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Frequency of LBP in pregnant women affecting activities of daily living

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Abstract

Background: Low Back Pain (LBP) affects many pregnant women. Pain is often associated with varying degrees of functional limitations, causing pregnant women to carry out many everyday activities.

Methodology: A cross-sectional study design was used to collect data with a sample size of 135 pregnant women. Functional status was measured by using the Oswestry Disability Index (ODI). ODI is a 10-item questionnaire, which was developed to identify functional limitations due to LBP. Each item is scored between 0 and 5, thus giving a final score expressed as a percentage. Collected data were analyzed through SPSS version 16.0.

Results: Out of 135 females, 133(98.5%) were with LBP. Among 133 females with LBP, 100(75.2%) have a minimal disability, 30(22.6%) have a moderate disability, and 3(2.3%) females have a severe disability.

Conclusion: LBP is common in pregnant women and causes functional limitations that affect women's daily activities and independence. Mostly women were not aware of proper treatment techniques for LBP. Physiotherapy played a vital role in minimizing LBP and further pregnancy-related complications.

Keywords

Pregnancy, Low Back Pain, Daily Activities, Awareness, Functional Limitations.

Introduction

Low Back Pain is one of the frequent musculoskeletal issues among pregnant women[1]. An approximately 50% of women will experience some sort of backache during their pregnancy[2]. According to many females, lower backache affects their ability to work during pregnancy and compromises daily living activities (ADLs)[3]. In the lumbar region, LBP is regarded to be axial or parasagittal discomfort. The lumbar spine is the region that forms the lordotic curve, and the frequent side of lower backache is the 4th and 5th lumbar segment[4].

The etiology of lower backache in pregnancy is a complex fusion of physiological, hormonal, circulatory, biomechanical, and psychosocial factors. Ligaments and muscles connected to pelvic joints are often extended due to hormonal modifications that occur to accommodate the developing fetus[5]. Some women may gain as much as a quarter of their body weight during pregnancy[6]. The body's center of gravity shifts anteriorly and increases the quantity of stress to the lumbar spine. Postural modifications may occur to balance the anterior transition leading to hyperlordosis and an increase in the spine's natural inward curvature[5]. The risk factors for lower backache in pregnancy may be backache during previous pregnancies, obesity, maternal age, heavy workload, physically challenging work, stress, hypermobility diagnosis, and socioeconomic class[7].

The abdomen muscles are also stretched as a result of the expansion of the uterus, which causes the abdominal muscles to lose their capacity to hold body posture to accommodate the growing uterus, which causes the lower back to sustain most of the weight gain[5]. LBP can be intermittent or constant and localized or radiating. It can also be a sharp or burning sensation or a dull pain in nature. When a muscle or a ligament stabilizes the vertebrae properly, strained LBP can be produced. When the surrounding muscles and ligaments become, the weak spine loses its stability and causes pain. Approximately 50-90% of females developed lower backache symptoms during pregnancy[4].

Analgesics like Non-steroidal anti-inflammatory drugs (NSAIDs) are contraindicated in the 3rd trimester of pregnancy, and opioids are not safe during pregnancy. So during pregnancy, management of LBP by taking medications does not give a satisfactory outcome. However, Non-pharmacological treatments like proper postural education, strengthening and stabilization exercises, soft tissue massage, manipulation techniques, and transcutaneous electrical nerve stimulation TENS are very useful in managing LBP during pregnancy[8]. The onset of pain was most frequent in the 3rd trimester of pregnancy and most common in the lower back region[9].

Young women are much more likely than adolescent and middle-aged women to develop LBP[7]. It is triggered by pelvic relaxation, induced by fetus head pressure on the pelvic bone, muscle weakness, fetus size, and retroverted uterus[11]. This does not include any pathological condition such as disc herniation that occurs during or before pregnancy. Physiotherapy is one of the most important LBP treatments. As a precaution, physiotherapy sessions should be carefully designed and monitored by women's health physiotherapists[4]. Physiotherapists encouraged their patients for LBP prevention through Postural education, aerobic exercises, water exercises, use of stabilization belts, postural pillows, and heating pads[10,11]. Exercises to improve strength, power, endurance, balance, coordination, and mobility have been well known. These are the reasons to prescribe exercises for a backache to decrease pain, decrease mechanical stress on spinal structures, muscle strengthening, improve fitness level, prevent injury, stabilize hypermobile segments, improve posture, and increase mobility[4].

The purpose of this study is to find out the functional limitations which are faced by pregnant females due to their back pain. Therefore, awareness and patient education are essential and guide the females about physiotherapy in pregnancy as well as treatment of LBP and its related complications.

