



“Effectiveness Of Stretching Exercise To Reduce The Back Pain Among Pregnant Mothers Attending Antenatal Out-Patient Department In Dr Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni (Bk)”

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Abstract

Background

Stretching exercise for pregnant women have been greatly appreciated and beneficial, which helps in tolerating labour pain emotionally and physically, increases muscle strength, decreases unhealthy weight gain, reduces incidence of haemorrhoids, varicose veins back ache and fatigue causations. Midwives are in the right position to take over the benefits to pregnant mothers and make them healthier and relieved from suffering. The objective of the study to assess the effectiveness of stretching exercise on the level of back pain among pregnant mothers

Methodology

A quasi experimental study, pre -test post -test design with control group design was adopted. A total 60 samples of were enrolled 30 in experimental group and 30 in control group by non probability sampling technique. The setting of the study was at Dr Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni (Bk). The tools used for present study was socio demographic, clinical characteristics pregnant mothers and back pain

was assessed by Modified Ronald Morris Back Pain Questionnaires. The demonstration of stretching exercises was implemented after taking written consent from pregnant mothers. The pregnant mothers were instructed to practice stretching exercises twice in a day in experimental group. The stretching exercises for present study including slow walking, deep breathing exercises, ankle to toe movement and back stretch exercise for 30 min. Post test was conducted after seven days when pregnant mothers visited for follow up. The data was analyzed by descriptive and inferential statistics. The control group received routine care.

Result

The revealed calculated 't' value in experimental group was 23.08. Which was significant at $p < 0.05$ level. It is interpreted that stretching exercises was highly effective in reducing back pain among pregnant mothers. Calculated chi square (χ^2) revealed association between level of back pain scores with selected socio demographic variables like parity and gestational age.

Conclusion

The present study revealed that stretching exercises was effective to reduced back pain among pregnant mothers.

Key words

Effectiveness, back pain, stretching exercises, antenatal mothers.

1.Introduction

Pregnancy is the most wonderful time for a woman as she awaits the birth of a child and prepares for a new chapter in her life. Giving life is powerful, so preparing a suitable environment for the baby to grow in is a vital necessity of pregnant mothers to maintain comfort by staying healthy physically and mentally as well. This wonderful experience is hindered by back pain which is common among most of the antenatal mothers.¹

Back pain is one of the minor ailments in pregnancy occurring in varying degree during late months of pregnancy. Three out of four women experience some degree of back pain during pregnancy. The severity of this pain ranges from mild discomfort after standing for long periods of time to deliberate pain that interferes with daily life. The cause of back pain during pregnancy is related to many factors such as change in body posture, hormones that cause the relaxation of connective tissue in the body, poor body mechanics and muscle fatigue.²

As the fetus grows mother undergo postural changes that exaggeration of curve in lumbar spine, which not only allows the pelvis to accommodate the enlarged uterus, but also weakens the ability of static support in the lumbar spine to withheld shearing force.³

1.1 STATEMENT OF THE PROBLEM

“Effectiveness of stretching exercise to reduce the back pain among pregnant mothers attending antenatal out-patient department in Dr Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni (Bk)”

1.2 OBJECTIVES

1. To assess the existing level of back pain among pregnant mothers in experimental and control group
2. To evaluate the effectiveness of stretching exercise on the level of back pain among pregnant mothers
3. To find out the association between level of back pain scores with the selected socio demographic variable of pregnant mothers in experimental group

1.3 HYPOTHESIS

H1 – There will be significant difference between pre- test and post-test level of back pain scores after implementation of stretching exercise among pregnant mothers.

H01 – There will be no significant difference between pre and post-test level of back pain scores after implementation of stretching exercise among pregnant mothers.

H2 – There will be association between level of back pain scores with selected demographic variables of antenatal mothers in experimental group among pregnant mothers.

H02 – There will be no association between level of back pain scores with selected demographic variables of pregnant mothers in experimental group.

2. Material and Method

2.1 STUDY VARIABLE

A variable in research simply refers to a person, place, thing, or phenomenon that you are trying to measure in some way. A variable is “An attribute of a person that varies, that is taken on different values”.⁴

2.2 Independent variable

The independent variable is changed or controlled in a scientific experiment.⁵ Independent variable for present study was plan demonstration of stretching exercise.

