

Original Research Article

Prevalence of Musculoskeletal Pain and Awareness of Physiotherapy in Primary Dysmenorrhea among Female Students of Adesh University, Bathinda

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ABSTRACT

Background: Dysmenorrhea means pelvic or lower abdominal cyclic or recurrent pain or difficult menstrual cycle and may be classified as primary, leading to poorer quality of life. Major symptom is lower abdominal or lumbar region pain, followed by other symptoms such as nausea, vomiting, headache and diarrhea. Musculoskeletal pain is predominant symptom experienced by menstruating female and has substantial impact on the personal as well as on social life as it leads to absenteeism from the work or from the school. This study aimed at investigating the prevalence of musculoskeletal pain in Primary Dysmenorrhea among female students of Adesh University, Bathinda. And to raise awareness of physiotherapy in Primary Dysmenorrhea among female students of Adesh University, Bathinda.

Methodology: A cross-sectional study was conducted on female students of Adesh University, Bathinda. After the approval of College Research Committee and Adesh University Ethical Committee, a notice was displayed on notice boards of girl's hostel no 1&2 of Adesh University Bathinda. Subjects were recruited by convenient sampling. Verbal as well as written consent was obtained from participants and screened according to the inclusion and exclusion criteria. The data was collected with the help of Nordic Questionnaire, Numeric Pain rating scale.

Result: The result of this study shows that the students have high rate of Low back pain i.e. 96.5% and Hips/thighs pain 89.5%. The study revealed that majority of female suffers from moderate intensity of pain during menstruation.

Conclusion: The study concluded that most of female students were suffering moderate intensity of pain during menstruation & low back pain was more prevalent. Thus the various physiotherapy techniques were described with the help of pamphlets in order to raise the awareness among female students.

Key Words: Musculoskeletal pain, Female Students, Dysmenorrhea, menstruation, Nordic Questionnaire.

INTRODUCTION

Menstruation is a periodic and temporary genital bleeding, lasting from menarche to menopause. It may be defined as cyclic uterine hemorrhage dependent on endometrial disintegration, which occurs approximately in a normal cycle of 21 to 45

days, with 2 to 6 days of flow and mean blood loss of 20 to 60 ml, generally lasting for 40 years. Dysmenorrhea, on the other hand, is pelvic or lower abdominal cyclic or recurrent pain, associated to menstruation. It is the most common gynecological

complaint among young women, with prevalence between 43 and 93%.^[5]

According to its clinical presentation, primary dysmenorrhea is characterized by lack of visible structural abnormality with major symptom is lower abdominal or lumbar region pain, followed by other symptoms such as nausea, vomiting, headache and diarrhea.^[5] Musculoskeletal pain is predominate symptom experienced by menstruating female. Musculoskeletal pain has substantial impact on the personal as well as on social cost as it leads to absenteeism from the work or from the school.^[5]

Menstruation is a physiological cycle which plays an important role in women's physical, emotional, developmental and reproductive growth.^[1] This periodic change transmits the female into womanhood and motherhood. During this phase, a woman undergoes drastic changes physically and psychologically and approximately 50-70% of women have dysmenorrhea symptoms in some moment of life, being that approximately 10% become unable to perform their routine activities.^[5]

Menstrual pain is a form of dull pain, non-localized and pain site can't be pin point. This may be because the featured pain is felt in regions far away from the myofascial trigger point making it more confusing to locate the correct initiating area of the pain. Although, this pain is caused by tissue damage but induces unpleasant emotional experience, as pain is the most common clinical symptoms during menstruation which make female bind to the bed or in the boundaries of the house. Thus quality of life of females suffering from pain and cramps get affected.

The prevalence of physical symptoms during menstruation is abdominal cramps (90.7%), backache (82.7%), tiredness (80.4%) pelvic pain (74.0%) and bloating (65.2%) the most reported.^[2] About 15- 50% of women^[1] and 90% of adolescents are affected from menstrual pain.^[3] A greater prevalence was generally

observed in young women, with estimates ranging from 67% to 90% for those aged 17-24 years.^[4]

Excessive production and release of prostaglandins during menstruation by the endometrium causes hyper-contractility of the uterus, leading to uterine hypoxia and ischemia, which are believed to cause the pain and cramps in primary dysmenorrhea. Based on this understanding, pharmacological therapies for primary dysmenorrhea focus on alleviating menstrual pain and relaxing the uterine muscles by using non-steroidal anti-inflammatory drugs (NSAIDS) or oral contraceptive pills. Managing dysmenorrhea with NSAIDS and oral contraceptives is reported to be associated with side effects such as nausea, breast tenderness, inter menstrual bleeding, hearing and visual disturbances.