Methodology

It is a cross-sectional study conducted at Dow University of Health Science from July 2019 to February 2020. Data were gathered from Gynae OPD of Dow University of Health Sciences, Ojha Campus. In this study, we performed a survey through the Modified Oswestry Disability LBP questionnaire[12], as stated by the sample size of 135 pregnant females. In this research, our targeted population includes pregnant females with or without LBP. Pregnant females with fractures, infection, trauma, tumours, and having other pathological or cognitive conditions were excluded. This study's purpose was explained to all participants before inclusion, and written informed consent was obtained. Data analysis was performed on SPSS version 16.0, which is parametric. Using Open Epi online Software for sample size calculation, taking prevalence of LBP in pregnant women 78% taking Confidence interval (C.I) 95%, margin of error (d) 7%, the calculated sample size is 135 pregnant women. The duration of the study is about three months from synopsis approval. Mean, and the standard deviation is calculated for age, gravidity, trimester, and disability score. Frequency and percentages are calculated for Occupation, Age categories, trimester categories, and severity of the disability. The comparison was made to assess the severity of disability with age, trimester, and gravidity. A Chi-square test was applied.

Results

The total numbers of participants were 135, with a mean age was 28.24 ± 5.063 years. The 76(56.3%) participants were ≤ 28 years of age, and 59(43.7%) were > 28 years of age. Trimester was 2.58 ± 0.5. The majority of the females were presented with three trimesters 131(97.0%), whereas only 4(3.0%) females were presented with 1 and 2 trimesters. Gravidity 2.32 ± 1.386, and Disability score was 14.71 ± 1.04. Out of 135 females, 133(98.5%) were housewives, and only 2(1.5%) were working women. Furthermore, of the total, 133(98.5%) women had LBP.

Table 1: Descriptive characteristics of the participants

Variables		**(n=135)**
Age (years)		28.24±5.06
Trimester		2.58±0.55
Gravidity		2.32±1.38
Disability Score		14.71±1.04
Occupation	Housewife	133(98.5)
	Working women	2(1.5)
Age Categories	≤ 28 years	76(56.3)
	> 28 years	59(43.7)
Trimester Categories	≤ 1st-2nd	4(3.0)
	3rd	131(97.0)
Frequency of LBP	Yes	133(98.5)
	No	2(1.5)

Values are given as mean ±SD or n(%)
LBP-LBP

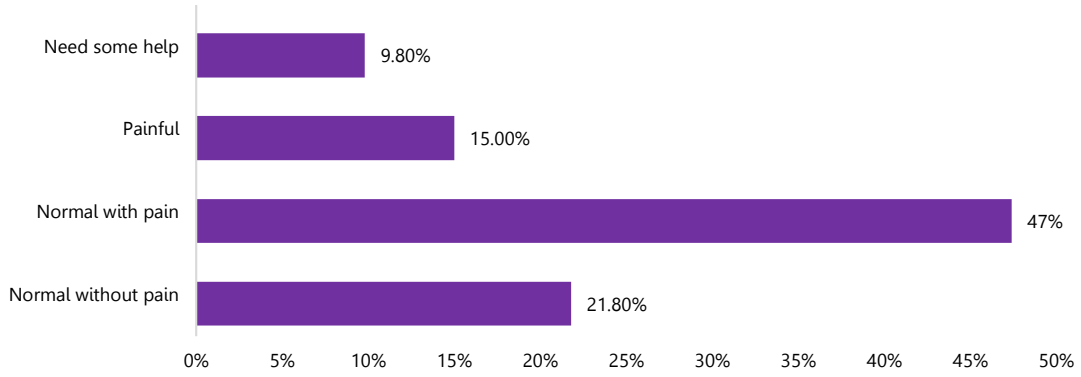

Figure 2: Disability severity among pregnant women with LBP

Among 133 females with LBP, 100(75.2%) have a minimal disability, 30(22.6%) have a moderate disability, and 3(2.3%) females have a severe disability, as shown in Figure 2.