2.3 Dependent variable

The dependent variable is the variable that is being measured or tested in an experiment.⁶

Dependent variable for the present study was level of back pain scores assessed by Modified Ronald Morries Back Pain Questionnaire.

2.4 Extraneous variable

An extraneous variable is any variable not being investigated that has the potential to affect the outcome of a research study.⁷ In other words, it is any factor not considered an independent variable that can affect the dependent variables or controlled conditions.

The extraneous variable for the research study were the a) socio demographic variable of pregnant mothers like age, educational qualification, occupation, timing of work , type of family, religion, BMI b) Clinical characteristics of the pregnant mother like parity, gestational age

2.5 SETTING OF THE STUDY

The physical location and condition in which data collection take place in the study.⁸

The study was conducted in antenatal outpatient department of Dr Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni (Bk)

2.6 Population

Population is the entire set of individual or objects or element having some common characteristics.⁹

The population for the present study was the sample of pregnant mother attending antenatal outpatient department of Dr Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni (Bk)

2.7 Sample

Sample is a subset of population selected for particular study.¹⁰

In the present study sample refers to pregnant mothers attending antenatal outpatient department of Dr Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni (Bk)

2.8 Sample size

In statistics, the sample size is the measure of the number of individual samples used in an experiment sample size determination is the act of choosing the number of observation or replication to include in a statistical sample.¹¹

In the present study sample size was calculated by openepi software and calculated sample size was 60. In present study the sample of pregnant mother i.e. 30 in experimental and 30 in control group comprised 60 pregnant mothers attending antenatal outpatient department of Dr Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni (Bk)

2.9 Sampling technique

The Sampling is the process of selecting a smaller group of participants to tell us essentially what a larger population might tell us if we asked every member of the larger population the same questions.¹²

Non probability purposive sampling technique was use for selection of participants who meet the purpose of the study on the basis of inclusion criteria.

Experimental group: were enroll even number Sample no 2, 4, 6, 8, 10, 12,14, 16, 18, 20 , 22, 24, 26, 28, 30

Control group: were enroll odd number Sample no 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29

2.10 CRITERIA FOR SELECTION OF SAMPLE –

Inclusive criteria –

Pregnant mothers who are

- Willing to participate in the study
- Gestational age 28 to 38 weeks
- Having history of back pain

Exclusive criteria –

Pregnant mothers who are

- High risk pregnant mothers

- Having bad obstetrical history

2.11 TOOL FOR DATA COLLECTION –

Development of the tool and techniques

The tool was prepared in the form of structured questionnaire to assess the effectiveness of stretching exercise to reduced back pain and its outcome among pregnant mother attending antenatal outpatient department.

- Preparation of blue print

The blue print of item to assessment of effectiveness of stretching exercise to reduced back pain was prepared as per the objective and theoretical framework.

- Consultation of experts

The tool was given to the expert in various fields such as department of obstetrics and gynaecology nursing and statistics. Their opinion and suggestions were taken into the consideration (If any) with consultation of the guide to finalize the tool.

- Preparing a final draft

Final draft for knowledge and attitude is questionnaire and modified tools were prepared after testing the validity, reliability, and pilot study.

2.12 Description of tool-

- Section A: Demographic variables of pregnant mothers
- Section B: Clinical characteristics of pregnant mothers
- Section C: Consist of Modified Roland Morris Back Pain Questionnaire.

Section A: Demographic data of pregnant mothers including Age, Educational qualification, Occupation, Timing of work, Type of family, Religion, BMI, History of attending educational programme on stretching exercise. If yes sources of information.

Section B: Clinical characteristics of pregnant mother include parity and gestational week

Section C: Modified Roland Morris Back Pain Questionnaire to assess back pain it consist of 20 items of maternal characteristics and ranking were no pain, mild pain, moderate pain, severe pain, extreme pain.

It consists of questionnaires related to level of back pain, it consist of 20 items numerical values 1, 2, 3, 4, 5 are assigned to each questionnaire to indicate the severity of back pain. The maximum score is 100 and minimum score is 0.

