ROLE OF EXERCISE (RIYAZAT) DURING PREGNANCY: A LITERATURE REVIEW

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ABSTRACT
Pregnancy is the most important stage of a woman life; it is the stage important in terms of mother health and fetal growth. Mother faces number of troubles during the entire period of pregnancy, which are due to physiological changes observed in the body, necessary for fetal development. Musculoskeletal troubles, gastrointestinal symptoms, mood disorders, disturb sleep patterns, weight gain and gestational diabetes and hypertension are commonest. Some are associated with serious illness. There are a number of drugs which are contra indicated and some are indicated with special precautions making the management of pregnancy related illnesses a major issue. It is believed that exercise in pregnancy can help manage pregnancy related musculoskeletal issues, improve sleep, prevent excessive weight gain, gestational diabetes, eclampsia, shorten labour and reduce the need for obstetric interventions. Though, objective data on the impact of exercise on the mother, fetus and the course of pregnancy are limited; but Unani Scholars since centuries had advocated the practice of exercise (Riyazat) by pregnant lady with an aim of reducing pregnancy related symptoms, better fetal growth and easy labour which are revalidated nowadays by modern scientific studies. This paper aims at reviewing the importance of exercise in pregnancy with special reference to Unani System of Medicine.

KEYWORDS: Pregnancy, Riyazat, Gestational Diabetes, Eclampsia.
INTRODUCTION
Pregnancy is a time of tremendous musculoskeletal, physical and emotional change and yet, it is a condition of wellness.\(^1\) Pregnancy is often the first time in a woman’s life that she experiences so many different feelings, both physically and psychologically. The vast majority of primigravidae experiences ‘aches and pains’ during pregnancy.\(^2\) Mother faces number of troubles during the entire period of pregnancy which are due to physiological changes observed in the body, necessary for fetal development. Musculoskeletal troubles, gastrointestinal symptoms, mood disturbances, disturb sleep patterns, weight gain and gestational diabetes and hypertension are common.

There are a number of drugs for these ailments but some are contra indicated and some are indicated with special precaution during pregnancy which makes the pregnancy related illnesses a major issue.

It is believed that exercise in pregnancy can help manage pregnancy related illnesses and it also shortens labour and reduces the need for obstetric interventions. Clinical evidences show that fitter women tend to have easier pregnancies and shorter deliveries with fewer complications. Many women also find that exercise during pregnancy helps alleviate fatigue and keep energy levels up. Also, exercise has been shown to reduce the gain of subcutaneous fat associated with extra caloric intake during pregnancy. Thus, regular and moderate exercise during pregnancy can have many positive effects.\(^3\)

In 1985 ACOG suggested that 15-20 minutes of exercise limited to 3 days a week was safe in the uncomplicated pregnancy. In 2002 ACOG recommended moderate exercise, 30 minutes or more per day for women with low risk pregnancies.\(^4\)

Unani physicians had also advocated the practice of exercise (Riyazat) by pregnant lady to reduce pregnancy related problems, better fetal growth and easy labour. Ibn e Sina has recommended riyaazat by pregnant woman in order to expel the fuzlat e badan which are accumulated inside the body due to cessation of menses causing imtela e badan.\(^5\) Riyazat is also effective in the management of emesis gravidarum.\(^6\)

**Common ailments during pregnancy and their management by exercise**

**Varicose veins in the legs:** Hypotonia of the walls of the veins, raised intra abdominal pressure, increased blood volume and presence of incompetent valves lead to unsightly and uncomfortable varicosities.\(^2\)
1. Perform frequent and vigorous ankle dorsiflexion and plantar flexion.
2. Elevate feet when sitting or lying.
3. Perform brisk walk as it is far more advantageous in promoting efficient venous return.\textsuperscript{[2]}

**Vulval varicose veins:** Varicose veins are less common in the vulval region but incredibly painful and restricting.
1. Perform frequent pelvic floor muscle contractions.\textsuperscript{[2]}

**Hemorrhoids:** These are a frequently unmentioned source of discomfort.
1. Perform pelvic floor muscle contractions to improve perineal and anal circulation.\textsuperscript{[2]}

**Muscle cramp:** Calcium deficiency, ischemia and nerve root pressure may be the cause. The most common site is the calf. It can also occur in the feet and thighs.
1. Perform calf stretches to relieve muscle spasm.
2. Knee extension with dorsiflexion will release calf cramp.
3. Perform vigorous foot exercises to prevent the bruise like pain which often follows a cramp.\textsuperscript{[2]}

**Thrombosis and thromboembolism:** The raised level of fibrinogen and slow venous blood flow predisposes to this condition.
1. Perform foot and leg exercises and deep breathing.\textsuperscript{[2]}

**Urge and stress incontinence:** It is present particularly in the third trimester.
1. Perform pelvic floor muscle exercises.
2. Perform pelvic floor muscle contraction before and during coughing, sneezing or lifting.\textsuperscript{[2]}

