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THE EFFECT OF STRETCHING EXERCISE ON PRIMARY DYSMENORRHEA IN ADULT GIRLS

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ABSTRACT

Background: Painful periods are called dysmenorrhea. Primary dysmenorrhea is pain before or during period because lining of uterus produces a hormone prostaglandin it causes uterus to contract often painfully. The lower abdominal pain radiates towards back and thigh region associated with nausea, vomiting, fatigue, headache and mood swings etc. Different interventions use to treat menstrual cramps.

Aims & Objectives: In this study effectiveness of stretching exercise on primary dysmenorrhea focused.

Procedure: The quasi-experimental study in which convenient sampling from female students of GCUF hostel, aged 18-25 has been done. In this study only, dysmenorrhea diagnosed patients participated. Subjects had been assessed for pain intensity, pain duration and symptoms by using Visual Analogue Scale (VAS) and Verbal Multi-Dimensional Scoring System (VMSS). Data was collected by questioner after getting consent form. Proper stretching protocol was followed and General body stretching & abdominal stretching was focused. Ethics and modesty considered while data collection procedure.

Results: A group of student`s pretreatment values of pain and VMSS was taken and compared these values with post treatment values through Paired T- Test. There was significant improvement of mean score in the pain before (1.52 ± 0.50) and after (0.55 ± 0.50) intervention. The mean of the pre value of Verbal multi-dimensional scoring system was 1.6944 and then after treatment the mean of the post value was .7500. The data analysis showed the proper reduction in the patients' symptoms after treatment. Participants identification was anonymous. Data was analyzed using SPSS version 16.

Conclusion: Stretching exercise is effective in treatment of Primary Dysmenorrhea in young females.

Key words: Painful menstruation, abdominal cramps, stretching

INTRODUCTION

One of the daily occurrences for teenage girls is dysmenorrhea (Agarwal and Agarwal, 2010). Dysmenorrhea is the name for the pain related to menstruation. It is an uncomfortable or painful menstrual flow (Kural et al., 2015). Dysmenorrhea can be categorized as primary or secondary. When the pelvic architecture and ovulation are stable and there is no evidence of secondary dysmenorrhea, the lower abdomen is painful before or during menstruation at any stage. While secondary dysmenorrhea can develop years after menstruation and is a menstrual pain associated with the initial condition. It is connected to a number of pathological conditions, such as endometriosis, pelvic inflammatory disease, intrauterine devices, irregular menstrual cycles or reproductive issues, ovarian cysts, polyps, intrauterine attachments, or cervical stenosis (Unsal et al., 2010).

Dysmenorrhea is more common in adolescents, with rates ranging from 15.8 to 89.5 percent worldwide. The most widespread obstetric condition, dysmenorrhea affects more than half of menstruating women globally. (Valiani, 2010) It generally (93%) develops into a menstrual problem as a result of premenstrual symptoms (65%) and a certain cycle length (43 percent). With a social and educational lifestyle, menstrual abnormalities are repressed in 33 percent and 7.7 percent of subjects, respectively (Abdelmoty et al., 2015). It has been discovered that university women rarely experience dysmenorrhea. This was reported by 84.2 percent of the girls tested, and 15.8 percent of them said that they had no dysmenorrhea. A visual analogue scale revealed that 34.2 percent of females experienced severe pain, 36.6 percent experienced significant pain, and 29.2 percent experienced light pain (Kural et al., 2015).

Dysmenorrhea symptoms include pain that significantly impairs day-to-day functioning and academic performance (De Sanctis et al., 2015). Lower abdominal discomfort or a feeling of discomfort may come with headache, dizziness, diarrhoea, bloating, nausea and vomiting, back pain, and leg pain (Al-Saleem, 2018). These symptoms are common causes for teenagers to seek medical attention, making them a serious public health issue (French, 2008). Stress makes menstrual cramps worse. Exercise is a well-liked herbal remedy for reducing stress and menstruation pain. (Kanaan and Claydon, 2014).

The underlying cause of primary dysmenorrhoea, however, remains a mystery. However, signs and symptoms are attributed to the activity of uterine prostaglandins, particularly PGF2 alpha

released by endometrial cells at the onset of menstruation. PGF2 alpha stimulates myometrial waves, ischemia, and sensitization of nerve endings. The intensity of menstrual pain and its symptoms of dysmenorrhea are directly related to the amount of PGF2 alpha released (Lumsden et al., 1983). This increase is caused by a drop in progesterone levels. Prostaglandin inhibitors play an important role in limiting the signs and symptoms of painful menstruation (Barcikowska et al., 2020). The VAS is a one-dimensional measure of pain intensity. It is used to assess pain intensity levels (Haefeli and Elfering, 2006). Stress reduces the release of follicle-stimulating hormone and luteinizing hormone and leads to poor follicle development. Progesterone production after ovulation can also be reduced in this way (Schliep et al., 2015). Stress triggers movement of the sympathetic nervous system, which increases uterine muscle contractions and exaggerates menstrual symptoms (Rode et al., 2010).