Scoring procedure is as follows:

1 – Never, 2- Rarely, 3- Occasionally, 4- Frequently, 5- Always

Scoring interpretation:

Score	Interpretation
0-20	No pain
21-40	Mild pain
41-60	Moderate pain
61-80	Severe pain
81-100	reme pain

Ethical consideration:

- The study was conducted after the approval of college ethical committee at Smt.S.E.Vithe Patil College of Nursing.
- Formal written permission was obtained from the Medical Superintendent of in Dr.Vitthalrao Vikhe Patil Pravara Rural Hospital Loni, (Bk).
- An informed written consent was obtained individually from antenatal mothers who participate in the study.
- Confidentiality was assured to mothers throughout the study.
- Antenatal mothers were informed that their participation was voluntary.

2.13 DATA COLLECTION PROCEDURE**On the 1st day (pre-test and demonstration)**

1. Introduction of the researcher and explanation about research study.
2. Take written consent from pregnant mothers who are dealing with back pain and attending antenatal out-patient department of Dr Vitthalrao Vikhe Patil Pravara Rural hospital Loni (Bk)
3. Assess the level of back pain in experimental group and control group by using Modified Roland Morris Back Pain Questionnaire.

Intervention of stretching exercise

1. The researcher demonstrated of stretching exercise for pregnant mother.
2. Instructed the patient perform the same exercises at home twice in a day.

On the 7th day (Post-test)

- Post-test was conducted after 7 days by assessment of back pain after demonstrating stretching exercise among the pregnant mothers in experimental group and control group.

2.14 PLANNED FOR DATA ANALYSIS

Descriptive and inferential statistics was used for data analysis. The collected data was organized, tabulated and analyzed by using descriptive statistics like frequency, percentage, mean and standard deviation. The inferential statistics like paired t test and chi square test (χ^2) were used.

1. Descriptive statistics was used to calculate frequency, percentage, mean and percentage to assess the level of back pain among pregnant mothers before stretching exercise on back pain among antenatal mothers.
2. Paired 't' test was used to calculate effectiveness stretching exercises among pregnant mothers.
3. Chi square test (χ^2) was use to find the association level of back pain scores among pregnant mothers with their selected socio demographic variable in experimental group.

3. Result

Section I : Assessment of pre-test level of back pain by Modified Roland Morris Back Pain Questionnaire among pregnant mothers

Table no: I

Frequency and percentage distribution of pre-test level of back pain among pregnant mothers

N=60

SN	Level of back pain	Experimental group N=30		Control group N=30	
		Frequency	Percentage	frequency	ercentage
1	Mild	0	0	0	0
2	Moderate	5	17	6	20
3	Severe	24	80	22	73.3
4	Extreme	1	3.3	2	6.7

Table No: I depict frequency and percentage distribution of pre-test assessment of back pain by Modified Roland Morris Back Pain Questionnaire. In experimental and control group majority (80%) and (73.3%) had severe level of pain, followed by (17%) and (20%) had moderate level of pain. It interprets that majority of pregnant mothers in both group had suffering from severe back pain.

Section II: Assessment of post-test level of back pain scores after implementation of stretching exercises among pregnant mothers

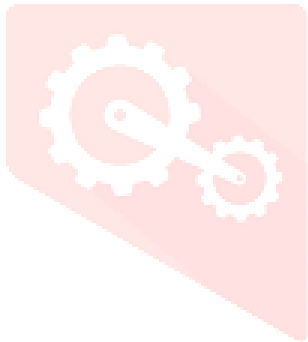
Table no: II

Frequency and percentage distribution of post-test level of back pain scores among pregnant mothers

N=60

SN	Level of back pain	Experimental group N=30		Control group N=30	
		Frequency	Percentage	Frequency	Percentage
1	Mild	0	0	0	0
2	Moderate	20	67	13	43
3	Severe	10	33	17	57
4	Extreme	0	0	0	0

Table no: II shows frequency and percentage distribution of post-test assessment of level of back pain by Modified Roland Morris Back Pain Questionnaire. In experimental group (67%) had moderate back pain after implementation of stretching exercise (57%) had severe back pain .It interprets that stretching exercise was effective to reduced back pain among pregnant mothers.



