



A study to assess the effectiveness of muscle stretching exercises on pain and discomfort during primary dysmenorrhoea among GDA students (General Duty Assistant) in DDU-HP Department Kalaamb, Distt Sirmour.

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Abstract: Primary dysmenorrhea or painful menstruation without pelvic pathology is one of the most common complaints in women's medicine. The objectives are identify the prevalence of primary dysmenorrhoea among GDA students (General Duty Assistant) students, determine the degree of pain and discomfort during primary dysmenorrhoea among GDA students (General Duty Assistant) students, evaluate the effectiveness of muscle stretching exercise on pain and discomfort during primary dysmenorrhoea. One group pre-test and post-test design was adopted. Setting of the study was DDU-HP Department. Sample was 30 B.Sc. Nursing students with primary dysmenorrhoea. Sampling technique was Non probability purposive sampling technique was adopted. Menstrual pain perception level was measured by using numerical pain scale and primary dysmenorrhoea discomfort was assessed by primary dysmenorrhoea discomfort assessing rating scale. Muscle stretching exercise was given to the subjects five days per week about 30 min, under the supervision of investigator. Result of the study had shown significant effect of muscle stretching exercises on pain and discomfort during primary dysmenorrhoea. This is proved by paired "t" test. The paired 't' value for pain and exercise was 16.09 ($p < 0.05$) and the paired "t" value for discomfort during primary dysmenorrhoea and exercise was 14.08 ($p < 0.05$). So, it was statistically proved that muscle stretching exercise was effective to reduce pain and discomfort during primary dysmenorrhoea. So, this study concluded that muscle stretching exercise is very suitable and practicable therapy of non-pharmacological measure for managing pain and discomfort of primary dysmenorrhoea among adolescent girls with primary dysmenorrhea.

KEY WORDS: Primary Dysmenorrhea, Pain, Muscle stretching exercise

INTRODUCTION

Primary dysmenorrhea or painful menstruation without pelvic pathology is one of the most common complaints in women's medicine. More than 50% of women who have menstrual bleeding have a painful menstruation, as 10% of them are so severe that they disrupt 1–3 days of their lives each month (**Jalili Z, Safizade H**)¹.

The pain begins with the onset of menstrual bleeding and lasts for 72–12 h. Pain is usually in the middle line of the highest severity. Dysmenorrhea pain is often described as cramped and intermittent. Some women have severe back and thigh pain. Abdominal pain is often accompanied by nausea and vomiting, bruising and headache, and an unpleasant general feeling. Pain usually has the highest severity on the 1st day of bleeding and gradually decreases its severity (**Berek J**)².

The recommended treatment methods to reduce the severity of pain in the primary dysmenorrhea include the use of contraceptive pills, calcium channel blockers, skin electrical stimulation. Menstruation is the periodic and cyclic discharge of blood, mucus and cellular debris from the uterus, which is mainly because of periodic progesterone withdrawal after ovulation in no fertile cycles. It is initiated in response to change in the hormonal production from the ovaries and these ovaries are controlled by the pituitary and hypothalamus. (**Sheth, 2011**)³.

One menstrual cycle is usually lasting about 27- 29 days and this time period is measured from the first day of one period to the first day of next menstruation. The duration of bleeding is about three to five days and estimated blood loss is between 50 and 200ml. The regular cycle of twenty – eight day's seen only in a small proportion of women. A deviation of two or three days from the 28 days rhythm is quite common. The menstrual rhythm depends on the hypothalamus – pituitary ovarian action but the amount of blood loss mainly depends upon the menorrhoea-monthly flow Dysmenorrhoea literally means painful menstruation. But a more suitable definition for dysmenorrhoea is painful menstruation and it is able to incapacitate day - to - day activities of a woman. (**Dutta, 2010**)⁴.

The primary dysmenorrhoeal pain starts a few hours prior or just with the onset of menstruation. The duration of pain usually lasts for few hours may extend to 24 hours but seldom persists beyond 48 hours. The pain is spasmodic and it mainly located in the lower abdomen; sometimes radiate to back and medial aspect of thighs. Systemic discomforts like diarrhoea, giddiness, fatigue, nausea, vomiting, and headache may be present and it may be associated with vasomotor changes like pallor, cold sweats or occasional fainting. Rarely syncope and collapse in severe cases may be associated (**Campell & Monga, 2006**)⁵.