**Guidelines for the prescription of exercise during pregnancy**
Have a physical examination by a physician and obtain medical clearance prior to exercise.\textsuperscript{[1,3]}
Exercise regularly at least 3 times per week rather than intermittently.\textsuperscript{[1]}
Encourage complete bladder emptying prior to exercise.\textsuperscript{[1]}
Include appropriate warm up and cool down activities.\textsuperscript{[1]}
Discontinue any exercise that causes pain.\textsuperscript{[1]}
Prefer non weight bearing exercises such as swimming and stationary cycling to minimize the risk of injury.\textsuperscript{[1,3]}
Drink liquids before and after exercise to ensure adequate hydration.\textsuperscript{[1,3]}
Adequate caloric intake for nutrition and appropriate clothing for heat dissipation are critical.\textsuperscript{[1]}
Always rise slowly when moving from lying down to standing position to avoid the effect of postural hypotension.\textsuperscript{[1]}
Choose stretching exercises that are specific to a single muscle or muscle group; do not involve several groups at once.\textsuperscript{[1]}
Use caution with hamstring and adductor stretches as overstretching of these muscle groups can increase pelvic instability or hyper mobility.\textsuperscript{[1]}
Avoid ballistic movements.\textsuperscript{[1]}
Do not allow any joint to be taken beyond its normal physiologic range.\textsuperscript{[1]}
Avoid strenuous exertion during the first trimester.\textsuperscript{[3]}
Avoid exercise in hot and humid environments.\textsuperscript{[3]}
Avoid exercise when fatigue, especially in late gestation and never exercise to exhaustion.\textsuperscript{[1,3]}
Refrain from exercises that could result in falling and injury to woman or the fetus or abdominal trauma.\textsuperscript{[1]}
Limit activities in which single leg weight bearing is required, such as standing leg kicks.\textsuperscript{[1]}
Do not exceed 5 minutes of supine positioning at any one time after the 4\textsuperscript{th} month of pregnancy to avoid vena cava compression by the uterus.\textsuperscript{[1]}

Discontinue any exercise if following signs appear
Pain, bleeding, shortness of breath, irregular heartbeat, dizziness, faintness, tachycardia and back or pubic pain.\textsuperscript{[1]}

**Absolute contraindications to exercise during pregnancy**

1. Incompetent cervix.\textsuperscript{[1,2]}
2. Vaginal bleeding of any amount.\textsuperscript{[1,2]}
3. Placenta praevia.\textsuperscript{[1,2]}
4. Premature rupture of membranes and premature labour.\textsuperscript{[1,2]}
5. Maternal heart disease.\textsuperscript{[1,2]}
6. Intra uterine growth retardation.\textsuperscript{[1,2]}
Precautions to exercise during pregnancy

The woman with one or more of the following conditions should participate in an exercise program under close observation by a physician and a therapist but she should discontinue exercise as soon as any complications arise.[1,2]

1. Multiple gestations.
2. Anemia.
3. Systemic infection.
4. Extreme fatigue.
5. Overheating.
6. Phlebitis.

Clinical trials

Though the importance of exercise is well understood, few clinical trials done under standard condition reveled the same. Regular exercise during pregnancy is found to be effective in following disease ailments.

Low backache

A pilot randomized controlled trial was conducted on 57 healthy pregnant women with low back pain of insidious onset. They were randomized into the exercise (n=22), spinal manipulation (n=15), and neuro emotional technique (n=20) treatment arms. It was concluded that spinal manipulation and exercise generally performed slightly better than did neuro emotional technique for improving function and decreasing pain.[7]

Pre eclampsia

Sorensen et al in 2003 performed a retrospective case control study on 584 pregnant women and concluded that early pregnancy physical activity was associated with 34% reduction of preeclampsia relative to inactive pregnant women.[8]

Saftlas et al concluded that women who were involved in any exercise during pregnancy were less likely to develop preeclampsia than women who did not employ in regular exercise.[9]

Contrary to these studies, Spinillo and colleagues found that moderate or high physical activity was associated with an increased risk of severe preeclampsia.[10]
Gestational diabetes mellitus

An observational retrospective case control study was performed by Dempsey et al on 541 pregnant women (155=gestational diabetes, 386=normotensive non diabetic). It was concluded that women engaging in any exercise during the first 20 weeks of pregnancy had 48% reduction of gestational diabetes risk.[11]

Saftlas and colleagues in 2004 in a nested case control study concluded that moderate exercise had a protective effect for gestational diabetes but there was no effect by leisure time exercise.[12]

The results of one study conducted by Dye et al suggest that exercise as an alternative therapeutic intervention for women with gestational diabetes mellitus may be particularly relevant for those women who have a BMI of greater than 33.[13]

However, another randomized controlled trial concluded that offering women a 12-week standard exercise program during the second half of pregnancy does not prevent gestational diabetes or improves insulin resistance in healthy pregnant women with normal body mass indexes.[14]

Weight gain

A prospective cohort study conducted on 89 pregnant women concluded that women who continued to exercise had a reduced rate of weight gain in the third trimester compared to women who stopped exercising voluntarily.[15]

Another retrospective study conducted by Haakstad et al in 2007 showed results which favored that regular exercise was related to lower weight gain in the third trimester only.[16]

Beckmann and Beckmann performed a non randomized trial on 100 pregnant women. 50 women were self selected into control group while 50 women were asked to perform strengthening and toning exercises twice per week, 1 hour per session for 12 weeks. They found no differences in weight gain between active and sedentary groups.[17]

Labour

Strengthening and toning exercises were associated with spontaneous vaginal delivery, less oxytocin and shorter duration of labour in a study conducted by Beckmann and Beckmann.[17]
In another study, participants were asked to perform bicycle, treadmill and weights in laboratory thrice a week for 45 minutes each session. It was observed that caesarean section rate was lower in exercise group.\cite{18}

Mood disturbances
Secondary analysis of a randomized controlled trial concluded that four weeks of exercise participation is associated with decreases in negative mood states and anxiety among previously inactive healthy adult pregnant women.\cite{19}

CONCLUSION
Riyazat is found to be effective in a number of pregnancy related ailments, as discussed by elegant unani scholars. Recent clinical trials had also proved the same concept. There certain precautions to be observed in following the regimen. Proper exercise in supervision of a physician may serve as a boon to pregnant ladies easing labour and healthy pregnant life.

REFERENCES