Section III: Effectiveness of stretching exercises level of back pain among pregnant mothers**Table no: III**

Comparison of pre- test and post- test mean and SD among the pregnant mothers

N=60

SN	Aspects	Mean± SD	Mean difference	't' Value	Level of Significant
1	Experimental group (N=30)		17.86	23.08*	Significant
	Pre test	58.3± 4.5			
	Post test	36.9± 6.4			
2	Experimental group (N=30)		13.15	10.43*	
	Pre test	54.5± 5.8			
	Post test	53.27±4.35			

* - Significant at $p < 0.05$ level

Table no: III In experimental group reveals mean pre-test level of back pain was 58.3 and standard deviation 4.5 The mean difference was 17.86 The obtained 't' value is 23.08 it was significant at $p < 0.05$ level. Hence the hypothesis H1 is accepted

H1 – There will be significant difference between pre-test and post-test level of back pain scores after implementation of stretching exercise among pregnant mothers.

It interpret that stretching exercise was highly effective in reduced back pain among pregnant mothers.

Section IV: Association between level of back pain score with selected demographic variable of pregnant mothers in experimental group.

Table no: IV

Association of level of back pain scores after stretching exercises with demographic variable of pregnant mothers.

N=60

SN	Demographic Variable	Moderate		Sever		χ^2 value	Level of significance
		n	%	n	%		
1	Age	n	%	n	%	1.3	Not significant
	a) 19 -22 years	3	10	15	50		
	b) 23 -26 years	6	20	4	13		
	c) 27 - 29 years	0	0	2	7		
	d) Above 30 years	0	0	0	0		
2	Occupation					0.92	Not significant
	a) House maker	1	3	12	40		
	b) Daily wages work	2	7	1	3		
	c) Farming	4	13	7	23		
	d) Services (Private/ Government)	2	7	1	3		
3	BMI					1.23	Not significant
	a) Less than 19- underweight	2	7	12	40		
	b) 20 - 26 Normal	7	23	9	30		
	c) Greater than 27 - Obese	0	0	0	0		
4	Parity					4.68	Significant
	a) Primipara	5	17	13	43		
	b) Multipara	4	13	8	27		
5	Gestational age					6.01	Significant
	a) 28 - 32	6	20	7	23		
	b) 33 - 38	3	10	14	47		

* - Significant at $p < 0.05$ level

Table no: IV Chi – square (χ^2) values were calculated to find out the association between the level of back pain scores with selected socio demographic variable of pregnant mothers in experimental group. The findings revealed that there was significant association found between level of back pain score with selected demographic variable like parity and gestational age at $p < 0.05$ level. However the other variables like age, occupation and BMI are not significant. Hence it was interpret that hypothesis H2 is accepted

H2 – There will be association between level of back pain scores with selected demographic variables of pregnant mothers in experimental group among pregnant mothers

4. Discussion

A) Description of socio demographic data of pregnant mother

In present study, in experimental and control group (50%) of pregnant mothers belongs to 23-26 years and (33%) in control group belongs to 19-22 years of age.

In experimental group majority (36%) and (33%) in control group had educational qualification of higher secondary education.

In relation to occupation maximum was farming (46%) in experimental group pregnant mothers were working in private and government services (30%) in control group occupation was farming and house maker.

According to timing of work in experimental and control group shows that majority (77%) and (73.3%) had of 6-8 hours of timing of work.

In experimental and control group majority (58%) and (57%) of pregnant mother belong to joint family.

In experimental and control group (77%) and (73.3%) of pregnant mothers were belong to hindu religion.

According to Body Mass Index (BMI) in experimental and control group majority (77%) and (54%) had BMI range 20-26 normal.

Maximum (60%) of pregnant mothers in experimental group and (57%) of pregnant mothers in control group were primipara mothers.

In experimental and control group (60%) and (53%) of pregnant mothers had 33-38 weeks of gestation.

