



INSINUATION OF EXERCISE THERAPY ON PAIN OF DYSMENORRHEA PATIENTS

Ms. Rojina Azim, Ph.D. Research Scholar, Dept. of Phy. Edu.,
Jadavpur University, West Bengal.

Dr. Badshah Ghosh, Associate Professor,
Panskura Banamali College (Autonomous), West Bengal.



ABSTRACT

Throughout the entire world dysmenorrhea is one of the most common gynaecological problem young females complain about and for that the medical practitioners generally prescribe some synthetic medicines for their relief. Since long some yoga experts as well as physical therapists have been prescribing some alternative ways of getting rid of this problem. For this study 20 female students were selected as sample. The researchers tried to assess the pain tolerance of the dysmenorrhea patients by proving them physical exercise. The entire treatment process was scheduled for three month - 4 days in a week. Physical exercise program included 40-45 minutes exercise specifically for pelvic region. For measuring the pain of the patients, the scholar used McGill pain questionnaire (Ronald Melzac, 1983). Analysis of the results revealed that performing physical exercise significantly reduced the pain of dysmenorrhea ($P < 0.01$).

Keywords: Physical Exercise, Dysmenorrhea and Pain.

INTRODUCTION

Talking about menstruation is considered as taboo not only in India but also in many other countries. But, because of this phenomenon only a woman can become mother. Women should know the scientific physiological reason about menstruation. Women's attitude to menstruation in the early years would appear to depend upon the information given to her by her mother and her friends who used to lead to inconvenience and considerable distress. Early societies were not always kind to the menstruating women. They were often treated as 'unclean', while prohibition surrounding the completely normal physiological function persisted for centuries. This negative attitude and reaction to the menstrual cycle have proven difficult to alter. This probably and at least partially is related to a general lack of knowledge about this complicated subject.

Hormonal influence and menstrual cycle cause definite changes not from the physiological but also from the psychological point of view. Menstruation, pregnancy and child-birth are the biological function which a woman has to perform. There appears to be unanimity of opinions among experts and research findings about the effects of exercise and competitive sports on these vital functions of women.

Menstruation cycle is the female reproductive cycle. This refers to the rhythmic changes that occur in the reproductive organs- the influence of hormones of the endocrine system. Normal and abnormal menstruation can be very complex and distressing for adolescent girls. The girl may become distressed at seeing blood and she does not understand why she is bleeding. Menstrual dysfunction is a common accusation amongst girls.

Menstruation is the periodic discharge of blood, mucus and epithelial cells from uterus which occurs every month. This is an important landmark in the process of growth and maturation and prepares women for motherhood. Even though menstruation is a physiological process, many females face various types of menstrual problems among which dysmenorrhea is the commonest one. Primary dysmenorrhea is very common among adolescent girls and around 60% – 90% of them suffer from this condition . It is a group of symptoms which includes either sharp, intermittent pain, or dull aching pain, usually in pelvic region or lower abdomen. Sometime dysmenorrhea is associated with headache, nausea and vomiting, diarrhoea or constipation, fainting, premenstrual symptoms such as tender breasts and swollen abdomen, which may continue throughout the period. For most women, pain usually starts shortly before or during their menstrual period, peak after 24 hours, and subsides after 2-3 days. The major cause of primary dysmenorrhea is still not clear. It is said that prostaglandin and oxytocin hormone initiate uterine muscle contraction which reduces the blood supply to the uterus. These contractions, and the resulting temporary oxygen deprivation to nearby tissues, are responsible for the pain or "cramps" experienced during menstruation.

The pathogenesis of primary dysmenorrhea is commonly explained by "an abnormal increase in vasoactive prostaglandins originating in secretory endometrium and menstrual fluid, which may induce myometrial hyperactivity and uterine tissue ischemia and pain". Secondary dysmenorrhea can occur many years after menarche and is



associated with identifiable pelvic pathology such as endometriosis. Dysmenorrhea is usually treated with drugs such as oral contraceptive pills or non-steroid anti-inflammatory drugs. These drugs have some side effect. Looking to the side effects of various pharmacological treatments the patients of dysmenorrhea hunt for alternative way of healing and as suggested by various philosophers/ authors/ practitioners, exercise and yoga asana is a way to get relief from dysmenorrhea.

Physical activity has a positive impact on the most of primary dysmenorrhea symptoms. Females who regularly do any sort of physical activity can get rid of dysmenorrhea in general and primary dysmenorrhea in specific. On the other hand stretching exercises are effective in reducing pain intensity, pain duration, and the number of painkillers used by girls with primary dysmenorrhea.

Due to the fact that dysmenorrhea has been treated successfully with stress reduction techniques [10, 11], physical activities and exercise are widely accepted means of moderating stress and stress-related symptoms. Exercise is known to cause the release of endorphin hormones in brain that raise the pain threshold and is shown to improve mood of exercising subjects. However, because of high prevalence of primary dysmenorrhea in different societies and the potential benefits of exercise found in treating dysmenorrhea and also existence of few studies which claimed that physical activity has no effect on primary dysmenorrhea the purpose of this study was to investigate the effects of physical activities on primary dysmenorrhea of adolescent girls.

