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Effect of Combination Relaxation Exercises on Stress During First Stage of Labour

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A B S T R A C T

Background: Labor is a normal physiological process which is associated with stress during labor time. There are several relaxation exercises which help to manage this stress during labor and Mitchell's physiological relaxation and breathing exercises are one of them.

Objective: The aim of this study is to determine the effectiveness of combination relaxation exercises (Mitchell's physiological relaxation and breathing) to reduce labor stress and its effect on complications during labor.

Methodology: Fifty-two gestational women of 3rd trimester were randomly allocated into two groups. The data was collected from August 2013 to February 2014 from Pakistan railway hospital (PRGH) Rawalpindi. 26 participants in treatment group were recommended to perform 6-week exercise of combination relaxation type (Mitchell's physiological relaxation with breathing exercise) four times a day with six seconds hold and relax, 5 times in a week. In contrast, control group was suggested to perform only breathing exercise for 6-weeks. The primary outcome measure was labor stress. Patient's response was collected at the time of pre-and post-intervention through Wijma Delivery Expectancy/Experience Questionnaire (WDEQ). The response was analyzed through SPSS 21.

Results: The results showed that 88% women reported reduction in stress level during 1st stage of labor. 58 % females reported normal length of labor duration. Less complications during labor was reported with combination relaxation exercise as compare to alone breathing exercise. Combination relaxation exercises were more helpful in reduction of labor stress as compare to breathing exercise i.e. ($P<0.05$).

Conclusion: This study concludes that combination of relaxation exercises is more helpful in reduction of stress during 1st stage of labor as compared to only breathing exercise.

Introduction

Labor is a physiological process that starts at conception and completed with the child birth. Overall normal pregnancy period comprises on 36 to 42 gestational weeks. At first stage of labor continuous painful contractions takes place.[1] Stress is a non-specific condition caused by internal or external personal and environmental stimulus which affects the body.[2] Labor stress can cause harmful effect on mother and neonate health. It can effect on neural and motor development of fetus which further leads toward impairment.[3] Mitchell's physiological relaxation exercise is the relaxation of whole body which helps to reduce the stress. It is a neuromuscular control technique (reciprocal relaxation) in which one muscle group relaxes and opposite contracts.[4] According to Peggy et.al, most common stress management treatment is Mitchell's physiological relaxation exercise which helps to manage stress in pregnant women during labor.[5] Breathing exercises also help to relieve stress during labor. Only, spontaneous expiration phase of breathing helps to release tension and

hence relaxes the body. It provides sufficient oxygen supply to both mother and fetus during labor and prevents from distress[6]. Although labor is a normal physiological process but associated with stress, fatigue and pain. Combination of non-pharmacological relaxation techniques are non-invasive and appear to be safe for mother and baby. It also helps in stress reduction, prevent complications associated with labor stress and improves maternal satisfaction level.[7] Bell JA, conducted a study on effectiveness of 'Mitchell's Relaxation Technique. The purpose of this study was to determine its effectiveness on the reduction of stress level. According to this study combination of relaxation exercise helps to lower down the heart rate which has a positive impact in reduction of stress level.[17]

The current study is designed to determine the effectiveness of combination relaxation exercises (Mitchell's physiological relaxation and breathing) to reduce labor stress and its effect on complications during labor.

Methodology

Fifty two gestational women age ranged from 18-40 years, with high labor stress, primigravida and multigravida without any pathology i.e. GDM, Hypertension and placenta previa were included in this study. All of women were in their 3rd trimester. Sample was collected through purposive sampling technique as per inclusion criteria. Afterwards Participants were randomly allocated to two equally sized groups through coin toss method. 26 participants in treatment group were recommended to perform 6-week exercise of combination relaxation type (Mitchell's physiological relaxation with breathing exercise) four times a day with six seconds hold and relax, 5 times in a week. In contrast, control group was suggested to perform only breathing exercise for 6 weeks. There was 13 drop outs during follow up and at post-natal time. The primary outcome measure was labor stress. Patient's response was collected through Wijma Delivery Expectancy/Experience Questionnaire (WDEQ). The WDEQ is a 33 –item questionnaire with 6 point liker scale. The scale ranges from 1 (extremely) to 6 (not at all). It measures the thoughts and feeling of mother about childbirth. These exercises were taught by trained physical therapist, videos and provided brochures. Patient response was measured at post-natal time. The data was collected from August 2013 to February 2014 from Pakistan railway hospital (PRGH) Rawalpindi. Effect of treatment was analyzed through Independent -t-test. The data was analyzed on SPSS 21.

Results

Out of 52 gestational women, 38.5% women were between 20-25 years, 38.5% were 26-30 years old and 23% were 31-35 years. Out of these women, 34.7% were primigravida and 65.3% were multigravida.

88% gestational women of treatment group reported reduction in stress during 1st stage of labor and 58 % women had normal length of labor. In contrast 62% gestational women of control group reported reduction in stress level and only 15% women had normal length of labor.

