

Common Management Trends of Physiotherapy in Pregnancy-Related Low Back Pain

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Abstract

Background:

Pregnancy-related low back pain (LBP) is very common. Evidence form a standard eviue that support the exercise supervised by the physiotherapist, strengthening exercise, and massage. Although little is known about the care received by the women with pregnancy-related low back pain in Lahore.

Objective:

The objective of this study was to determine the common management trends of physiotherapy in pregnancy-related low back pain.

Method and materials:

A descriptive cross-sectional study was conducted in Lahore on a sample of 204 physiotherapists. Physiotherapists with experience of treating women having pregnancy-related low back pain. Non-probability convenient sampling technique was used to collect data from physiotherapists. Data was analyzed by using SPSS version v20.

Results:

The results showed that a range of management strategies are used to treat the pregnancy-related low back pain. supervised exercise (60.8%), strengthening exercises (60.3%) and massage (44.6%).

Conclusion:

The most common management trends of physiotherapy in pregnancy-related low back pain were supervised exercises 124(60.8%), strengthening exercises 123(60.3%), and massage 91(44.6%). TENS and water exercises were least common tends of management among the participants.

Key Words: pregnancy; physiotherapy; low back pain; massage; modalities

Introduction

The parasagittal or straight-line discomfort in the lower back area is also called as low back pain (LBP). LBP mostly occurs due to hormonal, musculoskeletal, circulatory or a combination of mechanical and psychosocial causes. Among pregnant women Low back pain is the most common complaint and to increase as pregnancy advances(1). in some patients, the pain spread out into the hip, foot and leg Many women's pain can become extreme and that it interferes with the activity of daily living such as sick leave and sleep disturbance(2). The causes of pregnancy-related LBP is not well defined. The single most common cause of pregnancy-related LBP is torn or pulled ligaments or muscle. In the pelvic or lower back region pain and disability originates during pregnancy and puerperium.

From a biomechanical point of view due to an increase in breast and abdomen size the center of gravity moves forwards which shows to postural changes such as the decrease in knee hyperextension, plantar flexion, and pelvic anteversion. These changes provoke stress and progressive tension in the paraspinal muscle and the lumbar lordosis region. The impingement of the large and prominent vessels by the gravid uterus decrease the spinal/backbone blood flow and may cause (LBP). Mostly in the last trimester of pregnancy water retention is measured by progesterone stimulation and ligamentous flexibility may also be seen by relaxing secreted from the corpus leutum. Due to unstable of the lumbar spine and hip joint, there is a more chance of



susceptible to increase stress and low back pain. (1)

The worldwide ratio is observed to range from 24% to 90% (LBP) occurs during pregnancy. Although more than 50% of all pregnant women complain LBP during pregnancy. Some of the studies from 1980 and 1990 about half of the interviewed pregnant women reported lower back region pain at some time during pregnancies. Those women who are smoked and had a strenuous job activity and a previous report of low back pain was at risk of getting (LBP)(3). The actual ratio of low back pain is depending on a different study, definition, and diagnostic criteria. Most of the study shows that non-pregnant healthy women have a good quality of life as compared to a pregnant women (4).

Some of the risk factors have been reported which are a link to LBP during pregnancy including (LBP) during the menstrual period and a past history of (LBP). According to the age group, there is a greater risk of developing pregnancy-related LBP in the younger patient. Due to increase the weight of a patient with (LBP) during pregnancy increase spinal flexibility and instability of sacroiliac joint or aggravate of (LBP)(1). According to most of the UK studies, there is a lack of specific guidance and knowledge among the pregnant women and staff which is managing low back pain(4).

A study was conducted in Australia which reports that mainly 70% of women represent LBP in maternity health care but treatment is given to only 25% to 30% women(5). Sometimes it is also considered that low back pain is the frequent discomfort of pregnancy and it relates to health care professional and the treatment which will be given to pregnant lady may cause harmful effect on fetal development. So, the most common suggestion which is given to them is to manage their problem themselves by changing body position or rest (6). Sometimes a pregnant lady is referred to physiotherapy treatment for physical exercises e.g. Pelvic floor exercise strengthening exercise, supportive pillow, and home plan program (7). A recent study indicates less evidence about the benefits of exercise in reducing LBP and disability. However, when exercise combines with acupuncture it shows more benefit to decrease the low back pain despite the presence of this evidence some of the studies suggested that acupuncture may not be allowed to consider physiotherapy services(4).