Various remedial exercises were advocated for dysmenorrhoea like floor polishing movements, bending, twisting, swaying, and rowing movements and other similar routines. These must be done for at least 15 minutes daily between the periods. These can be done in addition to or instead of various games. Muscle stretching exercises mean moving the muscles in the different directions from which it normally contracts or work. Stretching can help to gain muscle strength and tone. It also prevents injuries and relives stress. Various

types of muscle stretching exercises were advocated to reduce dysmenorrhoea. It was also seen that among athletes the incidence of dysmenorrhoea was lower probably due to anovulatory cycles. (Tylor, 2011)⁶.

Physical exercises and primary dysmenorrhea are interrelated with each other, exercise can decrease the symptoms related to the primary dysmenorrhea like pain, stress, mood changes and finally exercise improve health status also. Behavioural interventions such as exercise may not reduce primary dysmenorrhea, but also decrease the need for pharmacological methods to control menstrual cramps and other associated symptoms. Exercise today is an important part of normal life of many women. It is proved thing that exercise can make many health benefits for women who exercise regularly. Like exercise improves cardiovascular status, increase bone mineral content, decrease stress and premenstrual syndrome.

“A STUDY TO ASSESS THE EFFECTIVENESS OF MUSCLE STRETCHING EXERCISES ON PAIN AND DISCOMFORT DURING PRIMARY DYSMENORRHOEA AMONG GDA STUDENTS (GENERAL DUTY ASSISTANT) IN DDU-HP DEPARTMENT KALAAMB, DISTT SIRMOUR”.

OBJECTIVES OF THE STUDY

1. To identify the prevalence of primary dysmenorrhoea among GDA students (General Duty Assistant).
2. To assess the degree of pain and discomforts during primary dysmenorrhoea among GDA students (General Duty Assistant).
3. To evaluate the effectiveness of muscle stretching exercise on pain and discomforts during primary dysmenorrhoea.

REVIEW OF LITERATURE

Loto et al., (2012)⁷ conducted a study assess first year female adolescents in a Nigerian university (n=49) for primary dysmenorrhoea. The prevalence rate of primary dysmenorrhoea was 53.3(per cent) and most of the students experienced pain at the onset of menstruation. About half of the students explored that pain during menstruation interferes their normal day to day activities. The independent predictors of primary dysmenorrhoea were longer days of menstruation, younger age at menarche and less scores on extraversion scale. Therefore, the college health workers must screen routinely for primary dysmenorrhoea among students and offer treatment. As dysmenorrhoea reportedly affects school performance and attendance, more importance must be given to providing health awareness on primary dysmenorrhoea to students.

Ohde et al., (2012)⁸ conducted a prospective cohort study to determine the epidemiology of primary dysmenorrhoea in Japanese women of menstrual age. Study was conducted by using health diary in a sample representation of Japanese women. Information of health care use was also collected. The sample size was 823. The data were collected by menstrual distress scale and numerical pain scale. And this is concluded by primary dysmenorrhoea is common health problem in Japanese women. Primary dysmenorrhoea is significantly associated with younger age and employment status.

Okora et al., (2012)⁹ conducted a descriptive cross – sectional study conducted to evaluate the participants self – reported knowledge of dysmenorrhoea types and symptoms and to identify its severity factors that make pains worse and its negative academic impacts among a group of female university Maiduguri, located at Bama Road. Non probability convenient random selected 289 participants were interviewed using a self – administered pre-tested structured, mostly closed ended questionnaire. This study is conducted by outstanding high number of these female students did not know the type of dysmenorrhea impacts negatively on their academic performance which may be as a result of inadequate management among the studied participants.

Marzouk et al., (2013)¹⁰ conducted a study with randomized blind clinical trial of cross over design, to determine the effect of aroma therapy and abdominal massage on menstrual pain during primary dysmenorrhoea among nursing students. The setting of the study was in the nursing department at Mansoura University in Egypt. The sample size was 100 and sampling technique was purposive sampling technique. In the first treatment phase group one (n=46) received aromatherapy and abdominal massage one time daily for seven days before the menstruation using essential oil. Group two received the same intervention but the placebo oil. In the second group the two groups switched to alternative regimen. These results suggested that aromatherapy is effective in alleviating menstrual pain, its duration and excessive menstrual bleeding.