Therefore, finding an effective non-pharmacological method and to target affected female population will be of great importance. Physiotherapy, a different treatment option is the practice of physical activities, for improving pelvic and extra-pelvic organs functioning by adjusting metabolism, hydroelectric balance, hemodynamic conditions and blood flow, thus promoting a phenomenon known as analgesia by physical exercise.^[5]

In light of the above, this study aimed at investigating the prevalence of musculoskeletal pain during primary Dysmenorrhea and to raise awareness regarding efficacy and accuracy of physiotherapy treatment for promoting better quality of life.

MATERIALS & METHODS

Research Design: Cross sectional Study

Research Setting: Adesh University, Bathinda

Population and Area: Female Students of Adesh University, Bathinda

Sample Size: 200 Subjects

Sampling: Convenient Sampling

INCLUSION CRITERIA

- Female students of Adesh University, Bathinda
- Marital status : Unmarried and willingness to participate
- Age : 18 years and above

EXCLUSION CRITERIA

- Subjects performing Exercises and sports person.
- Irregular menstrual cycle
- Current major medical and psychological problems
- Receiving any hormonal therapy
- Administration of contraceptives
- Any history of gynecological surgery
- Peripheral nerve disorders and Radiculopathy

TOOLS

- NPRS (Numeric Pain Rating Scale): The pain intensity scale was categorized from zero (no pain) to ten (maximum pain), and pain score and pain severity were categorized and evaluated as follows:
- Moderate Pain (Score of 4-7)
- Mild Pain (Score of 1-3)
- Severe Pain (Score of 8-10)
- Nordic Questionnaire: The Questionnaire consists of structured or multiple choice variants and can be used as a self-administered questionnaire or in interviews. There are two types of Questionnaire: a general questionnaire and specific ones focusing on the low back and neck/shoulders. The purpose of the general questionnaire is simple surveying, while the specific ones permit a somewhat more profound analysis. A Questionnaire was constructed in which the human body (viewed from the back) is divided into 9 anatomical regions. Completion is aided by a body map to indicate nine symptom sites being the neck, shoulders, elbows, wrists/hands, upper back, low back, hips/thighs, knees and ankles/feet. Respondents were asked if they had any musculoskeletal trouble during the

menstruation and have been prevented from normal activities during the menstruation.

- Pamphlets for Physiotherapy Awareness: Recommended Physiotherapy treatment was mentioned in Pamphlets that included:
 - Therapeutic exercises (Kinesiotherapy): a set of stretching exercises, Manual therapy, including spinal manipulation, Pilates exercises, Aerobic Exercises.
 - Electrotherapy including Transcutaneous electrical nerve stimulator and interferential therapy, cryotherapy, thermotherapy
 - Therapeutic massage.

METHODS

This study was a cross-sectional study that was conducted on Female students of Adesh University, Bathinda. After getting the approval of College Research Committee and Adesh University Ethical Committee, to inform the subjects; a notice was displayed on notice boards of girl's hostel no. 1 & 2 of Adesh University Bathinda, Punjab. After obtaining general assessment & demographic Questionnaire Voluntaries were selected by convenient sampling. Verbal consent was obtained from participants and screened according to the inclusion and exclusion criteria. Total 239 subjects were approached & informed. Those who fulfilled the inclusion criteria and were willing to participate in the study were included. 200 subjects were selected conveniently for the study. Out of 239 Subjects 200 subjects met the inclusion criteria, 46 subjects were from College of Physiotherapy 154 were from other colleges (Paramedical, Nursing & Pharmacy College). Written consent was taken from them and an explanatory talk on musculoskeletal pain during menstruation was given to all in order to make them aware. Nordic Questionnaire and Numeric Pain Rating Scale (NPRS) were distributed to all participants in a group of 3-4 subjects by the investigator. The completely filled

forms were collected. Each participant had given 20 minutes to fill both forms in the presence of investigator and subjects were free to ask any queries regarding any question from the forms. Subjects were asked regarding Physiotherapy Interventions for the management of Primary dysmenorrheal symptoms like musculoskeletal pain & cramps. Afterwards, an advised physiotherapy protocol pamphlets that included: Exercise Therapy, Electrotherapy, and Therapeutic Massage were distributed to make them aware for reduction of musculoskeletal pain and cramps with physiotherapy management of primary dysmenorrhea.

