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RESEARCH ARTICLE

SPECTRUM OF MUSCULOSKELETAL DISCOMFORTS IN PREGNANT WOMEN AND IMPACT OF ANTENATALEXERCISES OR POSTURAL CARE ON THE STATUS OF RELIEF: A SYSTEMATIC REVIEW STUDY

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Abstract

Pregnancy is a normal physical state of women's life when they carried a 9 month developmental stages of the foetus. On these durations some pregnancy induced changes leads normal signs naturally but there is an increased risk of musculoskeletal pain or discomforts associated with increase of uterine size and mental stress of pregnant women, needed non-medicines approached like antenatal physiotherapy care. These possible pain or discomforts can make difficult to carry the pregnancy may leadsome complications. Various research studies have been pointed out these problems of pregnant women and found out the triggers. Some studies show the spectrums of these musculoskeletal problems during pregnancy period. Various case studies are assured to theparticular physiotherapy techniques as antenatal exercises have good impact on relief of respective Musculo-skeletalpain. Various researches have also covered some other aspects of Musculo-skeletal problems during pregnancies. In thepresent study an attempt has been made to comprehensive analysis of these review studies to identify the most common musculoskeletal problems in different stages of pregnancy and efficacy of physiotherapy techniques and antenatal exercises to overcome the problem.It was found in the spectrum analysis that most of the women (68.33 %) faced this problem during their pregnancy. On the analysis of most commonmusculoskeletal problem, the mean percent of review's reveals showed that the most of the women found to be in muscle cramps and pain in neck and shoulder during I trimester whereas maximum women had low back pain (42.87 %) and pelvic girdle pain (11.65 %) on II and IIItrimesters respectively. The satisfactory impacts of antenatal exercises were observed in different musculoskeletal pain by different techniques of Physiotherapy.These results can utilize to make suggestions and recommendations foradoption of suitable physiotherapy techniques in pregnancy to avoid the problem.

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Introduction:-

Pregnancy-induced hormonal, biochemical, vesicular and physiological changes are increase the risk of musculoskeletal problems in pregnancy such as pain in hand–wrist, elbow, shoulder, neck, back, low back, hip, knee and ankle–foot in a diagram of the human body. Stress due to developing foetus, on the axial skeleton, pelvic girdle, and genitaltract may lead to acute disorders, including nonspecific pain, neurologic compression, joint disruption, and septic arthritis in pregnancy. According to **Sabino J, Grauer JN (2008),**the low back pain is a common problem in pregnancy. The pain is episodic in nature, is usually aggravated by hard work or stress and is worse at night.A woman's body undergoes various changes during pregnancy which include weight gain, changes in posture, and joint and ligament laxity along with changes in musculotendinous strength. The diagnosis is using ultrasonography.

Antenatal care refers to the care that is given to an expected mother from time of conception is confirmed until the beginning of labor. The goals of antenatal care are to reduce maternal and perinatal mortality andmorbidity rates.The antenatal exercises are most required package to provide relief it includesbridging, wall push-up, kegal, clamshell, stretching and strengthening of abdomen & trunk, squatting, breathing etc.Posture is important to relief the muscles and spine stiffness during pregnancy.The efficacy of these antenatal exercises and postural care on relief and improvement of musculoskeletal discomforts is an area of research interest as very few attempts were obtained in this aspect.

The present study has been able to represent the actual scenario of the musculoskeletal discomforts faced by pregnant women during pregnancy. The attempt is based on the review of literatures, aimed at to compile the reveals of these studies and utilise it to make suggestions for physiotherapists and promote them to generate the easy going techniques of physiotherapy as accordance to type and intensity of the musculoskeletal discomforts faced by pregnant women.

Methodology:-

A precise methodology was adopted to achieve the objectives of this systematic review study. The literatures were collected from different journals of physiotherapy and other medical sciences available in e-libraries and research articles on the following aspects as the research objectives:

1. Research studies on spectrum of musculoskeletal pain or discomforts during pregnancy
2. Type of musculoskeletal problem prevalent in particular trimester of pregnancy
3. The intensityand severity of musculoskeletal problem faced by pregnant women.
4. Assessment of efficiency and impact of different techniques of physiotherapies to relief as in antenatal exercises and postural care package.

After collection of minimum 20 review articles in each aspect, the reveals of studies were compiled then a comprehensiveanalysis was made to reveals the review based results finally. The studies showed their reveals on percentage, here the mean of these mean's percentage were found statistically and used in ranking of prevalence.

Results and Discussion:-

After the analysis of reviews data the results have been interpreted in its presentation. The revealed results have been presented on the selected aspects:

Spectrum of musculoskeletal pain or discomforts during pregnancy:
The compile reveals of review studies has been provided the information that presented in table no. 1.

