IMPACT OF CRANIOSACRAL THERAPY ON PAIN DURING DYSMENORRHEA

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ABSTRACT

Background: Menstrual health is an essential element of overall health since most women menstruate between menarche and menopause. Menstruation, on the other hand, routinely and frequently has a negative impact on the physical, emotional, and social well-being of tens of millions of women worldwide. Furthermore, many women will experience other symptoms associated with their menstrual cycles, such as pain, dysmenorrhea, anxiety, depression, and fatigue, which require attention in order to achieve early diagnosis of reproductive health concerns such as endometriosis, premenstrual syndrome, and premenstrual dysphoric disorder and achieve optimal health. Dysmenorrhea is one of them. Dysmenorrhea is one of the most prevalent causes of negative impacts on women's lives, and it can lead to activity restrictions. Dysmenorrhea is the cramping pain associated with menstruation. They are further classified into two groups based on pathophysiology. The lack of any recognised pelvic illness is characterised as primary dysmenorrhea. Primary dysmenorrhoea affects more than half of all teenagers and 30-50% of menstruating women. Craniosacral Therapy (CST) is a scientific approach to physical and psychological recovery based on the premise that the nerve system of the body is the fundamental cause of many diseases. The practitioner softly touches the patient's head and spine to alleviate tension and promote the flow of cerebrospinal fluid throughout the therapy session. Light massage may also be used by the CST practitioner to remove any knots or blockages in the patient's muscles. This therapy is supposed to help with a variety of problems, including migraines, anxiety, discomfort, and exhaustion. Craniosacral Therapy provided outstanding results in maximizing pain relief. Participants in the research reported a substantial reduction in pain

following a 20-minute session of craniosacral therapy. According to the results of this study, craniosacral therapy is a supplemental treatment approach to dysmenorrhea discomfort that decreases the patient's pain experience.

Keywords: Craniosacral therapy, Pain, Dysmenorrhea, Primary Dysmenorrhea, Menstruation, Menstrual pain.

INTRODUCTION

Menstrual health is an important aspect of general health since most women menstruate between menarche and menopause. Menstruation, on the other hand, regularly and often abysmally affects the physical, mental, and social well-being of tens of millions of women worldwide. Improving our understanding of the fundamental processes behind menstruation, abnormal uterine bleeding, and other menstruation-related illnesses will help us get closer to the objective of customised care. Furthermore, a better mechanistic knowledge of menstruation a quick, scarless healing process in healthy people will most certainly give insights into a slew of other disorders involving local and systemic regulation of vascular function.[1]

Normal menstruation is now defined as cyclic bleeding from the uterine corpus occurring between menarche and menopause. It may be broken down into four simple domains: how frequently the woman experiences bleeding episodes, the regularity or predictability of these episodes, the duration of bleeding episodes, and the degree or severity of bleeding. Not all women have "normal" menstrual bleeding; up to 30% of women will have changes in the amount or pattern of monthly blood flow, which is a sign of abnormal uterine bleeding (AUB), which can be caused by numerous etiologies, and occasionally more than one etiology at the same time.[1]

Furthermore, many women will experience other symptoms associated with their menstrual cycles, such as pain, dysmenorrhea, anxiety, depression, and fatigue, which require attention in order to achieve early diagnosis of reproductive health concerns such as endometriosis, premenstrual syndrome, and premenstrual dysphoric disorder and achieve optimal health.[1]Women's menstrual cycles are distinguished by substantial variability in cycle length (26-35 days), 5-day menstruation, a fertile period from 5 days prior until the day of ovulation, and low fertility that varies with cycle length and age. At the luteal-follicular transition, all women have an increase in FSH, which stimulates follicular development and inhibits B

production in the early follicular phase.[4]Women's menstrual cycles are carefully regulated by endocrine, autocrine, and paracrine factors that regulate ovarian follicular development, ovulation, luteinization, luteolysis, and endometrial remodelling Women have an average reproductive lifetime of 36 years, from menarche at 8.5 to 13 years through menopause (defined as 1 year of anovulation) at roughly 51 years.[4]Women have 'fertile sexuality' (equated to oestrus) before ovulation, which differs from 'extended sexuality' after ovulation.[4]

The menstrual cycle is governed by cyclical variations in hormone levels, which are regulated by the hypothalamic-pituitary-gonadal axis feedback loop. The normal menstrual cycle is a synchronized series of events that involves the hypothalamus, pituitary, ovary, and uterus, as well as menarche. In the absence of pregnancy, a reduction in estrogen and progesterone levels leads to endometrial involution and menstruation loss.[3]