RESULTS

The data was statistically analyzed by using mean percentage to assess the prevalence of musculoskeletal pain during menstruation. The result of the present study showed that Lower back pain was more prevalent and elbow or wrist joint was least painful during menstruation in female students.

Prevalence of musculoskeletal pain during menstruation were Lower back pain-96.5%, Hip/Thigh pain-89%, Ankle/Foot pain-24.5%, Knee pain-23%, Upper back-39%, Neck pain-12.5%, shoulder pain-11%, Wrist/Hand-6% and Elbow pain-2.5%.

The most common sites were lower back, hips/thighs, upper back, ankle/feet and knees that affected the majority of subjects during menstruation. The least involved sites were wrist/hand, elbow, neck, shoulder.

Numerical pain rating scale scoring of musculoskeletal pain during menstruation was Moderate 48.5%, Severe 47.5%, Worst pain 2.5% and Mild pain 1.5%. The results of this study revealed that majority of women suffer from moderate intensity of pain during their period cycle.

Table 1.1: Represent the mean percentage of musculoskeletal pain during menstruation.

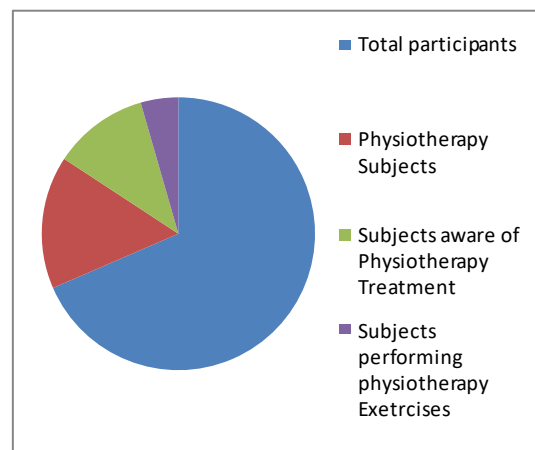
Regions	Pain Percentage
Neck Pain	12.5%
Shoulder pain	11%
Upper back pain	39%
Elbows pain	2.5%
Wrists\hands pain	6%
Lower back pain	96.5%
Hips/thighs pain	89.5%
Knees pain	23%
Ankles/feet pain	24.5%

Table 1.2: Represents mean percentage of Numeric Pain rating scale of musculoskeletal pain during menstruation.

Intensity	Percentage
Mild pain	1.5%
Moderate pain	48.5%
Severe pain	47.5%

Table 1.3: Represents the percentage of Awareness among Female subjects.

Subjects	Percentage of Subjects
Physiotherapy Subjects	23%
Subject aware of Physiotherapy Treatment	16.5%
Subjects performing Physiotherapy Exercises	6.5%



DISCUSSION

This study examined the prevalence of musculoskeletal pain with Nordic questionnaire. The result of this study showed that the pain intensity was more in low back and hip and thighs as compare to other joints. The severity of the musculoskeletal pain depends on the severity of the menstruating pain. The results of present study was coinciding with study of Jang-won Lee which stated that pain level and pain area in the women suffering musculoskeletal pain were similar to those suffering from menstruation pain. The pain is felt in the same region, during the menstruation phase.

In present study, results are in accordance with the study of Derek R. Smith who suggested that reproductive symptoms and menstruation disorders may influence the development of low backache. Also, in this study the musculoskeletal pain is more in low back i.e. 96.5%. The result of present study showed that subjects were confused in recalling the pain area last 7 days and last 12 months i.e. other two components of the Nordic Questionnaire. Pain is extremely subjective symptom and it has been very difficult to quantify. Researchers have, therefore, found out a way to measure pain by various scoring systems like Numerical pain rating scale (NPRS). Depending on pain score obtained on NPRS, pain was divided into mild (pain score 1-3), moderate (pain score 4-7), severe/worst pain (pain score 8-10). The results of this study revealed that majority of female suffer from moderate (pain score 4-7) intensity of pain during their menstrual cycle.