The prevalence scenario:
The table 1 (a) shows the reveals of review studies which have been done on primiparous pregnant women of different trimester and women recently got postpartum in hospitals. It was observed that total of mean percentages 68.33% women experienced the musculoskeletal pains, cramps or discomforts during pregnancy. Most of the women have been experienced it on III trimester of pregnancy got 1st rank whereas II and I trimester got 2and & 3rd rank respectively.

Interpretation:Adinma JIB, et al. (2018), were concluded from research study that the spectrum of musculoskeletal discomfort among the pregnant women is very vast. **Robinson HS, et al. (2006)** were observed that

therisk factors include increased parity, previous musculoskeletal pain, emotional stress, obesity, young maternal age, low educational level, early menarche, physically demanding work, and caesarean pregnancy.

Table 1(a):- Musculoskeletal pain experienced by pregnant women during pregnancy.

Status of Musculoskeletal discomforts and pain	Stages of pregnancy			
	I trimester	II trimester	III trimester	Total (%)
Experienced (Mean %)	13.22	26.36	28.75	68.33
Rank	3rd	2nd	1st	-

The type of most common musculoskeletaldiscomforts:
It showed in table no. 1 (b) thatmaximum pregnant women (42.67 %) were experiencing low back pain (LBP), got 1st rank; back pain has 2and rank with 43.67%; pelvic girdle painin 3rd rank; Calf and thigh muscle cramps got 4th rank; Hip joint pain in 5th rank;Neck and shoulder pain in 6th rank, other pain and discomforts such as elbow pain, knee, ankle–foot pain etc. show in 7th rank and hand–wrist was found to be in 8th rank. On whole, it was found that most of the women faced these types of musculoskeletal pain on III trimester of pregnancy with LBP in maximum.

Interpretation: According to **Sabino J, Grauer JN (2008),** the low back pain is a common problem in pregnancy. It is defined as pain localized below the line of the twelfth rib and above the inferior gluteal folds. It could present as axial or parasagittal discomfort in the lower back region. It is a common musculoskeletal discomfort and may be began due to a combination of mechanical, circulatory, hormonal, and psychosocial factors. The statement of physiotherapist is proved in the finding's analysis in this review study.

Table 1(b):-Spectrum of musculoskeletal discomforts in different stages of pregnancy (as mean of percentages of prevalence).

Musculoskeletal discomforts and pain	Stages of pregnancy				Rank
	I trimester	II trimester	III trimester	Total (%)	
Low back pain (Mean %)	3.3	18.64	20.93	42.87	1
Back pain (Mean %)	0	11.38	28.63	40.01	2
Handwrist(Mean %)	4.84	0	0	4.84	8
Neck and shoulder pain (Mean %)	3.33	7.45	0	10.78	6
Hip joint pain (Mean %)	0	2.49	9.16	11.65	5
Pelvic girdle pain (Mean %)	0	0	28.45	28.45	3
Calf and thigh muscle cramps (Mean %)	14 42	3.33	2.66	20.87	4
Other pain and cramps (Mean %)	3.6	3.25	3.12	9.97	7
Total of discomforts & pain					

The intensity and severity of musculoskeletal problem faced by pregnant women:
It was investigated in most of the studies by using Numeric Rating Scale (NRC). VAS scale and some other scales can also estimate the intensity of pain. Table no. 2 shows that most of the women (18.93 %) of I trimester were experienced mild or low pain intensity, moderate in II but it reaches highest pain intensity in III trimester. Maximum pain intensity was moderate category analyzed in II trimester i.e., 49.56 percent.

Interpretation:
AnnelieGutke et al. (2018) were found to beseverity and impact differed significantly across countries ($p < 0.001$), with U.K. women reporting the highest pain intensity (Numeric Rating Scale [NRS] 7/10).

Table 2:- Status of musculoskeletal pain intensity experienced by pregnant women.

Intensity of Musculoskeletal discomforts and pain	Stages of pregnancy			
	I trimester	II trimester	III trimester	Total (%)

Mild(M%)	18.93	3.33	0	22.26
Moderate (M%)	17.89	31.66	0	49.55
Sever (highest pain intensity) (M %)	0	0	33.3	33.3

Impact of antenatal exercises and postural care on musculoskeletal discomforts during pregnancy:
Many case studies have been carried out on the impact of antenatal exercises and postural care of pregnant women but very few has presented statistically. There are some studies concluded reviews presentedhere as following manner:

Sathya Prabha et al. (Feb 01, 2019) had carried out the study on the Effect of antenatal exercise programme and Education on health-related quality of life. The 12-week antenatal exercise programme brought about statistically significant changes in the Physical Component Mental Component Summary and several of its, domains. Hence, the present study suggests the comprehensive, structured antenatal exercise and education programme should include in routine antenatal care.