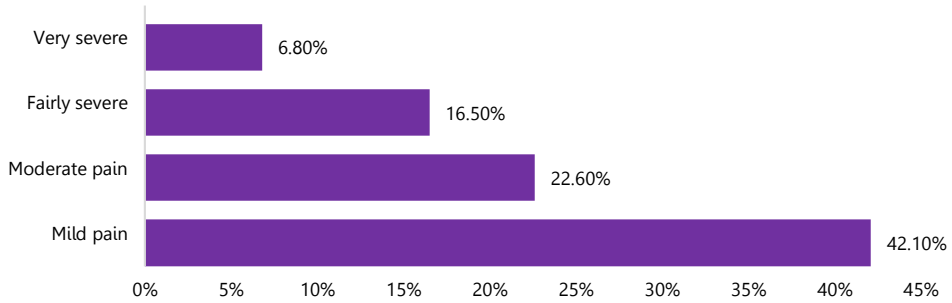

Figure 3: Pain intensity among pregnant women with LBP

Among 133 females with LBP, 56(42.10%) have mild pain, 30(22.6%) have moderate pain, 22(16.5%) have relatively severe pain, and 9(6.8%) have very severe pain, as shown in Figure 3.

LBP poses limitations among pregnant women to perform their activities of daily living. In this study, out of 133 females, 29(21.8%) females can do personal care regular without pain, 63(47.4%) with pain, painful for 20(15.0%) females, 13(9.8%) need some help, 8(6.1%) need help every day. Among133 females, 29(21.8%) can lift without pain, 69(51.9%) can lift with pain, 10(7.5%) can lift conveniently placed weight, 5(3.8%) can lift light to medium weights, and 20(15.0%) cannot lift at all which they were able to do before pregnancy. Among 133 females, 31(23.3%) can walk without pain, 7(53.4 %) pain prevents 1 mile, 9(6.8%) pain prevents ½ mile, 17(12.8%) pain prevents more than 100 yards, and 5(3.8%) cannot walk at all.

Furthermore, among 133 females, 15(11.3%) can sit without pain, 42(31.6%) can sit on their favourite chair, 27(20.3%) pain prevents sitting 1 hour, and in 49(36.9%), pain prevents sitting more than 30 minutes. Among 133 females, 24(18.0%) females can stand without pain, 47(35.3%) with pain, 26(19.5%) pain prevents standing for more than 1 hour, and in 36(27.1%) females pain prevents standing for more than 30 minutes. Among the 133 females with LBP, 53(39.8%), sleep is never disturbed by pain, 67(50.4%) females with LBP reported occasional sleep disturbance as pain woke them up at night, 13(9.8 %) sleep less than 6 hours because of pain, 2(2.0%) pain prevents sleeping at all.

Other areas affected include females 29(21.8%) can travel without pain, 54(40.6%) can travel with pain, 20(15.0%) with bad pain can manage journeys over 1-2 hours, 15(11.3%) pain restricts travelling under 30 minutes and in 11.3 % females, pain prevents from travelling at all. Besides, 57 (42.9%) women had a difficult

sexual experience due to LBP 3(2.3 %) of whom reported very painful sexual activities, 16(12.0 %) women had severely restricted sexual life, and 10(7.5 %) nearly had no sex at all due to LBP. Regarding social participation, 22(16.5 %) women were restricted to their home environment, as shown in Table 2.

Table 2: Affected Activities of daily living among pregnant women with LBP

Activities of daily living		**n(%)**
Personal Care	Normal without pain	29(21.8)
	Normal with pain	63(47.4)
	Painful	20(15.0)
	Need some help	13(9.8)
	Need help everyday	8(6.1)
Lifting	Lift without pain	29(21.8)
	Lift with pain	69(51.9)
	Conveniently placed weights	10(7.5)
	lift light to medium weights	5(3.8)
	I can't lift at all	20(15.0)
Walking	Pain does not prevent	31(23.3)
	Pain does prevent 1 mile	71(53.4)
	Pain prevents 1/2 mile	9(6.8)
	Pain prevents more than 100 yards	17(12.8)
	I can't walk most of the time	5(3.8)
Sitting	Can sit long	15(11.3)
	Can sit long on a favourite chair	42(31.6)
	Pain prevents sitting 1 hour	27(20.3)
	Pain prevents sitting more than 30 min	49(36.9)
Standing	Stand without extra pain	24(18.0)
	Stand with extra pain	47(35.3)
	Pain prevents standing more than 1 hour	26(19.5)
	Pain prevents standing more than 30 min	36(27.1)
Sleeping	Never disturbed	53(39.8)
	Occasionally disturbed	67(50.4)
	Less than equal to 6 hours because of pain	13(9.8)
Travelling	Travel anywhere without pain	29(21.8)
	Travel anywhere with pain	54(40.6)
	Bad pain but manage journeys over 1-2 hours	20(15.0)
	Pain restricts under 30 min	15(11.3)
	Pain prevents from travelling	15(11.3)

A non-significant association of minimal disability was observed with age category (p=0.479), the chronological age of the child (p=0.66), and trimester category (p=0.685).