Figure **1**

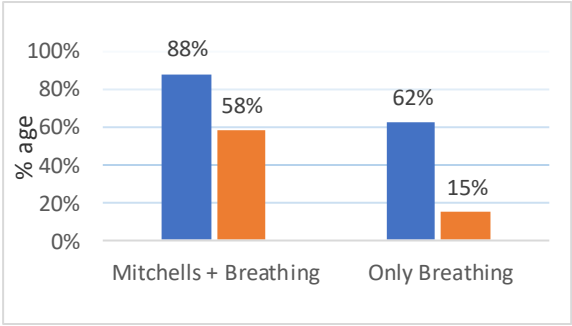

Figure 1 Mitchell's relaxation + Breathing vs. only Breathing

Gestational women in the treatment group reported less complication during labor. Only 4% reported hypertension and 8% reported fetal distress. But in control group 22% women reported fetal distress and 38% reported failure to labor progress. Figure 2

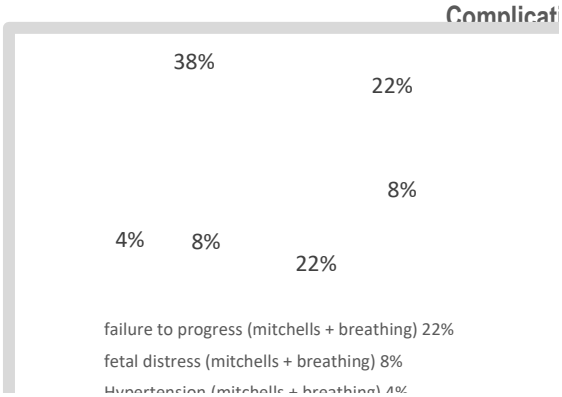

Figure 2 Complications during labour

Pretreatment results showed that there was no significant difference between the labor stress in both treatment and control groups participants, P>0.05.Table 1

Table 1 Pre-treatment labour stress score in both treatment and control groups

Group	Number of participants	Pre-treatment Mean± Std.deviation	P-value
Treatment	26	98.6 ± 19.4	0.58
Control	26	95.7 ± 18.2	

Post treatment results showed that combination of relaxation exercise was significantly more effective in stress reduction according to WDEQ stress scale at the time of labor in comparison to breathing exercise, P<

Table *II:* Post treatment labour stress score in both treatment and control group

Group	No. of Participants	Post–treatment Mean± Std. deviation	P-value
Treatment	26	68.5±13.4	0.003
Control	26	79.3±12.3	

0.05.**Error! Reference source not found.**

Discussion

This study showed that combination of relaxation exercises is clinically more effective in the reduction of labor stress during 1st stage of delivery as compared to only breathing exercise. It also seems that stress reduction had a positive effect on the length of labor duration. Results of this study showed that combination of relaxation exercises results in less complication at the time of labor as compared to breathing exercise.

Rathore AM and Sheiner E et.al suggested that frequent uterine contraction results in lower oxygen supply to placenta which induces maternal stress.[8,9] According to Creedy DK and Rondo et.al., maternal stress throughout pregnancy and distress at the time of labor is associated with prenatal and natal complication which supports the results of this study too.[10,11]

According to Escott D, relaxation combination strategies are much helpful to reduce the stress especially for primipara at the labor time which supports the results of this study that combination relaxation exercises are more helpful in stress reduction for primipara and multipara.[12]

It is best to educate the relaxation strategies during antenatal period. It turns the mothers skillful enough for its implementation at the right time to achieve beneficial results.[13]

According to Teixeira J [14], Beddoe AE et.al.[15] and Vickers A[16], Active relaxation methods are more effective as compared to passive relaxation methods, which reduce maternal stress and heart rate during pregnancy that certainly supports the results of current study; according to which, Mitchell's physiological with breathing combination of exercise is an active relaxation method and helps in labor stress reduction.

According to Bell JA et.al. Diaphragmatic breathing exercise alone and with combination of Mitchells relaxation exercise has positive effect in reduction of heart rate which directly helps in reduction of stress level.[17] According to current study, breathing alone and combination technique also has positive results in stress reduction during labor time.

Kumar S studied the effect of Mitchells physiological relaxation exercise on hypertensive patient and their stress level. According to that study Mitchell's relaxation exercise was more effective than meditation therapy for reduction of heart rate, blood pressure and stress level of patients. Stress reduction has been reported using Mitchells physiological relaxation technique in some other studies too.[18-21]

Due to ethical concerns of the hospital, it was not possible to approach patients during phase 1 of labor to monitor the effect of exercises on their Vitals. So, their response was only measured at post-natal time through

stress questionnaire scale. It is recommended to conduct further study by monitoring patient's vitals at the same time and establish their relation to reduction in stress.

Conclusion

This study concluded that combination of relaxation technique i.e. Mitchells physiological relaxation with breathing are more helpful in reduction of labor stress as compare to only breathing exercise during first stage of labor. Less stress promotes normal duration of labor with less neonate and maternal complications.

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