B) Assess level of back pain in experimental and control group

The finding noted that level of back pain under study in experimental group during pre-test shows that the overall scores was (80%) in experimental and (73.3%) in control group pregnant mothers suffering from severe back pain, it indicates that majority of pregnant mothers suffering from severe back pain (Table no I)

C) Effectiveness of stretching exercises to reduced back pain among pregnant mothers in experimental and control group

Effectiveness of stretching exercises to reduced back pain among pregnant mothers. Overall post – test assessment of back pain by Modified Roland Morris Back Pain Questionnaire revealed that in experimental group (67%) had moderate level of back pain as compared to control group (57%) of pregnant mothers had severe back pain. Obtained paired ‘t’ value is 23.08 in experimental group. Hence H1 hypothesis is accepted. It is inferred that stretching exercises was highly effective in reducing back pain among pregnant mothers.

D) Association between level of back pain score with selected demographic variable of pregnant mothers in experimental group.

The findings revealed that there was significant association found between level of back pain scores with selected socio demographic variable like parity and gestational age. However the other variables like age, occupation and BMI are not significant (Table no IV)

E) Hypothesis testing

H1 – There will be significant difference between pre- test and post-test level of back pain scores after implementation of stretching exercise.

There was a significant difference found in level of back pain in between experimental and control group (Table no III).

H2 – There will be association between levels of back pain scores with selected demographic variable of pregnant mothers in experimental group.

The findings revealed that there was significant association found between level of back pain scores with selected socio demographic variable like parity and gestational age. However the other variables like age, occupation and BMI are not significant (Table no IV).

Hence the selected null hypothesis (H02) was rejected as there was a significant association between the levels of back pain scores with selected socio demographic variable like parity, gestational age of pregnant mothers in experimental group.

Summary

From this discussion it was evident that our research finding is very much consistent and parallel to various numbers of scientific study and report. It was through that problem to choose for the study was common and to have greater significance in medical and nursing practice. Further study the result may show the path of research to undertake the scientific work in organized manner.

The present study was quasi experimental study to assess effectiveness of stretching exercise to reduce the back pain among pregnant mothers attending antenatal outpatient department in Dr Vitthalrao Vikhe Patil Pravara Rural Hospital, Loni (Bk). The objectives of the study were:

1. To assess the existing level of back pain among pregnant mothers in experimental and control group.
2. To evaluate the effectiveness of stretching exercise on the level of back pain among pregnant mothers.
3. To find out the association between level of back pain scores with the selected socio demographic variable of pregnant mothers in experimental group.

It was quasi experimental study pre-test and post-test control group the sample size consists of 60 (30 in experimental and 30 in control group). The sampling where selected non probability purposive sampling technique pre-test assessment of back pain was conducted among pregnant mothers. Intervention was implemented (stretching exercises) among pregnant mothers and the effect of intervention on level of back pain was evaluated as post-test.

A well prepared and valid structure interview schedule was used to collect data, which comprised of socio demographic data and clinical characteristics of pregnant mothers. Modified Ronald Morris Back Pain Questionnaires. The finding are summarized as follow:

1. Finding related to socio demographic characteristics and clinical characteristics of pregnant mother

- In experimental and control group (30%) and (50%) of pregnant mothers were in age group of 23-26 years.
- In experimental and control group (36%) and (33%) had high secondary educational qualification.
- Majority of (46%) pregnant mothers occupation of farming was private and government services in experimental group and (30%) in control group.
- Percentage wise distribution of pregnant mother according to timing of work in experimental and control group shows that majority (77%) and (57 %) had 6-8 hours timing of work.
- In experimental and control group maximum (58%) and (57%) pregnant mother belongs from joint family.
- In experimental and control group (77%) and (73.3%) of pregnant mothers were belong to hindu religion.
- In experimental and control group according to Body Mass Index (BMI) majority (77%) and (54%) had BMI range of 20-26 normal.
- Highest percentage (60%) of pregnant mothers in experimental group were (57%) of pregnant mothers in control group were primipara.
- In experimental and control group (60%) and (53%) of pregnant mother 33-38 weeks of gestation.

2. Assess level of back pain in experimental and control group

- Majority (80%) of pregnant mothers in experimental group and (73.3%) in control group had severe back pain.

3. Effectiveness of stretching exercises to reduced back pain among pregnant mothers in experimental and control group

- The study finding revealed that (assess the effectiveness of stretching exercises to reduced back pain among pregnant mothers in experimental and control group) overall post – test level of back pain of experimental and control group was (67%) pregnant mothers had moderate back pain and control group (57%) pregnant mother had severe back pain, It interprets that after implementing stretching exercises in experimental group majority of mothers has moderate back pain .The stretching exercises were effective in experimental group as compared with control group.