No previous study has been found to be conducted in the past related to find the effectiveness or use of physiotherapist treatment in low back pain. The objective of this study is to find out the prevalence of common management trends of physiotherapy in pregnancy-related low back pain and this study will help to fill up the gap present in already available previous literature.

Literature Review

A cross-sectional study was conducted by DR Jenny King (2010). The main objective of this study is to observe out the prevalence of the pregnancy-related (LBP) and associated pain and disability experienced by a sample of Australian women. They concluded that pregnancy-related (LBP) is highly prevalent and expected during pregnancy. (5)

A Bishop, M. A Holden et al was conducted a cross-sectional study of physiotherapists who care for a lady patient with (PLPP) in 2015. The objective or aim of this study is to observe the standard care and current treatment of pregnancy-related (LBP) by UK physiotherapists. In the research, they concluded that multi-model treatment as usual and the most frequently used management for low back patients is exercise. However, acupuncture for this patient group is often less used. (4)

Tania Gardner et al (2017) concluded a systematic study with data from quantitative and qualitative studies. The main purpose of this study is to modify the what impacts the physiotherapist's faith and attitudes about (CLPB) on the base of clinical management. It was reported that there is a strong association between treatment orientation and clinical skills of both qualitative and quantitative study (8)

A randomized control trials study was conducted in (2013) by SARAH D Liddle et al. The objective of this study is to update and ability to evaluate the effects of any intervention used to inhibit and treatment (LBP) or pelvic pain during pregnancy. This study proves that any exercise that may reduce (PLBP) is a low quality and craniosacral therapy improve the pregnancy-related low back pain. (9)

In 2008 a study was conducted by H Elden et al on the treatments of the pelvic girdle (LBP) and measure acupuncture or stabilizing exercise on the pregnant lady. This study proves that acupuncture administrated that is maybe considered strongest which lead to less adverse problems to mother and neonates (10)

Kaj Wed Enberg et al (2000) a study was conducted on sixty pregnant women who were allotted to observe the effects of acupuncture or physiotherapy in the management of LBP. In their research, they concluded that acupuncture can relieve pain in low back pain during pregnancy and acupuncture treatment is better than physiotherapy. (11)

Annette bishop, Nadine et al were conducted a cross-sectional study of GPs (n=2000) and PTs (n=2000) in 2017. The purpose of this study was to determine the beliefs, attitude and reported behavior to the general practitioner and physiotherapists in the clinic about the LBP and associations between us. Further studies are needed to investigate and modify the health care practitioner factor that can lead to an improvement in patients' outcomes. (12)

In (2004) Christina, Olsson et al conducted a study to determine the effects of back pain, quality of life, and physical activity in late pregnancy. 160 women attended two different midwife receptions during the 34th and 37th week of pregnancy. It was reported in this study that pregnant women have low (QOL) and physical activity as compared to the healthy non-pregnant women. (3)

Objective

The objective of this study was to determine the common management trends of physiotherapy in pregnancy-related low back pain.

Rationale



This study will help to determine the common management trends of physiotherapy in pregnancy-related low back pain. This idea of finding out the common management trends of pregnancy related LBP can encourage the researchers to find out the possible validated reasons of less utilization of their services. As a results different options can also be compared to find out the best possible LBP managements options.

Operational Definition

A self-made questionnaire was used to find the common management trends of physiotherapy in pregnancy-related LBP. It consisted of 12 questions and its validity was 0.88.(4)

Materials and Methods

Study design

A descriptive cross-sectional survey was conducted

Setting

All physiotherapists working in different private and government hospital and clinical setups of Lahore.

Study population

The study population was physiotherapists of Lahore.

Duration of study

The study was completed in 6 months.