Methodology

The sample size was 30 students aged in 16-23 years. The sample were divided by simple randomization into experimental group and control group. The data collection tool was requested to perform the active muscle stretching exercises for 8 weeks at home. This study concluded that muscle stretching exercise are effective in reducing pain intensity, pain duration of girls with primary dysmenorrhoea ($P < 0.001$).

DESCRIPTION OF INTERVENTION

In this study included six types of muscle stretching exercises for abdominal, pelvic, and groin regions.

In the first stretching exercise, told the subjects to bend their trunk forward from the hip joint so that the shoulder and back was on a straight line. And the upper body was parallel to the floor. Duration of holding time was 5 seconds; repetition was 20 times.



In the second stretching exercise, requested the subjects to raise their one heel from the floor, then repeat the exercise with the other heel alternatively. This exercise needed to perform 20 times.



In the third exercise, requested the subject to spread their feet wider than shoulder width, place trunk and hands in forward stretching mode; after that completely bend the knees for maintaining squatting position. The duration of this position was 5 seconds. Again, raised the body and repeated the same movement 20 times.



In the fourth exercise, requested the subject to spread their feet wider than shoulder width. Then told the subject to bend and touch left ankle with their right hand while putting their left hand in a stretched position above the head, so that the head is in the middle and turn the head and look for the left hand. This exercise needed to repeat alternatively for the opposite foot with the same method. The exercise repeated alternatively 20 times for each the body and repeated the same movement 20 times.



In the fifth exercise, requested the subject to lie down in supine position after that the shoulders, back, and feet keep on the floor. Next the knees should bend with the help of hand and bring it towards the cheek.

DEVELOPMENT AND DESCRIPTION OF TOOL

The data collection tool was primary dysmenorrhoea screening questionnaire to screen out the subjects with primary dysmenorrhoea from population, baseline data collecting questionnaire for identifying the demographic characteristics of subject, primary dysmenorrhoea discomfort assessing rating scale and standardized numerical pain scale for assessing pain during menstruation.

The tool consisted of

TOOL I: Baseline Data Collecting Questionnaire

TOOL II: Primary dysmenorrhoea screening questionnaire

TOOL III: Part 1

Rating scale for assessing the discomforts during primary dysmenorrhoea.

Part 2

Numerical Pain scale for measuring the pain during primary dysmenorrhoea.

(Jensen & Mcfarland 1993)¹¹

TOOL I

To assess the baseline characteristics of subjects consisted of 7 items seeking information about background of subjects. (Age in years, age at menarche, height, weight, BMI, and LMP.)

TOOL II

Primary dysmenorrhoea screening questionnaire: To screen out the students with primary dysmenorrhoea from total population and this questionnaire consisted of 10 items seeking information about primary dysmenorrhoea. The alternative gave as normal, mild, moderate, and severe and these responses were scored by 0, 1, 2, and 3.

Final scoring of primary dysmenorrhoea screening questionnaire:

Score

Mild primary dysmenorrhoea: 8-14

Moderate primary dysmenorrhoea: 15-22

Severe primary dysmenorrhoea: 23-30

Does not have primary dysmenorrhoea: 0-7

TOOL III**Part 1**

Rating scale helps to detect discomforts of primary dysmenorrhoea. The tool consisted of 36 items. The alternative gave as frequently, one to three times, never and these responses were scored by 3, 2, and 1. Each answer scored based on alternative responses as 3, 2, 1 and the total score was 108.

Part 2

Numerical pain scale: The scale consisted of ranked choices that are no pain, mild pain, moderate pain, severe pain very severe pain and worst possible pain. The pain scale is

divided into 10 parts. Each choice was assigned by a corresponding number. The scale was a standardized scale. (Jensen & Mcfarland 1993)¹¹

Reliability of the tool:

Split-half reliability was used to check the reliability of primary dysmenorrhea discomfort rating scale and score (correlation co-efficient, $r = 0.72$) shown that the primary dysmenorrhoea discomfort rating scale is reliable in assessing discomfort during menstruation.

