



# **Protocol on the Effects of Postnatal Exercises on Musculoskeletal Pain among Postpartum Women**

**Kalyani Ambule<sup>1\*</sup> and Manjusha Mahakarkar<sup>1</sup>**

<sup>1</sup>*Department of Obstetrics and Gynecological Nursing, Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences, Sawangi (M), Wardha, India.*

## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

## **Article Information**

DOI: 10.9734/JPRI/2021/v33i47A32985

*Editor(s):*

(1) Dr. Giuseppe Murdaca, University of Genoa, Italy.

*Reviewers:*

(1) Barkha Devi, Sikkim Manipal University, India.

(2) Saravanan M. Shree Bharatimaiya, Veer Narmad South Gujarat University, India.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/74594>

**Received 20 July 2021**

**Accepted 27 September 2021**

**Published 23 October 2021**

**Study Protocol**

## **ABSTRACT**

**Background:** Pregnancy brings a slew of morphological and physiological changes to the body. The gravida must not only nourish the foetus, but also adjust to a new body habit and hormonal changes. These alterations, unsurprisingly, have an impact on the musculoskeletal system, which can lead to a number of issues, such as generalized arthralgias, back pain, separation of the pelvic bones, transient osteoporosis, and tendonitis.

**Objectives:** 1. To assess the pretest and posttest musculoskeletal pain among postpartum women in experimental and control group. 2. To assess the effectiveness of postnatal exercises related to musculoskeletal pain among postpartum women in experimental group. 3. To find association between posttest musculoskeletal pain score among postpartum women with selected demographic variables in experimental and control group.

**Materials and Methods:** Quasi-experimental pretest posttest design is used to assess the effectiveness of postnatal exercises, among postpartum women in selected hospitals of Wardha. 80 sample size taken who fulfils the inclusion criteria, 40 postpartum women for control and 40 for experimental group with non-probability convenience sampling.

**Expected Results:** This study is planned to assess the effectiveness of postnatal exercises to the postpartum women experiencing musculoskeletal pain syndrome. Hence, it is expected to identify the level of pain and may reduce their level of pain.

The conclusion will be drawn from the results and will be published in per review journal.

*Keywords: Postnatal exercises; musculoskeletal pain; postpartum women.*

## 1. INTRODUCTION

Muscle, bone, ligament, tendon, and nerve pain are all examples of musculoskeletal pain. Women may only have discomfort in one part of their body, such as their back [1]. The postpartum period (the first 6 months after giving birth) is known for a whole host of changes to your body. But you may be surprised that some of the aches and pains you felt during pregnancy have continued [2]. Regular exercise provides a slew of health benefits that apply to new mothers just as much as they do to anyone else [3]. Hippocrates, in the 4th century BC, singled out and noted pain in the pelvic girdle during and after pregnancy as an entity [4]. They assist you in regaining abdominal muscle strength and preventing lower back pain as well as other issues such as abdominal organs "drooping forward" due to a lack of support [5].

### 1.1 Background of the Study

Muscles, ligaments, and connective tissue can be stretched, compressed, torn, or injured in a variety of ways during pregnancy and birth, resulting in inflammation, dysfunction, and pain [6]. Pregnancy's anatomic and physiologic changes predispose to a particular group of diseases. During pregnancy, nearly all women feel musculoskeletal discomfort to some degree [7]. Musculoskeletal pain is common among postpartum runners. Little is known about the origin and classification of pain due to a lack of research [8]. Lumbo Pelvic Pain (LPP), or pain in the lower back and pelvic regions, is a common complaint among pregnant and postnatal women, with different prevalence rates [9]. During the puerperium, postpartum women are susceptible to a variety of issues, including exhaustion, sleep difficulties, anxiety, depression, sexual problems, physical dysfunction, and unhappiness with partner support, all of which can negatively impact their quality of life [10].

