



ANXIETY IN DYSMENORRHEA : A PILOT STUDY

Physiotherapy

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ABSTRACT

OBJECTIVES: The objective of this paper was to examine the relationship between primary dysmenorrhea and anxiety in nulliparous females.

PARTICIPANTS: Twenty-five postmenarcheal females who were within the age of 18-25 years were found eligible to participate in the study.

METHOD USED: The data was collected by the use of Hamilton Anxiety Questionnaire and Women's Health Questionnaire.

RESULTS: The results were obtained by using Karl Pearson Correlation in between women's health questionnaire (mean value-8.6 and standard deviation +3.01) and Hamilton anxiety questionnaire (mean value-17.08 and standard deviation +9.75). The r value for WHQ and HAM-A came out to be 0.687 with P value of 0.00 which implicates the result to be significantly positive.

CONCLUSION: In the present study the statistical analysis revealed that anxiety is related to Primary Dysmenorrhoea. Therefore, because of this association, attention should be given to the mental health of females from the onset of the menarche.

KEYWORDS

Anxiety, Primary Dysmenorrhea, Pain, Menstruation, Young females.

INTRODUCTION

Primary dysmenorrhea is defined as a cramping pain in the lower abdomen occurring prior or during menstruation, in the absence of any other diseases such as endometriosis. Primary dysmenorrhea is by far the most common gynaecologic problem in menstruating women with prevalence rates as high as 90 %, out of which 15% of women suffer from extreme pain.^{1,2} It is a well-known cause of absenteeism and reduced health-related quality of life in women resulting in substantial economic losses to the whole community. It is so common that many women fail to report it in medical interviews, even when their daily activities are restricted. Primary dysmenorrhea is distinguished from secondary dysmenorrhea, which refers to painful menses resulting from pelvic pathology such as endometriosis.³

The abnormal uterine activity in primary dysmenorrhea is considered to be caused by excessive productions of prostaglandins and leukotriene which mediate hyperalgesia and inflammatory pain and cause vasoconstriction, ischemia and myometrial contraction. Certain studies hypothesised that pain free state in primary dysmenorrhoea may be associated with morphological alterations in brain, not only in the areas responsible for pain transmission but also in areas of emotional regulation. Adding to this, it's also been suggested that areas involving emotional regulation and disinhibition of pain may exhibit positive and negative relationship with clinical symptoms, respectively. This can be explained due to the chronic visceros-nociceptive drive of cyclic nature in primary dysmenorrhea, indications of central sensitisations (hyperalgesia) and enhance functional brain processing indicates a substantial central reorganisation of brain in primary dysmenorrhoea which may also occur in emotion-related brain regions such as "state" anxiety, stress, and negative effects. Thus, probability of association of primary dysmenorrhoea with structural abnormalities of brain are quite high³.

Anxiety was defined by Freud as "something felt," an emotional state that included feelings of apprehension, tension, nervousness, and worry accompanied by physiological arousal⁴. Dysmenorrhea impedes successful psychosocial and cognitive development during adolescence because of its effects on quality of life and its contributions to absenteeism from school and work².

An association between psychological factors and dysmenorrhea has been described since 1978. There is increasing evidence that psychological disorders such as depression or anxiety coexist with dysmenorrhea, and these conditions may correlate with chronic pain⁵. And thus, the study was conducted to examine the relationship between primary dysmenorrhea and anxiety in nulliparous females.

METHODOLOGY

OUTLINE OF THE STUDY

The study was undertaken to examine the relationship between primary dysmenorrhea and anxiety in nulliparous females.

SAMPLE SIZE

A sample of 25 subjects was selected on the basis of inclusion and exclusion criteria. The subjects were explained in detail about the present study. After which the subjects were asked to sign the informed consent form.

STUDY SUBJECTS

Subjects were recruited from:

- Rehabilitation Centre, Department of Rehabilitation Sciences, Jamia Hamdard.

DEFINITION OF STUDY SUBJECT

Nulliparous females with primary dysmenorrhea within the age group of 18-25 years.

METHOD OF SAMPLING

The subjects were conveniently selected after signing consent form according to inclusion and exclusion criteria.

ELIGIBILITY CRITERIA

Inclusion criteria: Subjects were included if they:

- Nulliparous women between 18 and 25 years
- Have primary dysmenorrhoea
- Have NPRS 5 or above
- Non-smokers
- Willing to give signed consent form

Exclusion criteria: Subjects were excluded if they:

- Suffering with secondary dysmenorrhoea.
- Suffering with any other current gynaecological condition or medical condition like, PCOS.
- Have irregular menstrual pattern.
- Athletes or subjects who were into some training regimen.

STUDY DESIGN

The subjects were assessed and scored on the basis of:

- 1) Women's Health Questionnaire (WHQ)
- 2) Hamilton Anxiety and Depression Scale (Ham-A)

The WHQ assess the domains of physical and emotional health on a four column scale. It is widely used to assess the health related quality of life in healthy women and in those seeking help for specific physical or emotional problem. The four columns include: Column-A (Nervous tension and irritability); Column-B (Menstrual Relief); Column-C (Pelvic congestion) and Column-d (Ovarian support). The WHQ is divided into various sections; section 1-7 deals with menstruation and section 8-11 deals with menopause.