Sample size

The sample size was calculated through the following formula and parameters

$$\text{Sample size} = \frac{Z_{1-\alpha/2}^2 P(1-P)}{d^2}$$

Here

$Z_{1-\alpha/2}$ = Is standard normal variate (at 5% type I error ($P < 0.05$) it is 1.96 and at 1% type I error ($P < 0.01$) it is 2.58). As in majority of studies P values are considered significant below 0.05 hence 1.96 is used in formula.

p = Expected proportion in population based on previous studies or pilot studies.

d = Absolute error or precision - Has to be decided by researcher.

Z	1.96
P	0.499
1-p	0.501
D	0.05

Sample size was calculated to be **204**.

Sample technique

Non-probability convenient sampling technique was used to collect data from physiotherapists.

Eligibility criteria

Inclusion criteria

- Specialist physiotherapists of Gynecology, with 2 years experience.
- Specialist physiotherapists of musculoskeletal disorder with 2 years experience.
- Physiotherapists with a special interest in women health.
- Those physiotherapists who have experience of treating women with pregnancy-related low back pain
- General clinical practitioner

Exclusion criteria

- Physiotherapists not have any practice or experience in gynecological and musculoskeletal treatment.

Data collection procedure

Physiotherapists were selected according to the inclusion criteria. Before the collection of data, informed consent was taken. The self-made questionnaire was used to collect data from physiotherapists. The questionnaires were distributed by email or a visit to different setups of physiotherapists.

Ethical consideration

A completed consent form was signed by participants according to their terms and conditions and data was kept private. The ethical approval for the study was provided by the medical department and the ethical committee of Azra Naheed Medical College (ANMC). The data collection safety was ensured. During the research, each and every ethical issue was followed. It was ensured that this study will not affect the ethical values of subjects, and follow all the ethics of the medical field.

Statistical procedure

Data was analyzed by using SPSS version 20. Mean and standard deviation was used for quantitative variables and frequency distribution was used for categorical variables. The qualitative data was presented in the form of Bar charts and percentages

Results

Socio-demographic profile



Variable	N	Maximum	Minimum	Mean	Standard Deviation
Age	204	45	25	32.53	4.54

Gender	Frequency	Percentage (%)
Male	96	47.1
Female	108	52.9
Total	204	100%

A total of 204 physiotherapists participated in the study. Out of total 96 were males and 108 were females. The mean age of participants was 32.53±4.54.

Hospital settings:

Hospital	Frequency n=204	Percent (%)
Akram Medical Center	7	3.4
Al Mustafa Trust Center	4	2.0
Al-Noor-clinic	1	0.5
Bahria International Hospital	4	2.0
Camtrh	9	4.4
Capital International Hospital	1	0.5
Cmathr	3	1.5
Family Hospital	4	2.0
Fatima Memorial Hospital	13	6.4
Ghurki Hospital	7	3.4
Gulab Devi Hospital	11	5.4
Hameed Lateef Hospital	9	4.4
Hamza Hospital	12	5.9
Hassan Medical Center	1	0.5
Horizon Hospital Lahore	9	4.4
Ittefaq Hospital	15	7.4
Lateef Hospital	1	0.5
Nasir Hospital	1	0.5
National Hospital	1	0.5
Noor Zainab Welfare	6	2.9
Rasheed Hospital	7	3.4
Rehab Care	1	0.5
Rehab physio And Poly Clinic	1	0.5
Shalimar Hospital	13	6.4
Sharif Medical City Hospital	5	2.5
Social Security Hospital	9	4.4
Teaching And Research Hospital Uol	49	24.0

