

The Combined Effect of Hula Hoop Exercise and Stretching on Primary Dysmenorrhea in Adult Girls: An Experimental Study

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DOI: <https://doi.org/10.52403/ijhsr.20230817>

ABSTRACT

Primary dysmenorrhea is a difficult menstrual flow in the absence of any pelvic pathology. Primary dysmenorrhea is characterized by lower abdominal pain which may radiate to thighs and lower back. Dysmenorrhea is the most common gynecological complaint affecting quality of life. The present study aimed to study the combined effect of hula hoop exercise and stretching in primary dysmenorrhea among adult girls.

Materials and Methods: 60 subjects were selected on the basis of inclusion and exclusion criteria. Subjects were explained about the study and consent were taken. Subjects were taught the exercises and asked to perform 3 days/week for 4 weeks. The interpretation of the study was done on the basis of comparing pre-test and post-test assessment of VAS and VMSS.

Result: Paired t test was done to compare pre and post VAS for pain which showed p value <0.0001 which is considered extremely significant. Paired t test was done to compare pre and post VMSS for quality of life which showed p value <0.0001 which is considered extremely significant.

Conclusion: The study shows that combined effect of hula hoop and stretching was effective in reducing pain and improving quality of life in adult girls suffering from primary dysmenorrhea.

Keywords: Primary Dysmenorrhea, hula hoop, stretching, VAS, VMSS.

INTRODUCTION

Dysmenorrhea commonly referred as menstrual cramps, is defined as cyclic pain directly related to menstruation. The pain begins just prior to or with the onset of menstrual flow and resolves with menstruation.¹ Pain may be experienced in abdominal muscles, lower back, thigh and also over suprapubic area. There are many other associated symptoms such as vomiting, nausea, fatigue and diarrhea.² The main cause for menstrual pain is uterine ischemia. Uterine contractions are caused due to release of prostaglandins during menstruation, hence the blood supply to the uterine muscles gets constricted and

muscles goes into spasm. Due to this there is rise in uterine tension. This in turn produces ischemia of muscles leading to cramps.³ Prevalence rate of dysmenorrhea in India is 70.2%.⁴ Primary dysmenorrhea is associated with restriction of activities and absence from school, colleges and work. Physical exercise has been suggested as non-medical approach for management of symptoms. Several studies reported that physical exercise reduces the prevalence of dysmenorrhea.⁵ Hula hoop is an ancient type of dance which now a days is used for core training.⁶ Hula hoop is a fun and widely practiced form of exercise. The functional goal of which is to maintain a hoop in

continuous oscillation parallel to the ground through coordinated body movements.⁷ Several muscles are activated during hula hooping that include trunk muscles such as lower abdominals, erector spinae and muscles of hips, knee and ankle. Therefore, hula hooping is widely believed to be an excellent form of core training. Several previous studies have demonstrated the positive effect of hula hoop exercise on core muscle.⁸

MATERIALS & METHODS

The study began with synopsis presentation to an ethical committee of PES Modern college of physiotherapy and ethical clearance was taken from the institution. Participants were given self-made questionnaire where name, age, menstrual history was asked. Participants were selected according to the inclusion and exclusion criteria. Consent was taken from the participants. Pre-test assessment was taken by using VAS and VMSS to assess the subjects. 60 subjects were selected and provided with stretching and hula hoop exercise training. Participants followed the protocol of hula hoop exercise and stretching for 4 weeks, 3 days per week. Post-test assessment was taken by using VAS and VMSS to assess the subjects. The interpretation of the study was done on the

basis of comparing pre-test and post-test assessment of VAS and VMSS.

Stretching

1. The participants were asked to stand and bend the trunk forward from the hip joint so that the shoulders and back were positioned on a straight line and the upper body was placed parallel to the ground for 5 seconds and repeated 10 times (Figure 1).
2. The participants were asked to stand then raise 1 heel off the ground then repeat the exercise with another heel alternatively. The exercise will be repeated 10 times (Figure 2).
3. The participants were asked to spread their feet shoulder-width, place trunk and hands in forward stretching, then completely bend her knees and maintain a squatting position for 5 sec, and the subjects then raised her body and repeat the same movements 10 times (Figure 3).
4. The participants were asked to spread their feet wider than the shoulder width. Then they were asked to touch right ankle with left hand while putting her right hand in stretched position above her head and vice versa. The exercise will be repeated 10 times for each side (Figure 4).