Anca Gaston & Anita Cramp (Feb, 2019) administered the Exercise during pregnancy in their research study and concluded that the positive physical and mental health outcomes associated with participating in regular exercise, promoting exercise during pregnancy needs to remain a crucial objective among health promoters. However, even among the general population, engaging in regular exercise is a complex and challenging behavior. Being pregnant presents further challenges to an already difficult behavior.

Nadine Foster,etal.(2016) The study of Current Management of pregnancy-related low back pain net provides data from a national sample of UK physiotherapists about their reported management of pregnancy-related LBP. A wide range of management options was reported for women with pregnancy-related LBP, predominantly based on exercise treatment approaches and, to a lesser extent, acupuncture. Multimodal care was commonly reported, consisting of various advice and treatment components.

Wojciech M. Glinkowski, et al. (August 2016) has been made an attempt on Posture and low back pain during pregnancy. This study confirmed that difficulties in sitting and standing are significant in the third trimester of pregnancy-These daily activity impairments prevalent in pregnant women may increase disability due to back pain. Some previous spinal symptoms may worsen disability scores among pregnant woman.

Heidi Prather et al. (Nov 2012) Concluded that Benefits of Exercise During Pregnancy. There is considerable evidence that exercise during healthy pregnancy has positive effects on the mother and fetus. Further-more, there is some evidence that suggests positive effects on the child. Women, therefore, should be encouraged to initiate or continue exercise during a healthy pregnancy. Further research is required to assess the short- and long-term effects of weight management on maternal and infant health, the psychosocial, importance of exercise during pregnancy, and the effect of exercise during pregnancy on the neurodevelopment of children.

These reviews have compressed the literature on exercise during pregnancy and presents some suggestions about when and how interventionists might best intervene to enhance pregnant women's exercise. Albeit, there are many opportunities for future research and continuous efforts to study exercise during pregnancy will increase our knowledge about the determinants and outcomes of exercise participation and improve our ability to effectively intervene.

Conclusion:-

The present attempt of review study has been concluded that status of musculoskeletal discomforts and pain pregnant women with the reporting of impact of antenatal exercises and postural care and treatment on the relief status. Most of the women were faced this problem during different trimester of pregnancy. Maximum women experienced this problem during III trimester of pregnancy. The pain intensity was gradually increases from I to III trimester of pregnancy as low, medium and highest pain intensity, therefore a constant antenatal exercises and postural care package is a need as non medicine approaches to improve the painful burden of pregnancy.A proper pain and discomfortsmanagement under the antenatal care can be possible by health care experts and

physiotherapists to avoid the side effects of analgesic used to pain relief, because the study shows a good impact to physiotherapy to relief, control and prevents the musculoskeletal discomforts during pregnancy.

References:-

1. Adinma JIB,, AdinmaED,Prevalence, Perception and Risk Factors for Musculoskeletal Discomfort among Pregnant Women in Southeast NigeriaAdinma et al. J MusculoskeletalDisorder Treat 2018, 4:063, Vol. 4, Issue 4
2. AnnelieGutke et al. J Womens Health (Larchmt). 2018, The Severity of andImpact of Pelvic Girdle Pain and Low-Back Pain in Pregnancy: A Multinational Study, International Library of Medicine.
3. Bermas BL, Lockwood CJ, Eckler K (2017) Musculoskeletal changes and pain during pregnancy and postpartum. UpToDate, Wolters Kluwer Health.
4. Khanna V, Khanna R, Gupta P (2016) Low back pain in pregnancy. International Journal of Recent Surgical and Medical Sciences 2:Nigeria,
5. Preetha Ramachandra et al. (2015), Research Article,Prevalence of Musculoskeletal Dysfunctions among Indian Pregnant Women, Hindawi Publishing Corporation, Journal of Pregnancy Volume 2015, Article ID 437105, 4
6. Robinson HS, Eskild A, Heiberg E, Eberhard-Gran M (2006) Pelvic girdle pain in pregnancy: The impact on function. Acta ObstetGynecolScand 85: 160-164pages
7. Sabino J, Grauer JN (2008) Pregnancy and low back pain. Curr Rev Musculoskelet Med 1: 137-141.
8. S. J. Mousavi, M. Parnianpour, and A. Vleeming, “Pregnancy related pelvic girdle pain and low back pain in an Iranian population,” Spine, vol. 32, no. 3, pp. E100–E104, 2007.
9. N. K. Kanakaris, C. S. Roberts, and P. V. Giannoudis, “Pregnancy-related pelvic girdle pain: an update,” BMC Medicine, vol.9, article 15, 2011.
10. Foti T., Davids J. R., Bagley A. A biomechanical analysis of gait during pregnancy. The Journal of Bone & Joint Surgery A. 2002;82(5):625–630.