Stretching exercises are one of the most effective drug-free treatments for dysmenorrhea, and research has shown that premenstrual women are frequently urged to improve their level of physical activity (Armor et al. al., 2019). Exercise is thought to increase endorphin levels, which thus enhance mood and quality of life. According to descriptive data, active women experience much fewer premenstrual symptoms than inactive women (Craft & Parna, 2004).

Stretching exercise has been described to reduce menstrual discomfort and hypoxia by increasing vasodilation. Suppression of the release of endogenous opiates, particularly beta-endorphins and prostaglandins, and occlusion of peripheral blood flow results in decreased pelvic resistance. Stretch-based exhaustive exercises reduced motor neuron pool hyperactivity. Exercise and yoga/tai chi may also offer relief from dysmenorrhoea symptoms through a number of mechanisms, including improved blood flow and endorphin launch and reduction of stress and tension (Brown and Brown, 2010; McGovern and Cheung, 2018).

The manipulation of PD can take many different forms. Non-steroidal anti-inflammatory drugs (NSAIDs) and contraceptives are just two examples of the medications that are given by PG inhibitors, which can be hormonal pharmacological treatments. The most popular first-line treatment for dysmenorrhea involves taking a number of NSAIDs, such as ibuprofen, that do not particularly block both COX-1 and COX-2 enzymes (Giamberardino, 2008, Giamberardino et al., 2010, Roberts et al., 2012, Smorgick et al., 2013), but its use is reduced due to side effects, such as gastric irritation or ulcers (even when given concomitantly with gastric protectors) being found

in a few girls. Long-term uses of NSAIDs are also associated with heart, liver, and kidney problems (Smorgick et al., 2013). This led us to realize that there may be a need to focus on viable traditional treatment methods as natural and non-invasive therapies that are safe and smooth to apply for relief from the signs and symptoms of dysmenorrhoea. are, acupuncture and acupressure, biofeedback, heating procedures, transcutaneous electrical nerve stimulation (TENS), exercises and relaxation techniques (Guo et al., 2013).

Self-care routines are straightforward prerequisites for a woman to lead a fulfilled existence and be treated with respect, in addition to menstrual hygiene (Ma et al., 2013). Both females' health and vanity depend on it. As a result, giving adolescent women the knowledge and abilities necessary for menstrual care enables them to do so with abilities that raise their self-esteem and unquestionably reflect their overall academic success (Akerlund, 1994).

In addition, exercises can reduce dysmenorrhea and its related signs and symptoms. Home-based exercise has been validated as a beneficial intervention and is considered to provide substantial improvement in the severity of primary dysmenorrhoea pain (Zhang et al., 2010). Exercise also increases the production of endorphins, which act as the body's natural painkillers. Stretching the abdominal muscles in general can help relieve abdominal pain. Therefore, the current review focuses on evaluating the effects of stretching physical games and menstrual care at home to reduce the number of dysmenorrhoea pain intensity and premenstrual symptoms for young women (Aguilar and Mitchell, 2010).

AIMS AND OBJECTIVES:

- To indicate the frequency of dysmenorrhea in adult girls of university
- To assess the effectiveness of stretching on dysmenorrhea in adult girls

MATERIAL AND METHODS:

Data Collection Tools:

The validated tool of Visual Analogue Scale (VAS) and Verbal Multi-Dimensional Scoring System (VMSS) was used in this study. This VAS measure intensity of pain by scoring of no pain to 0 severe pain whereas VMSS used to measures both pain and related signs and symptoms.

Main Study Parameters:

- Stretching Exercise
- Primary Dysmenorrhea

Study design:

It was a quasi-experimental study design.

Sample size:

Open-Epi software was used to calculate sample size. The changes in mean and standard deviation of pre (6.59 ±1.96) and post intervention (4.84 ±1.74) of pain was taken from previous study conducted in Rawalpindi, Pakistan (Raheela Kanwal, 2017a). The estimated sample size was 36.

Sampling technique:

Sample was selected by using convenient sampling technique.

Study settings:

Data was collected from Government College University Faisalabad (GCUF) hostels.

Sample selection:

Inclusion Criteria: Female adolescents studying at GC University Faisalabad, aged 18-25 years and having the symptoms of dysmenorrhea.

Exclusion Criteria: Participants who didn't give consent. Female having poly cystic ovarian syndrome, having inflammatory bowel syndrome, having urinary tract infections, having hysterectomy, having endometriosis or any other reproductive disease.

DATA ANALYSIS AND INTERPRETATION

Data analysis had been carried out by using by SPSS 16 version. The paired t-test was applied to verify the effect of stretching exercise on primary dysmenorrhea in adult girls.