Table 1 Hospital

Variables related physiotherapist and patients

Variable	Frequency N=204	Percentage %
Have you received any specific postgraduate training in the management of back pain in pregnancy?	191	93.6%
Have you received any specific postgraduate training in the management of general low back pain?	201	98.5%
How frequently do you see a pregnant women with back pain?	Frequently; at most 1 in the last 6 month	1 .5%
	Somewhat frequently; between 2 to 5 in the last 6 months	21 10.3%
	Frequently; at least 1 per month	30 14.7%
	Very frequently; at last 1 per week	152 74.5%
Have you received any specific postgraduate training in the field of woman health?	Gynecology	29 14.2%
	Obstetrics	0 0.0%
	Musculoskeletal	136 66.7%
	Cardiopulmonary	3 1.5%
	Neurology	35 17.2%
	Sports	1 .5%
	Geriatrics	0 0.0%
Under what circumstances do you see a pregnant women with low back pain?	Pediatrics	0 0.0%
	They are referred from their midwife to me	1 .5%
	They are referred from their GP to me	5 2.5%
	They are referred from the obstetrician to me	0 0.0%
	They are referred from other physiotherapy colleagues to me	1 .5%
How many times would you typically see this patient including both assessment and treatment during the session?	They self-refer directly to me	197 96.6%
	Once	2 1.0%
	Twice	20 9.8%
	3-4 times	105 51.5%
	5-6 times	43 21.1%
	7-8 times	34 16.7%
Over how long (in weeks) would you typically see this patient?	9-10 times	0 0.0%
	More than 10 times	0 0.0%
	1-2 weeks	2 1.0%
	3-4 weeks	38 18.6%
	5-6 weeks	57 27.9%
What would be your typical episode of care for this patient?	7-8 weeks	85 41.7%
	9-10 weeks	22 10.8%
	more than 10 weeks	0 0.0%
It would usually stop the following treatment and a referred would be required for further treatment.	4	2.0%
	It would usually be left open for the duration of the pregnancy.	54 26.6%
	It would be left open for a defined period after the end of the treatment (e.g. 4weeks).	145 71.4%

Table 2 Variables related to physiotherapist and patients



Management trends of physiotherapy

COMMON MANAGEMENT TRENDS OF PHYSIOTHERAPY IN PREGNANCY RELATED LOW BACK PAIN	Yes	No
Patient education	26(12.7%)	178(87.3%)
Exercise to try at home/ a home exercise program	4(2%)	200(98%)
Exercise supervised by a physiotherapist	124(60.8%)	80(39.2%)
Strengthening exercise	123(60.3%)	81(39.7%)
Postural control exercises	16(7.8%)	188(92.2%)
Pelvic floor Exercise	145(71.1%)	59(28.9%)
Repeated directional exercise	5(2.5%)	199(97.5%)
exercise in water	3(1.5%)	201(98.5%)
Relaxation technique	21(10.3%)	183(89.7%)
Prescribed periods of bed rest	5(2.5%)	199(97.5%)
Supportive belts	0(0%)	204(100%)
Supportive pillows	4(2%)	200(98%)
Heat therapy	5(2.5%)	199(97.5%)
Manual therapy	22(10.8%)	182(89.2%)
Cold therapy	7(3.4%)	197(96.6%)
Acupuncture	1(0.5%)	203(99.5%)
Massage	91(44.6%)	113(55.4%)
Tens	0(0%)	204(100%)
Other electrotherapy	3(1.5%)	201(98.5%)

Table 3 Management trends of physiotherapy

A total of 204 patients were asked about common management trends of physiotherapy in pregnancy-related LBP. 178(87.3%) participants reported that they do Patient education, 200(98%) participants reported that they do Exercise to try at home/ a home exercise program, 80(39.2%) participants reported that they do Exercise supervised by a physiotherapist, 81(39.7%) participants reported that they do Strengthening exercise, 188(92.2%) participants reported that they do Postural control exercises, 59(28.9%) participants reported that they do Pelvic floor Exercise, 199(97.5%) participants reported that they do Repeated directional exercise, 201(98.5%) participants reported that they do exercise in water, 183(89.7%) participants reported that they do Relaxation technique, 199(97.5%) participants reported that they do Prescribed periods of bed rest, 204(100%) participants reported that they do Supportive belts, 200(98%) participants reported that they do Supportive pillows, 199(97.5%) participants reported that they do Heat therapy, 182(89.2%) participants reported that they do Manual therapy, 197(96.6%) participants reported that they do Cold therapy, 203(99.5%) participants reported that they do Acupuncture, 113(55.4%) participants reported that they do Massage, 204(100%) participants reported that they do Tens, 201(98.5%) participants reported that they do Another electrotherapy.