Weight increase may be one of the reasons that current trends in growing weight and body mass index (BMI) result in such girls reaching menarche at a younger age.[3]

It may take up to 2-3 years after menarche to achieve regular menstrual cycles. This is due to a lack of ovulatory cycles until the mechanism of the estrogen-induced LH surge matures and ovulatory cycles may occur. [3]Estradiol secretion dominates the first phase of the menstrual cycle, the follicular phase; this hormone is vital in endometrial growth and remodeling Progesterone secretion rises in the second stage of the cycle, the luteal phase. The corpus luteum produces progesterone. If an ovum is not fertilized, the corpus luteum dissolves and the hormone level drops around 3 days before menstruation begins. A reduction in progesterone levels causes an inflammatory response that results in endometrial exfoliation and monthly bleeding. Progesterone also influences prostaglandin regulation and production.[2]

The hypothalamic-pituitary-ovarian (HPO) axis is active during fetal development, inactive during childhood, and reactivated at puberty once the inhibitory mechanisms that regulate the release of gonadotrophin-releasing hormone (GnRH) from the hypothalamus are removed. This causes increased pulsatility of luteinizing hormone (LH) and follicle-stimulating hormone (FSH), which is seen around a year before the breast emerging. Menarche occurs at the end of puberty when a complex series of hormonal processes produces enough ovarian estrogen to drive endometrial development.[3]During fertile age, sex hormone changes during the menstrual cycle have a major effect on physical, mental, and social aspects, perhaps leading to pathological problems.

They may also be early warning indications of menstrual problems such as uterine fibroids, endometriosis, and adenomyosis. Gynaecological issues are a significant necessity for the rheumatologist to consider. Gynecological health problems in RD patients can be attributed to a variety of reasons, including chronic inflammation, hormone imbalance, and pharmacological side effects, as well as psychological and cultural concerns. In terms of gynaecological concerns, the focus has primarily been on sexuality and vaginal symptoms associated with dryness. [5] Dysmenorrhea is one of the most common causes of unfavourable effects on women's life, and it can result in activity limitation. [9]

Despite its significant incidence, dysmenorrhea is frequently misdiagnosed, undertreated, and normalised, even by patients, who may accept the symptoms as an unavoidable side effect of menstruation.[8] Dysmenorrhea is the cramping discomfort that occurs with menstruation. Based on pathophysiology, they are further categorised into two categories. Primary dysmenorrhea is defined as the absence of any identified pelvic disease. Primary dysmenorrhoea is quite common, affecting more than half of all teens and 30-50% of menstrual women.[6]

In impoverished nations, around 71% to 75% of women suffer from dysmenorrhea. the length of menstrual flow, younger age at menarche, greater BMI, and cigarette smoking are all factors that have a direct impact on dysmenorrhea. Childbirth, on the other hand, appears to alleviate dysmenorrhoea.[7]Some women endure relatively minor pain, whilst others are considerably hindered in their capacity to work throughout their menstrual cycle. Flexibility in hours or the option to work from home may alleviate this problem, but even for women who do not miss work or school due to menstrual-related symptoms, the diminished attention and productivity associated with such symptoms has a detrimental impact on performance.[11]

Cultural and social variables are also likely to impact the occurrence and reporting of dysmenorrhea.[10]For example, even when geographical regions are comparable, there is variation in the incidence of dysmenorrhea reported in surveys across various cultural groups.[10]

Age 20 years, nulliparity, heavy menstrual flow, smoking, high/upper socioeconomic position; efforts to lose weight, physical activity, disruption of social networks, despair and anxiety are risk factors for dysmenorrhea.[6]

Heritable traits, including the condition diagnosed in the mother and sisters, premenstrual syndrome (PMS), early age of menarche, stressful lifestyle, lack of physical activity, loss of weight, unhealthy habits, social problems, depression, and even low self-esteem may all have an impact on the development of dysmenorrhea. Other researchers have shown that hormones,

namely increased prostaglandin release, can cause dysmenorrhea. Prostaglandins cause the uterus to contract excessively, resulting in hypoxia and discomfort.[2]

Pain, including dysmenorrhea, is known to stimulate the sympathetic nervous system. Sympathetic nervous system activation causes motor and metabolic responses. The production of proteolytic enzymes (e.g., kinins, prostaglandins) occurs with the action of the stress element, pain. Pain stimulates the sympathetic nervous system, causing motor reflexes such as increased muscular tension in the afflicted region. This might result in venous, artery, and nerve vessel compression, impeding vascular flow or neurotransmission and irritating pain (receptor) nociceptors.[2] It appears that primary dysmenorrhea is caused by increased prostanoid production via the cyclooxygenase pathway. This explains why dysmenorrheal discomfort begins with ovulatory cycles rather than anovulatory early menstruation. This enzyme initiates the cyclooxygenase pathway, which results in the formation of prostanoid.[11]