Discussion

Back pain is common in pregnant ladies and causes functional disabilities, the level of independence. In our study, functional evaluation is measured with the help of the Oswestry disability index. In another study conducted by Afzal et al. in 2018 also used the Oswestry disability index to find the impact of pregnancy-related LBP on ADLs; their results show that out of 200 females, 156(78%) women had LBP and 44(22%) women have not any kind of back pain. In contrast, our result shows that among 135 females, 133(98.5%) women had LBP, and only 2(1.5%) women have not any kind of back pain. The total numbers of participants were 135. This study showed that among 133 females with LBP, 100(75.2%) have a minimal disability, 30(22.6%) have moderate, and 3(2.3%) have a severe disability. Among 133 females with low backache, 56(42.10%) have mild pain, 30(22.6%) have moderate pain, 22 (16.5%) have fairly severe, and 9(6.8%) have very severe pain.

In our study, 133 females 24(18.0%) can stand without pain, 47(35.3%) with pain, 26(19.5%) pain standing for more than 1 hour, and in 36(27.1%) females pain prevents standing for more than 30 minutes. If we compare this result with the study of Afzal et al., conducted in Sargodha, which states that out of 156 ladies, 10.2% could stand without extra pain, 29.3% with the extra pain, 17.2% had pain in 1 hour, 15.9% had pain within 30 minutes, 26.8% had pain within 10 minutes, and 0.6% could not stand.

There is another study conducted in Abbottabad by Khan et al. This study reveals that among n=96 women, 66(68.8%) had lower backache in pregnancy. The frequency of lower backache in pregnancy is very high (68.8%) in Abbottabad city[11]. Their result is similar to the study we have done in our research. Among 135 females, 133(98.5%) women had LBP, which affects their daily living activities.

A cross-sectional research survey was done at Bangladesh University in 2012. The purpose of this study was to know the frequency of pregnancy-related back pain. One hundred pregnant females engage in this research. The incidence of lower backache was 51%[4]. This research also found that lower backache in the second trimester of pregnancy was most common. Our study found that 133(98.5%) women had LBP. The majority of the females were presented in three trimesters. Sencan's research study from August 2011 to September 2014 on the women admitted to a prenatal clinic in Turkey reveals that lower backache frequency in pregnancy was 53.9%, mostly in the 3rd trimester. As compared to the first and second trimester, women with lower backache in the third trimester were more disabled[13]. This study states the same results as our study as in our research, most of the females with back pain were presented in 3rd trimester 131(97.0%) whereas only 4(3.0%) females were presented with 1st to 2nd trimester.

Another international study by Mogren conducted in Northern Sweden showed that the prevalence of LBP in pregnant women was 72%, which concludes that most pregnant women experience LBP that is 40%[7]. If we compare the Mogren study with our study, they state similar results as our research shows that most pregnant women have LBP. The study's limitations include that it was conducted only in DUHS gynae OPD, and there were only 135 participants who are very little to represent the whole population of pregnant females. The small number of samples is not enough to generalize the results. Some patients were hesitant and non-cooperative to share their information with the interviewer researcher.

LBP in pregnant women will be an upcoming burden in Pakistan like other countries; that's why this area needs to be acknowledged by research-based evidence of physiotherapy. Recently lots of people are working on disability that includes the services of physiotherapy in different aspects. It is also important to research evidence on the frequency of LBP in pregnant women to provide awareness to our society. The recommendations for further studies are to include pregnant women with LBP or at least those who are receiving any therapy or medications to prevent LBP. This might also control the self-reported responses. It is also

recommended to involve the clinical diagnostic examinations also be conducted for the women with LBP to evaluate the frequency of women having LBP and take a large sample size of women with LBP from different hospitals of Pakistan. Further researchers working on the frequency of LBP in pregnant women should take a proper initiative to promote physiotherapy services for pregnancy induce LBP.

Conclusion

It was found that the frequency of LBP among pregnant women was 98.5%. It mostly occurs in females less than 28 years of age. The housewives were more prone to develop LBP during pregnancy. Among 133 females with LBP, 100(75.2%) have a minimal disability, 30(22.6%) have a moderate disability, and 3(2.3%) females have a severe disability. Among 133 females with LBP, 56(42.10%) have mild pain, 30(22.6%) have moderate pain, 22(16.5%) have fairly severe pain, and 9(6.8%) have very severe pain. In this study, it was found that none of the participants received any physiotherapy treatment for their pregnancy-related LBP, and they didn't know the role of physiotherapy for this condition. If the general people are aware of the physiotherapy role, more people will receive physiotherapy during pregnancy for LBP. It will also help other health care professionals understand the importance of physiotherapy during pregnancy and ensure a good referral system.

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