### 1.2 Need of the Study

Breast or bottle feeding, lifting and carrying the infant, juggling home tasks, and lack of sleep can make recovery from childbirth difficult during the early stages of parenthood [11]. A postnatal woman should be well-versed in the numerous types of musculoskeletal discomforts, as well as their causes, management, and therapy [12]. The

purpose of this study is to assess musculoskeletal pain during postpartum period and to provide them postnatal exercises.

## 2. METHODOLOGY

The study was based on quasi-experimental pretest posttest research design. A non-probability convenience sampling technique will be used and 80 samples are calculated with using Cochran formula.

### 2.1 Inclusion Criteria

1. Willing to participate.
2. Present on the day of data collection
3. Normal delivery

### 2.2 Exclusive Criteria

1. Obstetric complications, like postpartum hemorrhage, pre-eclampsia, abruption, placenta previa, marked rectus diastasis, still birth and postpartum psychosis

### 2.3 Instruments

Demographic variables and Brief Pain Inventory will be used for collecting data. With Brief Pain Inventory pain will be assessed and then postnatal exercises will be given to postnatal women.

### 2.4 Intervention

Assess the effectiveness of postnatal exercises related to musculoskeletal pain syndrome. Postnatal exercises will be given on 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> day postpartum day for 30 minutes twice a day to postnatal women following assessment of musculoskeletal pain on 5<sup>th</sup> postpartum day.

### 2.5 Statistical Analysis

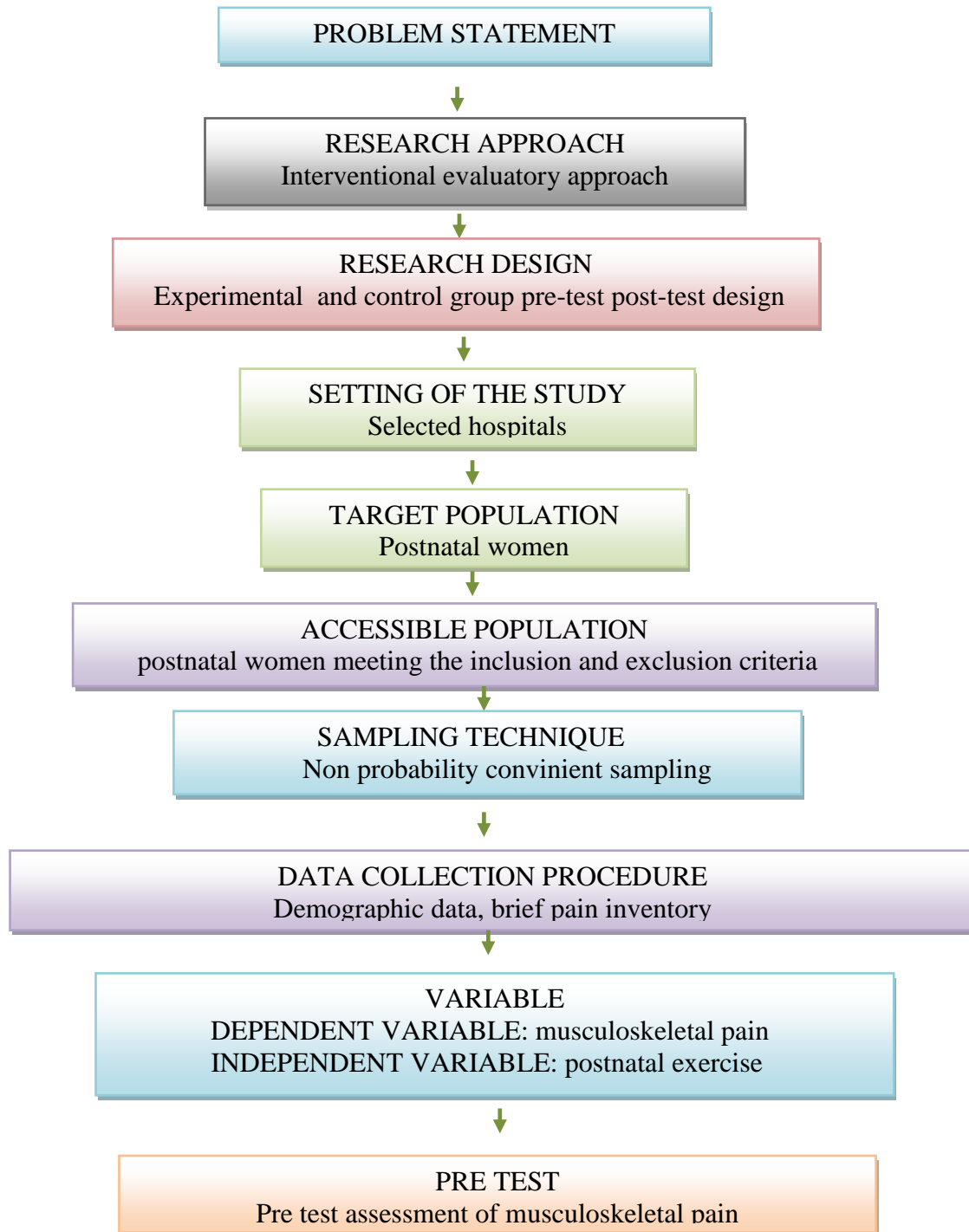
Statistical analysis will be done by descriptive and inferential statistics with the help of SPSS 26.0 software. For assessing the musculoskeletal pain descriptive analysis will be used with techniques of standard deviation, frequency mean and mean percentage. Inferential statistics Karl Pearson correlation coefficient, unpaired "t" test and one way ANOVA will be used to find out to associate demographic variables with level of pain.