DATA ANALYSIS AND INTERPRETATION

Table 1: Distribution of subjects according to their demographic characteristics

N=30

S.no	Demographic variable	Frequency	Percentage
1.	Age In Years		
	a. up to 20	17	56.00
	b. 21 & above	13	44.00
2.	Age At Menarche		
	a. Up to 13	17	56.00
	b. 14 and above	13	44.00

3.	Body Mass Index		
	a. Up to 18	07	23.00
	b. 18.1 – 20	13	43.00
	c. 20.1 and above	10	33.00

Table 1: Shows distribution of the demographic variables of 30(General Duty Assistant), out of 30 students more than half of the students (56 per cent) were aged 20 and below 20. Among 17 students about 56 percentage of students attained menarche at 13 and below 13 years of old. About 44 percentage of students attained menarche at 14 and above 14 years. On the basis of Body Mass Index about 43 percentage of students, the body mass index were in between 18.1 to 20, 23 percentage of students body mass index were up to 18 and 33 percentage of students were body mass index 20.1 and above.

SECTION III: DESCRIPTION OF DEGREE OF PAIN AND DISCOMFORT DURING PRIMARY DYSMENORRHOEA AMONG GDA (General Duty Assistant) STUDENTS

N=30

SI. NO	Degree Of Pain	Frequency (f)	Percentage (Per Cent)
1	Up to 5	10	33.00
2	6 to 7	12	40.00
3	8 & above	8	26.00

Table 2: The degree of pain during primary dysmenorrhoea among GDA (General Duty Assistant) Nursing students before intervention (pre-test)

Table: 2 shows that out of 30 students about 10 (33 per cent) of students the degree of pain were from 0 to 5, next 12 students (40 per cent) the degree of pain were from 6 to 7 and the remaining 8 students (26 per cent) the degree of pain were 8 and above 8 that means up to 10.

CONCLUSION

The following conclusion is made on the light of above findings that most of the students suffer moderate to severe pain and discomfort during menstruation. Muscle stretching exercises are the effective, simple, non-medicinal measure to reduce the pain and discomfort during primary dysmenorrhoea. This research can make an awareness regarding how to manage primary dysmenorrhoea pain and discomfort among students,

College lectures and parents. Muscle stretching exercises are the effective, safe, less time consuming form of therapy for students with primary dysmenorrhoea. It can be implemented into clinical practice and health education in order to increase the quality of life for students with primary dysmenorrhea

IMPLICATIONS:

The world around us is growing very fastly. Society has tremendous technological advancement in day to day life practice to managing pain that arise from unsound body mechanism. Although the natural methods of pain control is acceptable and accessible to everyone in this world because the natural methods does not have any side effect. Therefore the health care providers have the responsibility for providing support and comfort to female

adolescents during menstruation.

Nursing Practice

- A midwife can practice planned education programme to impart knowledge and skill in management of primary dysmenorrhoea.
- Midwife can teach medicinal, non-medicinal, and conventional practices for managing primary dysmenorrhoea.
- Midwifery nurses can conduct camp for school and college students regarding how to manage primary dysmenorrhoea.

Nursing Education

- This study helps the student nurses to gain more idea regarding how to differentiate primary dysmenorrhoea from secondary dysmenorrhoea.
- The nurse educator can encourage the student nurses to conduct research based on the other complementary therapies for managing primary dysmenorrhoea.
- Nurse educator can encourage the student nurses to educate the health professionals about primary dysmenorrhoea, its severity and its impact on adolescent health.

Nursing Research

- This study gives guidance for further studies to conduct in this area.
- This is important to identify the existing prevalence rate, risk factors, and medicinal, non-medicinal, and complementary therapies of primary dysmenorrhoea.
- The evident from other literatures indicates more research in the area of primary dysmenorrhoea management.

Nursing Administration

- Nurse Administrator can plan and organize camp for school and college students regarding the complementary therapies for managing primary dysmenorrhoea.
- Programme for nurse midwives to update their knowledge regarding menstruation related complications of adolescents.
- Local mass media can be used to popularize muscle stretching exercise as a conventional therapy for managing primary dysmenorrhoea.

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