The HAM-A was one of the first rating scales developed to measure the severity of anxiety symptoms, and is still widely used in both clinical

and research settings. The scale consists of 14 items, each defined by the series of symptoms and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety).

RESULTS

The results were obtained by using Karl Pearson's Correlation in between women's health questionnaire (with mean value of 8.6 and standard deviation ± 3.01) and Hamilton anxiety questionnaire (with mean value of 17.08 and standard deviation ± 9.75). The *r* value for WHQ and HAM-A came out to be 0.687 with *P* value of 0.00 which implicates the results to be significantly positive.

TABLE-1 : CORRELATION BETWEEN WOMEN'S HEALTH QUESTIONNAIRE AND HAM-A SCALE.

	N	MEAN	SD	CORRELATION	P
WHQ	25	8.6000	3.01386	0.687	0.00
HAM-A	25	17.0800	9.75927		

DISCUSSION

The aim of the present study was to find out the relationship between primary dysmenorrhea and anxiety in nulliparous females. As per the studies conducted earlier, there is a positive associated relationship between pain and anxiety. It is estimated that anxiety can predict from 16 to 54% of the variance of chronic pain in terms of severity, disability and pain behaviour⁵⁻⁷.

A strong correlation was established between WHQ and HAM-A which suggests a direct relationship between WHQ score and anxiety in the present study. Thus, higher value of WHQ score will result in higher value of anxiety score in HAM-A and lower value of WHQ score will result in lower value of anxiety score in HAM-A. In addition, researches conducted earlier suggested a positive correlation between dysmenorrhea, anxiety and depression⁷⁻⁹.

Several factors such as mood, social interactions, academic performance, and physical activities are somehow found to be adversely affected by primary dysmenorrhea. Absenteeism from corresponding place of work or school, poor concentration, and failure to do homework are also one of the reported adverse effects of primary dysmenorrhea^{1,2,7-9}.

There are certain physical, emotional and psychological underlying mechanisms that results in various anxiety disorders. Among these, psychological mechanisms effects on anxiety has not been completely confirmed. A study conducted earlier tried to associate primary dysmenorrhea with altered brain mechanisms. They conducted the study in two groups where one included experimental group (experimental group-17 subjects) that comprised of right handed primary dysmenorrhea subjects and another included controlled group- 16 subjects who were right handed healthy subjects. The main findings of this study was increased regional glucose metabolism in thalamic, orbitofrontal and prefrontal areas and decrease regional metabolism in lateral somatic sensorimotor areas when comparing the pain free state with the pain state in the two groups. Analysis of difference of differences in between the two subject groups yielded similar findings albeit at lowered thresholds. This indicates that disinhibition of the thalamo-orbitofrontal-prefrontal network may underpin enhanced negative effect and altered pain and perception in primary dysmenorrhea. Furthermore, a compensatory mechanism may account for the hypo-metabolism in sensorimotor areas in face of excessive viscera-nociceptive input^{3,9}.

A study conducted by Cheng-HaoTu et al¹⁰ investigated whether total and regionally grey matter volume increases or decreases in primary dysmenorrhea patients relative to healthy matched controls. The study included 32 primary dysmenorrhea subjects and 32 healthy matched subjects. It was manifested that areas exhibiting morphological changes comprised constellation of discrete, but interacting systems involved in pain-processing. In regions involved in pain transmission, higher level sensory processing, and affect regulation, abnormal decreases were noted whereas in regions involved in pain modulation and in regulation of endocrine function, increases were observed. It was established that in primary dysmenorrhea subjects, abnormal grey matter changes were present even in the absence of pain which

indicates that menstrual pain, like any can effect longer lasting central changes⁷.

The sympathetic nervous system is found to be one of the potential links between pain and anxiety and it is determined that on the stimulation of sympathetic nervous system, nociceptive threshold decreases which increases the spontaneous activity of nociceptors and neuromas. Moreover, the young adult brain has been described as being more vulnerable to menstrual pain. The menstrual pain experienced by the females can be considered as stressor. It is widely known that situations that are stressful or uncontrollable also induces complex neuronal or hormonal processes which can be destructive for certain organ systems if are present chronically. In addition, down regulation of benzodiazepine receptors in the frontal cortex are induced by stress and it also stimulates the hypothalamic-pituitary-adrenal axis whose responses are found to predispose to pain, anxiety or both⁸.

CONCLUSION

In relation to the correlation, the study reports a statistically significant correlation between WHQ and HAM-A scales in the menstrual cycle of females. This suggests that higher value of WHQ scoring will increase the amount of anxiety and the lower the value of WHQ scoring the lower will be the anxiety. Therefore, because of this association, attention should be given to the mental health of females from the onset of menarche, screening of mental health should be done on regular basis in menstruating women, counselling with available treatment options.

CONFLICT OF INTEREST: NONE

SOURCE OF FUNDING: NONE

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