METHODOLOGY

The objective of this present study was to assess the effect of physical exercise on dysmenorrhea. Sedentary, unmarried students who had reported suffering from primary dysmenorrhea for the last four months were actually selected for this study. For the selection of the subjects the scholars used a self-made questionnaire which included some demographic characteristics regarding age, B.M.I., menstrual characteristics including types and number of medicines consumed, length of menstruation pain, volume and rate of bleeding during menstruation etc. On the basis of some inclusive criteria the scholars selected 105 patients suffering from dysmenorrhea and from amongst them 20 subjects were selected randomly. The age of the selected subjects ranged between 18-23 years. The main purpose of the study was to provide relief from pain to the dysmenorrhea patients and for that the researchers tried to assess dysmenorrhea patients by giving them exercise manipulation. The entire treatment process was scheduled for three month - 4 days in a week. Physical exercise program included 40-45 minutes specifically for pelvic region. For measuring the pain of the patients, the scholar used McGill pain questionnaire. Pain analyses of the dysmenorrhea patients were assessed three times that was - primary data - data collection before the treatment; intermediate data - data collected after five weeks of the treatment and final data - data collected after three months of the treatment. The intermediate was collected with an intension to check the improvement in the patients due to treatment.

For analyzing the data which were mainly in ordinal scale the scholars applied descriptive statistics and Wilcoxon Signed Ranks Test were considered most suitable statistical tool to assess the purpose of this study.

RESULTS AND FINDINGS

The result of the study is presented using tables and graphs.

TABLE NO. 1
 WILCOXON SIGNED RANKS TEST OF PAIN BETWEEN THE PRE AND INTERMEDIATE RESULT OF EXERCISE GROUP

Variables	Mean	SD	Median	Z	P
Exercise Pre	75.55	1.47	76.0	4.06*	0.01
Exercise Intermediate	72.70	1.17	72.5		

It is observed from table - 1 that the mean pain score of the group without exercise treatment was 75.55 with ± 1.47 standard deviation, whereas after getting exercise treatment for five weeks the mean pain score was 72.70 with ± 1.17 standard deviation. It is further revealed from the above table that significant difference was found between



the pain score of pre exercise treatment and intermediate treatment as the Z- score was found 4.06 with respect to P 0.01.

TABLE NO. 2
 WILCOXON SIGNED RANKS TEST OF PAIN BETWEEN THE INTERMEDIATE AND POST RESULT OF EXERCISE GROUP

Variables	Mean	SD	Median	Z	P
Exercise Intermediate	72.70	1.17	72.5	3.94*	0.01
Exercise Post	63.90	2.40	64.0		

It is observed from table - 2 that the mean pain score intermediate exercise treatment was 72.70 with ± 1.17 standard deviation, whereas after getting exercise treatment for three month the mean pain score was 63.90 with ± 2.40 standard deviation. It is further revealed from the above table that significant difference was found between the pain score of intermediate exercise treatment and post treatment as the Z- score was found 3.94 with respect to P 0.01.

TABLE NO.3
 WILCOXON SIGNED RANKS TEST OF PAIN BETWEEN THE PRE AND POST RESULT OF EXERCISE GROUP

Variables	Mean	SD	Median	Z	P
Exercise Pre	75.55	1.47	76.0	3.94*	0.01
Exercise Post	63.90	2.40	64.0		

It is observed from table - 3 that the mean pain score of the group without exercise treatment was 75.55 with ± 1.47 standard deviation, whereas after getting exercise treatment for three month the mean pain score was 63.90 with ± 2.40 standard deviation. It is further revealed from the above table that significant difference was found between the pain score of pre exercise treatment and post treatment as the Z- score was found 3.94 with respect to P 0.01.

Discussion and Conclusions

The findings of this study indicated that physical activity had a positive impact on primary dysmenorrhea symptom. Actually, acute exercise of moderate to high intensity is associated with increase in plasma concentration of sex hormones in a gender specific fashion. In women, increases in plasma concentrations of estrogen are proportional to exercise intensity during acute exercise and more prominent during the luteal than during the follicular phase of the menstrual cycle. Increases in plasma progesterone occur during the luteal phase the cycle only. Increases in plasma testosterone in response to acute exercise in women are either not seen or are very small or are delayed. Any increases in androstenedione during acute intense exercise in women are most likely of adrenal cortical origin. In addition, increased concentrations of catecholestrogens (2-hydroxyestrone) are also observed during strenuous training in women. Exercise associated increases in hemo-concentration, rate of sex hormone degradation, sex hormone secretion from adrenal cortex, and sex hormone secretion from the gonads in response to stimulation by catecholamines are some of the explanations that have been proposed to account for exercise associated plasma sex hormone increases.