Discussion

Throughout the pregnancy, women undergo physiological changes which are caused by anatomical and functional needs. Physiological changes affect the musculoskeletal system and usually provoke pain, including (LBP). (1)

This study is the first study to be conducted in Lahore regarding common management trends of physiotherapy in pregnancy-

related low back pain. The purpose of this study is to find out the common management trends of physiotherapy in pregnancy-related (LBP).

As the current results showed that the most common management trends of physiotherapy in pregnancy-related low back pain is exercise-based approaches

As the current results show that exercise supervised by a physiotherapist (60.8%) followed by pelvic floor exercise are most commonly used to relieve the low back pain on pregnant women. these results are similar to a recent study done by A.Bishop and A.Holden which described that the exercise supervised by the physiotherapist to relieve (LBP) can be many like acupuncture technique but that also showed that pelvic floor exercise is more better than this approach (13). The key point of the study is that there are much other research articles that supports the strengthening exercise are more pain-relieving than acupuncture. (4)

Current results showed that strengthening exercise (60.3%) are more effective to relieve pain in pregnancy-related low back pain and these results are not similar to the recent study done by the KAJ WEDENBERG et al which shows that the acupuncture technique will be better effective for females who have pregnancy-related low back pain. Because it will be better in sense of time consumption. It may take very little time as compare to the strengthening exercise to relieve time (14). According to current study, the key point is strengthening exercise are more effective to relieve pain because physiotherapy was thought to be a rehabilitate by increasing muscular strength, power, balance coordination to compensate the disability caused by instability. (11)



The results of this study showed that massage almost (44.6%) is commonly used to reduce pain and this can be a good approach for the pregnancy-related (LBP). And these results are similar to the previous study done by the J Raisler which shows that massage is better to relieve pain during pregnancy as compared to the stretching exercise. Because stretching exercise can cause injury. The key point of the study is that there are many other articles and researches that support massage therapy. Because many women ask whether massage therapy is a safe way to relieve the physical and mental stressors and also provides many other benefits like better sleep, improve relaxation, and including a sense of wellness (15). And ice massage is more effective to reduce pain without serious side effects. (16)

The results of the concerned study showed that cold therapy is commonly used to relieve pain during pregnancy for the (LBP). This study is similar to the previous study done by the Penny Simkin which shows that cold therapy is common and effective for low back pain during pregnancy and low-cost method to relieve pain that can be initiated by nurses, midwives, or physicians. The key point of the study is that patients are satisfied with the cold therapy treatment and it also inhibits and reduces the pregnant women's negative reaction to the pain. (17)

Results of the current study showed that transcutaneous electrical nerve stimulation TENS was the least commonly used in the management of pregnancy-related low back pain. And this study is similar to the previous research and article were done by the Stéphane Poitras which states that TENS modality can be used as treatment protocol which is effective to reduce pain during pregnancy but less commonly used during pregnancy to reduce pain as compared to core stability exercise (18). The key point of this study is that TENS is contraindicated during pregnancy if applied to the abdomen area it can affect the fetus. (19)

The current result shows that water exercises are less common for the management of (LBP) during pregnancy. And this study is similar to the recent study of M Kihlstrand which describes that water exercises are less commonly used for the management of low back pain. But in other countries like Sweden, most of the women offered traditional maternity care gymnastics and water exercises are recommended as a method to relieve LBP during pregnancy. (20)

Conclusion

The most common management trends of physiotherapy in pregnancy-related low back pain were exercise supervised by a physiotherapist 124(60.8%), strengthening exercises 123(60.3%), pelvic floor exercise 145(71.1%) and massage 91(44.6%). TENS and water exercises were least common trends of management among the participants.

Limitations and Recommendations

Limitations

These are the limitations which can affect the study.

- 1 Short time duration
- 2 Limited resources
- 3 Lack of prior research studies on the topic

- 4 The study only focused on the physiotherapist of Lahore.
- 5 Lack of available and reliable data

Recommendations

Future researches can be done like a comparison study between different exercise and modalities to evaluate the better results in pregnancy-related low back pain. And more researches can be conducted with a large sample size. As a result different options can also be compared to find out the best possible LBP managements options.

Declaration

It is declared that no funding taken for this study. There was no ethical issue. Participants identity secured throughout the study.

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