Figure 1



Figure 2



Figure 3



Figure 4

Hula hoop

The participants were asked to hula hoop around the waist (Figure 5)

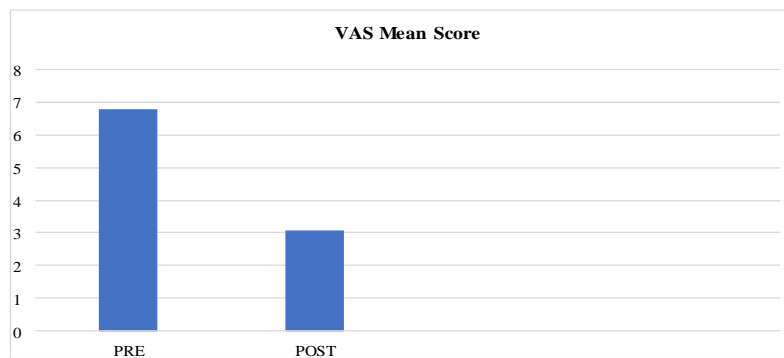


Figure 5

STATISTICAL ANALYSIS

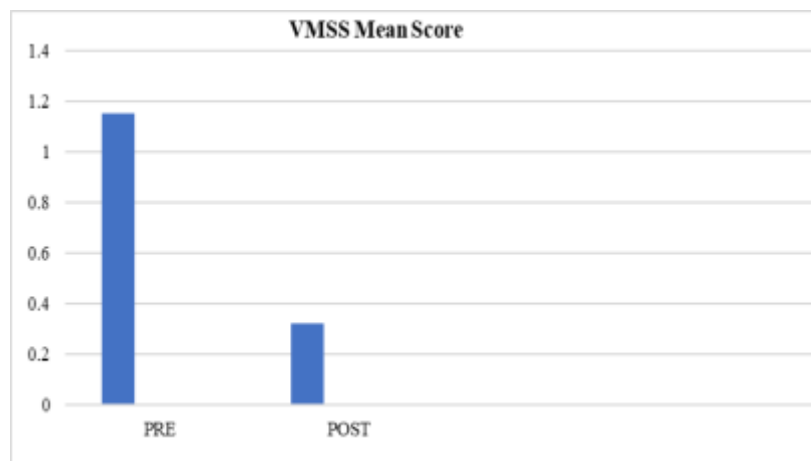
VISUAL ANALOG SCALE (VAS)

	PRE	POST
MEAN	6.78	3.07
STANDARD DEVIATION	1.12	0.88
T VALUE	28.9905	
P VALUE	<0.0001	
SIGNIFICANCE	Extremely significance	



VERBAL MULTIDIMENSIONAL SCORING SYSTEM (VMSS)

	PRE	POST
MEAN	1.15	0.32
STANDARD DEVIATION	0.55	0.47
T VALUE	15.4241	
P VALUE	<0.0001	
SIGNIFICANCE	Extremely significance	



RESULT

Paired t test was done to compare pre and post VAS for pain which showed p value <0.0001 which is considered extremely significant.

Paired t test was done to compare pre and post VMSS for quality of life which showed p value <0.0001 which is considered extremely significant.

DISCUSSION

The objective of the current study was to find out the combined effect of hula hoop exercise and stretching in primary dysmenorrhea. In this study total 60 individuals participated. The result showed that hula hoop and stretching have significant effect on reducing pain and improving quality of life in adult girls suffering from primary dysmenorrhea. Hula hoop increases strength and flexibility of core muscles.

The core strengthening exercise conditioned core muscles for greater performance. Therefore, core muscle conditioning might improve the circulation and metabolism in the pelvic area and results in the improvement of primary dysmenorrhea⁹. Core strengthening exercise allows the small intrinsic muscle around the lumbar spine to be strengthened and conditioned for greater performance enabling them to handle daily forces of normal biomechanics, even when the body is undergoing the stress of menstrual cycle.¹⁰ As stretching exercises help improve the blood circulation, and thus play an important role in reducing muscle pain.¹¹

These findings are similar to many studies done to find out the effects of exercise on primary dysmenorrhea. Saleh et al. concluded that stretching or core strengthening exercises are easy, non-pharmacological method for managing primary dysmenorrhea. Shahnaz et al. proved that physical exercises are effective in reducing pain intensity, pain duration, and the amount of pain killers consumed by girls with primary dysmenorrhea.