- Comparison of pre- test and post- test mean and SD among the pregnant mothers

The mean and SD score was (36.9 ± 6.4) in experimental group as compared with control group (53.27 ± 4.35) . Obtained 't' value is 23.08 it was significant at $p < 0.05$ level. Effectiveness of stretching exercises is high significant in experimental group as compared to control group.

4. Association between level of back pain scores with selected demographic variable of pregnant mothers in experimental group.

- The findings revealed that there was significant association found between level of back pain scores with selected socio demographic variable like parity and gestational age. However the other variables like age, occupation and BMI are not significant.

5. Hypothesis testing

a. Finding related to difference between pre- test and post-test level of back pain scores after implementation of stretching exercise.

Obtained paired 't' test 23.06 results revealed that there was a significant difference found in the level of back pain among pregnant mother between pre- test and post-test level of back pain scores after implementation of stretching exercise in experimental at $p < 0.05$ level as compared with control group. This shows that there is significant difference between pre- test and post-test level of back pain scores after implementation of stretching exercise.

b. Association between level of back pain scores with selected socio demographic variable of pregnant mothers in experimental group

Chi –square value were calculated to find out the association between level of back pain scores with selected demographic variable of pregnant mothers in experimental group. The findings revealed that there was significant association found between level of back pain scores with selected socio demographic variable like parity and gestational week. However the other variables like age, occupation and BMI are not significant.

Summary

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 - In experimental and control group (36%) and (33%) had high secondary educational qualification.
 - Majority (46%) pregnant mothers in experimental group occupation was private and government services (30%) in control group had occupation of farming.
 - Percentage wise distribution of pregnant mother according to timing of work in experimental and control group shows that majority (77%) and (57 %) had 6-8 hours timing of work.
 - In experimental and control group maximum (58%) and (57%) pregnant mother belongs from joint family.
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2. Assess level of back pain in experimental and control group
 - Majority (80%) of pregnant mothers in experimental group and (73.3%) in control group had severe back pain.
3. Effectiveness of stretching exercises to reduced back pain among pregnant mothers in experimental and control group
 - overall post – test level of back pain of experimental and control group was (67%) pregnant mothers had moderate back pain and control group (57%) pregnant mother had severe back pain, It interprets that after implementing stretching exercises in experimental group majority of mothers has moderate back pain. The stretching exercises were effective in experimental group as compared with control group.
 - Comparison of pre- test and post- test mean and SD among the pregnant mothers The mean and SD score was (36.9 ± 6.4) in experimental group as compared with control group (53.27 ± 4.35) . Obtained „t“ value is 23.08 it was significant at $p < 0.05$ level. Effectiveness of stretching exercises is high significant in experimental group as compared to control group.
4. Association between level of back pain scores with selected demographic variable of pregnant mothers in experimental group.
 - The findings revealed that there was significant association found between level of back pain scores with selected socio demographic variables like parity and gestational age. However the other variables like age, occupation and BMI are not significant.
5. Hypothesis testing
 - a. Finding related to difference between pre- test and post-test level of back pain scores after implementation of stretching exercise.

- Obtained paired „t“ test 23.06 results revealed that there was a significant difference found in the level of back pain among pregnant mothers between pre- test and post-test level of back pain scores after implementation of stretching exercise in experimental at $p < 0.05$ level of significance as compared with control group. This shows that there is significant difference between pre- test and post-test level of back pain scores after implementation of stretching exercise. Hence the hypothesis H1 is accepted
- b. Association between level of back pain scores with selected socio demographic variable of pregnant mothers in experimental group
- Chi –square value were calculated to find out the association between level of back pain scores with selected demographic variables of pregnant mothers in experimental group. The findings revealed that there was significant association found between level of back pain scores with selected socio demographic variables like parity and gestational age. However the other variables like age, occupation and BMI are not significant. Hence the hypothesis H2 is accepted

Conclusion

The present study shows that stretching exercises was effective to reduce back pain among pregnant mothers.

Conflict of interest: No

Self: Funding

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