## 2.6 Ethical Aspects

Study was approved by the Institutional Ethics Committee (letter no –DMIMS (DU)/IEC/2021/285) and the study will be conducted in accordance with the ethical guidelines prescribed by institutional Ethics Committee on Human Research.

## 3. EXPECTED OUTCOME/ RESULTS

This study is planned to assess effects of postnatal exercises on musculoskeletal pain among postpartum women. Hence, it is expected to identify the level of pain and may reduce their sufferings.



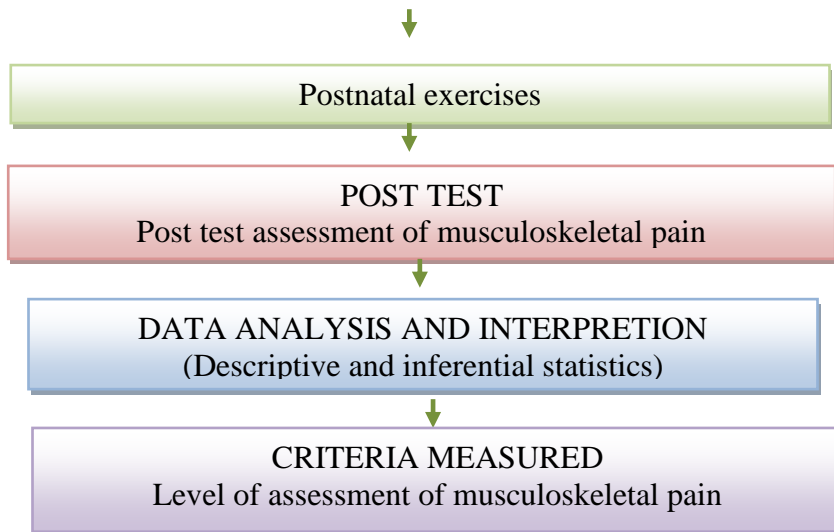


Fig. 1. Schematic presentation of the research methodology

#### 4. DISCUSSION

The study findings is supported through the studies conducted worldwide. According to Arati V Mahishale, Lume Pereira Antonyna Maria Ulorica, Hema S Patil (in April 2014). A study conducted on “Effect of Postnatal Exercises on Quality of Life in Immediate Postpartum Mothers: A Clinical Trial”. According to this study, postpartum women who underwent postnatal workouts right after birth had a superior physical well-being [13]. Most of the National and International programmes for maternal well-being are target towards the prevention and treatment of complications of labour [14].