The improvement may be due to increase in blood flow and metabolism of uterus during exercise which may be effective in reduction of dysmenorrhea symptoms.¹¹

Dawood et al. showed that therapeutic exercise can improve the secretion of endorphins from the brain, and these in turn raise the pain threshold of the body.

A study done by Izzo and Labriola has shown that improved metabolism is a factor in the reduction of symptoms. It also suggested that stress tends to enhance sympathetic activity and may increase menstrual pain by exacerbating uterine contraction. Exercise may decrease sympathetic activity and relieve the stress through release of endorphins, substance produced by brain that raise the pain threshold, so reducing symptoms.

CONCLUSION

The study shows that combined effect of hula hoop and stretching was effective in reducing pain and severity in adult girls suffering from primary dysmenorrhea.

Hence, our null hypothesis is rejected and alternate hypothesis is accepted.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Rakhshae Z. Effect of three yoga poses (cobra, cat and fish poses) in women with primary dysmenorrhea: a randomized clinical trial. *Journal of pediatric and adolescent gynecology*. 2011 Aug 1;24(4):192-6.
2. Aiyegbusi AI, Adeagbo CA, Uwem-Umoh SI. Comparative efficacy of core strengthening and stretching exercises on systemic and quality-of-life symptoms in adolescent college students with primary dysmenorrhea. *New Nigerian Journal of Clinical Research*. 2020 Feb 1;9(16):59.
3. Berde SD, Yadav TS, Gosavi PM, Gijare SS. Effect of Core Strengthening Exercises

- & Chair Aerobic Exercises in Primary Dysmenorrhoea. *International Journal of Health Sciences*. 2019;3(6).
4. Omidvar S, Bakouei F, Amiri FN, Begum K. Primary dysmenorrhea and menstrual symptoms in Indian female students: prevalence, impact and management. *Global journal of health science*. 2016 Aug;8(8):135.
 5. Gamit KS, Sheth MS, Vyas NJ. The effect of stretching exercise on primary dysmenorrhea in adult girls. *Int J Med Sci Public Health*. 2014 May 1;3(5):549-1.
 6. Lahelma M, Sädevirta S, Lallukka-Brück S, Sevastianova K, Mustelin L, Gylling H, Rockette-Wagner B, Kriska AM, Yki-Järvinen H. Effects of weighted hula-hooping compared to walking on abdominal fat, trunk muscularity, and metabolic parameters in overweight subjects: a randomized controlled study. *Obesity facts*. 2019;12(4):385-96.
 7. Chen WH, Yang WW, Liu YC, Pan WH, Liu C. Effects of hula hooping and mini hooping on core muscle activation and hip movement. *Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology*. 2019 Mar;233(1):110-5.
 8. Kiatkulanusorn S, Luangpon N, Paepetch B, Suato PS. Effects of Hula Hooping Exercise on Lumbar Stability Level and Transversus Abdominis Function in Asymptomatic Individuals with Poor Lumbar Stability. *Journal of Exercise Physiology Online*. 2020 Feb 1;23(1):1-5.
 9. Shahrjerdi S, Mahmoudi F, Sheikhoseini R, Shahrjerdi S. Effect of core stability exercises on primary dysmenorrhea: a randomized controlled trial. *Journal of Modern Rehabilitation*. 2019 Apr 1;13(2):113-22.
 10. Saleh HS, Mowafy HE, El Hameid A. Stretching or core strengthening exercises for managing primary dysmenorrhea. *J Women's Health Care*. 2016;5(295):2167-0420.
 11. Sandhiya DM, Kumari DP, Arulya A, Selvam DP, Abraham DM, Palekar DT. The Effect of Pelvic Floor Muscles Exercise on Quality of Life in Females with Primary Dysmenorrhea. *Annals of the Romanian Society for Cell Biology*. 2021 May 22;25(6):3111-7.

How to cite this article: Saeed Kandge, Siddhima Hardikar. The combined effect of hula hoop exercise and stretching on primary dysmenorrhea in adult girls: an experimental study. *Int J Health Sci Res*. 2023; 13(8):108-112. <https://doi.org/10.52403/ijhsr.20230817>