Today, different methods of treatment for primary dysmenorrhea have become prevalent and uncomplicated treatments have found a special place in the research of researchers in the treatment of dysmenorrhea.

Females with dysmenorrhea can choose or select the treatment option according to the intensity of pain on NPRS. Females having severe pain (pain score 8-10) requires limitation of activity, analgesics and rest so they can go for electrotherapy treatment like TENS or IFC (Interferential currents). Females having moderate pain (pain score 4-7) requires analgesics and no need take rest so they can go for electrotherapy treatment like analgesic modalities as well as can opt for exercise therapy. Females having mild pain (pain score 1-3) do not require analgesics and no need to take rest so they can go for exercise therapy regularly. ⁽⁷⁾

CONCLUSION

The study concluded that the most of female students were suffering from

The results of some studies proven that Heat, transcutaneous electrical nerve stimulator, Kegel exercises, Aerobic exercises and yoga each significantly reduced pain severity. Findings from various studies indicate that exercise therapy and physical activity are related to decreasing dysmenorrhea. The mechanism behind this has been discussed in some studies which state that the onset of prostaglandin accumulation in this area delayed the onset of pain; exercise during pain can lead to faster transfer of wastes and prostaglandins from the uterus. On the other hand, regular exercise plays an important role in reducing stress and helps improve blood circulation and increases levels of endorphins and nerve transducers. Inhibition of stress is one of the most common causes of the relationship between exercises and menstruation.

In fact, the degree to which people respond to pain is different so female with dysmenorrhea may respond differently to different exercises. Menstrual pain is probably due to increased uterine muscle contraction, which is nerve mediated by the sympathetic nervous system. Stress helps to increase the activity of the sympathetic nerves and may increase the contraction of the muscles of the uterus and increase the pain of the menstrual period. Exercise by reducing stress can reduce the activity of the sympathetic nervous system and increase the activity of parasympathetic nervous system thus can the symptoms of menstruation can be reduced. So selection of treatment usually depends on parameters such as practical use, expense, and achievability, in addition to evidence of efficacy. No adverse effects were observed regarding the physiotherapy treatments so Females can individually select the treatment options according to the perception of pain and according to their need. ⁽⁶⁾

musculoskeletal pain during menstruation. Hence from the result of the current study, concluded that the lower back pain and hips/thighs pain was more common in

female students during menstruation. This study also concluded that the majority of female suffer from moderate intensity of pain during their period cycle. The subjects were confused in recalling the pain area from the last 7 days and the last 12 months i.e. other two components of the Nordic Questionnaire Out of 200 subjects 33 subjects were aware of Physiotherapy treatment & Exercises.¹³ Subjects were performing the physiotherapy Exercises for the management of Primary Dysmenorrhea induced symptoms by themselves. 12 Subjects were aware of Physiotherapy Treatment & they were receiving clinical treatment during the symptoms & were performing exercises occasionally. A very small number of subjects were aware of Physiotherapy treatment options & performing physical exercises for the management of Primary Dysmenorrhea.

Although Medications are available to treat the pain, these produce side effects or incomplete pain relief in a substantial proportion of women with dysmenorrhea. The magnitude of effectiveness of these physiotherapy interventions may or may not be clinically worthwhile but the costs and risks of these interventions are low.

The number of publications on physiotherapeutic techniques is still small, so there is need to develop quantitative and qualitative studies with higher methodological rigor with regard to physiotherapeutic maneuvers.

Limitations Of The Study

Within the context of the study, there exit several limitations that may have affected the results:

- The sample size of study was small
- Samples were chosen from only one area by using convenient sampling method

- No clinical assessment and treatment was given to the subjects but awareness through pamphlet was given to all subjects

Conflict Of Interest: The authors have no conflicts of interest to disclose.

Ethical Clearance: Authors certify that the study was approved by Research Committee and Ethical Committee of Adesh University, Bathinda

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