensity and disability, which may be driven by differences in pregnant period among the various study groups of women, this result may be influenced by differences in gestational period. Only 6.8% and 11.1% of our sample had daily LBP and PGP, respectively, although 50% of women reported having to limit daily activities. These rates are lower than those seen in the study by Gutke et al. [1].

Body mass index scores suggest that they may influence lumbar discomfort in pregnant women. The increase in body mass during pregnancy is one of the most significant alterations that influence the musculoskeletal system. In the present study, the average BMI of women who reported LBP and PGP was 21.2 and increased to 24.5 during pregnancy. Mogren and Pohjanen discovered a similar data in their study, in which patients with pain had a BMI of 24.57 before and 30.10 during pregnancy, while women without pain had scores of 23.3 and 28.8, respectively [6]. Other researchers identify body mass, notably significant rise, as a risk factor for back pain during pregnancy [6, 37]. However, several studies have found no correlation between a pregnant woman's body mass and back pain [32, 38].

5. CONCLUSIONS

LBP and PGP are prevalent in pregnant women. Despite moderate pain intensity, the women experienced low disability. Pregnant women with increased BMI, participant's age and education, working status and sleep hour per day were significantly associated with LBP and PGP.

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