The outcome of the study is due to the fact that evidence shows that anti diuretic hormone is active during physical activity and the vasoconstriction action of this hormone and variations in pelvic blood flow may influence the synthesis or breakdown of prostaglandins (Warren, M.P. and J. Locke Rebecca, 1999). One possible mechanism explaining the positive effect of physical activity on intensity of primary dysmenorrhea pain is associated with stress. It has been accepted that exercise is used as a mean of moderating stress. Menstrual pain may be resulted from increased contraction of uterine muscle which is innervated by the sympathetic nervous system. Stress is supposed to increase the sympathetic activity which may lead to the increase of menstrual pain by enhancing the intensity of uterine contraction. So, due to the fact that exercise reduces and moderates stress, the sympathetic activity may be decreased. Thereby, intensity of menstrual pain and other related symptoms may be reduced as well. Another



possible dilemma in this respect is that, because doing physical activity leads to the release of endorphins which are produced by brain may enhance the pain threshold. The finding of this study is corroborated with the studies of Smith et al. Iorno et al., Abbaspour et al., Shahrjerdi and Sheikh Hoseini and Izzo and Labriola.

In conclusion, the results of the present study suggest that performing regular physical activity reduce the primary dysmenorrhea symptoms. It is a known concept that in developing country like in India, participating in regular physical activity programs is limited by social, cultural and religious factors. Therefore, because of high potential benefits of physical activity and exercise in reducing the detrimental effects of primary dysmenorrhea symptoms, young girls are recommended to take part in such physical activity programs in order to help them to decrease the negative impact of these symptoms on their academic, social and even personal life.

Reference:

- Abbaspour, Z., M. Rostami and S.H. Najjar, 2006. The effect of exercise on primary dysmenorrhea. *J. Res. Health Sci.*, 6(1): 26-31.
- Chien LW, Chang HC, Liu CF (2013) Effect of yoga on serum homocysteine and nitric oxide levels in adolescent women with and without dysmenorrhea. *J Altern Complement Med* 19: 20-23.
- Cox, D.J. and R.G. Meyer, 1978. Behavioral parameters *J. Behv. Dietary condition and exercise in Shahreyar girl's Med.*, 1: 297-310.
- Han SH, Hur MH, Buckle J, Choi J. Y, Lee MS (2006) Effect of aromatherapy on symptoms of dysmenorrhea in college student: a randomized placebo-controlled clinical trial. *J Altern Complement Med* 12: 535-541.
- IFPS Technical Assistance Project (ITAP). Promoting Adolescent Reproductive Health in Uttarakhand and Uttar Pradesh, India. Gurgaon, Haryana: Futures Group, ITAP. 2012.
- Iorno, V., R. Burani, B. Bianchini, E. Minelli, F. Martinelli and S. Ciatto, 2007. Acupuncture treatment of dysmenorrhea resistant to conventional medical treatment. Creative Commons Attribution Non-Commercial License, <http://creativecommons.org/licenses/by-nc/2.0/uk/>.
- Izzo, A., Labriola, D. (1991) Dysmenorrhea and sports activities in adolescents. *Clin. Exp. Obstet Gynecol.*, 18:109-116.
- Ju H, Jones M, Mishra G. The prevalence and risk factors of dysmenorrhea. *Epidemiol Rev.* 2014; 36(1): 104-13. doi: 10.1093/epirev/mxt009. Epub 2013 Nov 26.
- Mahvash Noorbakhsh, Zahra, M. T. (2012) The Effect of Physical Activity on Primary Dysmenorrhea of Female University Students. *World Applied Sciences Journal* 17 (10): 1246-1252.
- Melzack, R. (1983). Pain measurement and assessment. Raven Press. New York.
- Perry M (2012) Treatment options for dysmenorrhea. *Nurs Pract* 23: 195-198
- Quillen, M.A. and D.R. Denney, 1982. Self-control of dysmenorrhea symptoms through pain management training. *J Behav Ther Psychiatry*, 13: 85-104.
- Rani M, Singh U, Agrawal G. G, Natu SM, Kala S, et al. (2013) Impact of Yoga nidra on menstrual abnormalities in females of reproductive age. *J Altern Complement Med* 19: 925-929.
- Shahrjerdi, Sh and R. Sheikh Hoseini, 2010. The effect of 8 weeks stretching exercise on primary dysmenorrhea in 15-17 aged high school students' girls in Arak. *Journal of Shahrekord University of Medical Sciences*, 11(4): 84-92.
- Tamrakar A. Textbook of Gynecology for nurse. 1st edition. New Delhi: Jaypee Brother Medical Publisher (P) LTD; 2014; 13.
- Warren, M.P. and J. Locke Rebecca, 1999. What is the effect of exercise on primary dysmenorrhea? *WJSM*, 33: 227.