Frequency distribution table of Age

Variables	Frequency	Percentages

Age		
18-21	16	43.2%
22-25	20	54.1%

Table shows that among 36 participants, 43.2% participants that were enrolled in the study were between 18-21 years of age group and 54.1% of participants were between 22-25 years of age.

Frequency distribution table of BMI

Variables	Frequency	Percentages
Body Mass Index		
<18.5	12	33
19 to 24.5	22	61
>25	02	5.5

shows that 36 participants were enrolled in the current study. About 32.4% of participants were enrolled in study have 25 (overweight).

Paired T-Test (Pain)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretreatmentpain	1.5278	36	.50631	.08438
	posttreatmentpain	.5556	36	.50395	.08399

Table shows that there was significant improvement of mean score in the pain before (1.52 ± 0.50) and after (0.55 ± 0.50) intervention.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pretreatmentpain & posttreatmentpain	36	.498	.002

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretreatmentpain – posttreatmentpain	.97222	.50631	.08438	.80091	1.14353	11.521	35	.000

Paired T-Test (VMSS)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretreatmentvmss	1.6944	36	.66845	.11141
	posttreatmentvmss	.7500	36	.64918	.10820

The mean of the pre value of Verbal multi-dimensional scoring system was 1.6944 and then after treatment the mean of the post value was .7500. The data analysis showed the proper improvement in the patients after treatment.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pretreatmentvmss & posttreatmentvmss	36	.741	.000

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	pretreatmentvmss - posttreatmentvmss	.94444	.47476	.07913	.78381	1.10508	11.936	35	.000

Change in mean score of pain and VMSS before and after intervention

	Before Intervention	After Intervention	P- Value
Pain	1.52 ± 0.50	0.55 ± 0.50	0.02
VMSS	1.69 ± 0.66	0.75 ± 0.66	<0.01

There was significant improvement of mean score in the pain before (1.52 ± 0.50) and after (0.55 ± 0.50) intervention. There was also significant decrease of mean score in the VMSS before (1.69 ± 0.66) and after (0.75 ± 0.66).

DISCUSSION:

Effectiveness of stretching exercise on primary dysmenorrhea in adult girls is described in this study. Results are positive and proving the importance of stretching exercise as intervention of primary dysmenorrhea. Study was conducted on a group of young girls and it`s pre and post values of pain and VMSS was compared. Proper stretching protocol was followed. General and abdominal stretching (15-30 seconds stretch, 2-4 repetitions, 2-3 days per week) was performed after 5 minutes warmup. Findings of this study are analogous to many authors` studies.

According to Shahnaz Shahr-jerdy et al (2012), stretching exercises not only reduces intensity and duration of pain but also effective in reducing the number of analgesics used by adult girls affected with primary dysmenorrhea. Abbaspour et al (2006) study shows that severity and duration of primary dysmenorrhea can be decreased with exercise. And also described about sedative medicines in school girls. Onur et al (2012) conducted study on effect of home-based exercises that how it improves the QOL of female affected with dysmenorrhea. And results of study prove that exercise is effective as intervention of dysmenorrhea. Reason behind reduction of dysmenorrhea symptoms during exercise is raised metabolism and blood flow toward uterus.

Izzo and Labriola (1991) concluded that reduction of dysmenorrhea symptoms is due to increased metabolism. Raise in symptoms and pain of dysmenorrhea is due to increase in contraction of uterine muscles. Uterine muscles are innervated by sympathetic nerves derived from nervous system. Due to increased contractility of uterine muscles, sympathetic nerves become hyperactive results in increased pain.

Dawood MY (2006) conducted a study and described that in actual exercise increases the level of endorphins in brain. Endorphin raise the threshold of pain in body. Daley AJ (2009) concluded that bands of ligaments that surround the abdominal region could be a factor of nerve irritation.

So, stretching exercise is found very effective in treatment of primary dysmenorrhea. Limitation of this study is small sample size and small duration of study, no long-term follow-up and lack of cooperation from some participants.

CONCLUSION

In light of the consequences of this observation, it can be said that more than three quarters of enrolled college students now suffer from dysmenorrhea. Most of the students had less knowledge about menstruation and stretching exercises and their knowledge increased by proper guidance. Before and after taking a look, there was a statistically significant difference in the pain and function of dysmenorrhoea. Additionally, stretching activities have better ability to lessen dysmenorrhea pain.

RECOMMENDATIONS

The following suggestions are made in light of the findings of the overview: Increase student awareness and knowledge about stretching exercises and dysmenorrhea through media. Raise students' understanding of menstruation and the benefits of physical activity in treating dysmenorrhea by including these topics in curriculum. In order to improve the ability to generalize the effects of stretching exercises, it is also crucial to focus on specific college students.

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