#### 5. CONCLUSION

Conclusion will be drawn from the statistical analysis that the postnatal women may have musculoskeletal pain and providing postnatal exercise might be effective in reducing their pain.

#### CONSENT

As per international standard or university standard, patient’s written consent has been collected and preserved by the author(s).

#### ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee

has been collected and preserved by the author(s).

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

#### REFERENCES

1. Musculoskeletal Pain: Causes, Symptoms, Treatment [Internet]. Healthline; 2019. Available: <https://www.healthline.com/health/tgct/musculoskeletal-pain>
2. Musculoskeletal Health and Pregnancy: Why You Still Have Back Pain After Delivery – Good Rx [Internet]. [cited 2021 Aug 30]. Available: <https://www.goodrx.com/blog/musculoskeletal-health-and-pregnancy/>
3. Postnatal exercise - Better Health Channel [Internet]. [cited 2021 Aug 30]. Available: <https://www.betterhealth.vic.gov.au/health/healthyiving/postnatal-exercise>
4. Gharib MNE, Aglan AD. Changes in Skeletal System during Pregnancy. IGWHC. 2018;2(1):1–3.
5. Postnatal Care & Exercise [Internet]. The nest. [cited 2021 Aug 30]. Available: <https://www.thenest.in/postnatal-care-exercises/>
6. Back Pain After Baby: 3 Easy Exercises For Postpartum Pain [Internet]. Science-Based Chiropractic. [cited 2021 Aug 30].

- Available:<https://sciencebasedchiropractic.com/back-pain-after-baby/>
7. Borg-Stein J, Dugan SA. Musculoskeletal disorders of pregnancy, delivery and postpartum. *Phys Med Rehabil Clin N Am*. 2007;18(3):459–76, ix.
  8. Christopher SM, Garcia AN, Snodgrass SJ, Cook C. Common musculoskeletal impairments in postpartum runners: an international Delphi study. *Archives of Physiotherapy*. 2020;10(1):19.
  9. Tseng P-C, Puthusseri S, Pappas Y, Gau M-L. A systematic review of randomised controlled trials on the effectiveness of exercise programs on Lumbo Pelvic Pain among postnatal women. *BMC Pregnancy and Childbirth*. 2015;15(1):316.
  10. Anggraeni NPD, Herawati L, Widyawati M, Arizona IK. The Effect of Exercise on Postpartum Women's Quality of Life: A Systematic Review. *Jurnal Ners*. 2020;14:146.
  11. Musculoskeletal Dysfunction During Pregnancy and After Childbirth [Internet]. APTA Pelvic Health. 2019 [cited 2021 Aug 31]. Available:<https://aptapelvichealth.org/2019/10/25/musculoskeletal-dysfunction-during-pregnancy-and-after-childbirth/>
  12. Adinma J, Adinma E, Umeononihu O, Oguaka V, Adinma-Obiajulu N, Oyedum S. Prevalence, Perception and Risk Factors for Musculoskeletal Discomfort among Pregnant Women in Southeast Nigeria. *J Musculoskelet Disord Treat* [Internet]. 2018 Dec 31 [cited 2021 Aug 31];4(4). Available:<https://www.clinmedjournals.org/articles/jmdt/journal-of-musculoskeletal-disorders-and-treatment-jmdt-4-063.php?jid=jmdt>
  13. Mahishale AV, Ulorica LPAM, Patil HS. Effect of Postnatal Exercises on Quality of Life in Immediate Postpartum Mothers: A Clinical Trial. *Journal of South Asian Federation of Obstetrics and Gynaecology*. 2014;6(1):11–4.
  14. Acharya, N., Agrawal, M., Singh, P., Fating, T., 2020b. The effect of antenatal and postnatal pelvic floor muscle training on the risk of developing pelvic floor dysfunction-a cohort study. *International Journal of Current Research and Review* 12, 13–15.

© 2021 Ambule and Mahakarkar; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:*  
<https://www.sdiarticle4.com/review-history/74594>