Several approaches have been recommended for the treatment of primary dysmenorrhea, including the use of nonsteroidal anti-inflammatory medications, contraceptive tablets, and nonpharmacological therapies like as herbal remedies and acupuncture. Because of these considerations, as well as the potential complications of using pharmaceutical methods, nonpharmacological treatments for primary dysmenorrhea, such as patient explanation and assertion, behavioural interventions, acupressure, muscle relaxation, music therapy, guided imaging and psychometric methods, cognitive psychotherapy, the use of local heat, yoga, physiotherapy, and Trans Cutaneous Electrical Nerve Stimulation (TENS) to reduce menstrual pain, are increasingly popular.[9]

Dysmenorrhoea is classified into two types: primary and secondary. Primary dysmenorrhoea occurs after menarche and is characterised by cramping menstrual discomfort in the lower abdomen in the absence of organic disease. Secondary dysmenorrhoea, on the other hand, develops years after menarche and is characterised by pelvic discomfort, nausea, vomiting, lethargy, back pain, headaches, dizziness, and diarrhoea. Secondary dysmenorrhoea is caused by underlying pathological conditions such endometriosis, ovarian cysts, pelvic inflammation, myomas, or intrauterine devices.[7]

Primary dysmenorrhea is described as menstruation that is painful in the absence of pelvic disease. It is the most prevalent reason for gynecologic visits, affecting 50% to 90% of women and characterised by persistent, crampy, lower abdomen discomfort during menstruation, with half describing their pain as moderate to severe. Secondary dysmenorrhea refers to discomfort

during menstruation that is caused by pelvic pathology such as endometriosis, fibroids, adenomyosis, and congenital anatomic abnormalities. In a population-based assessment of women over the age of 18 with primary dysmenorrhea, more than half reported symptoms restricting their activities, and 17% missed school or work as a result. A complete medical, psychological, and gynecologic (including menstrual and sexual) history can be used to make a diagnosis of primary dysmenorrhea.[8]

The evaluation of PD is made through the process of exclusion, ruling out any organic pathology of gynaecological origin. The therapeutic method is primarily focused on alleviating pain through physiological factors that underpin menstrual discomfort. On the other hand, these physiotherapeutic treatments, which are supported by clinical trial data, could be a very useful treatment alternative for women with Primary dysmenorrhea, particularly those who are ineligible for pharmacological therapy, because physiotherapy has no side effects, according to the studies reviewed.[12]

Because primary dysmenorrhoea occurs during ovulatory cycles, it appears a few years after menarche with at least 6-12 months of painless periods. It is most strong on the first day of menstruation and gradually reduces with menstrual flow. It usually reduces with time and after childbirth.[6]

Craniosacral Therapy (CST) is derived from osteopathic manipulative treatment and employs mindful, very delicate fascial palpation techniques to reduce sympathetic arousal by modifying body rhythms and to support the body's function and self-regulation capability by relaxing physical and mental structures. Areas treated include not just those between the skull and the sacrum (since osteopathy does not simply treat bones), but also joints, muscles, fasciae, cardiovascular tissues, and organs. While the physical processes of CST remain unknown, preliminary randomised controlled studies have revealed specific therapeutic benefits of CST on patient-reported outcomes. Clinical investigations have also demonstrated substantial impacts of CST in addition to therapy and efficacy in individuals suffering from chronic pain disorders, infantile colic, attention deficit hyperactivity disorder, and asthma. Patients also report adopting CST as a supplemental therapy technique for headaches and migraines, dizziness and tinnitus, gastrointestinal issues, and stress-related and mental problems such as sadness and anxiety. CST is utilised in children to help with symptom relief of respiratory, oncological, allergy, autistic spectrum, and gastroenterological illnesses. [15]

Craniosacral therapy (CST) is a supplementary treatment that is thought to relieve tension in the sacral zone's muscles, ligaments, and fascia.[14]

Craniosacral Therapy (CST) is a popular treatment for back and neck pain, headaches and migraines, and other stress-related and mental health issues. CST aims to restore sympathetic nerve activity, which is commonly exacerbated in chronic pain sufferers, by changing craniosacral body rhythms in addition to releasing myofascial structures.[13]

Study Design:

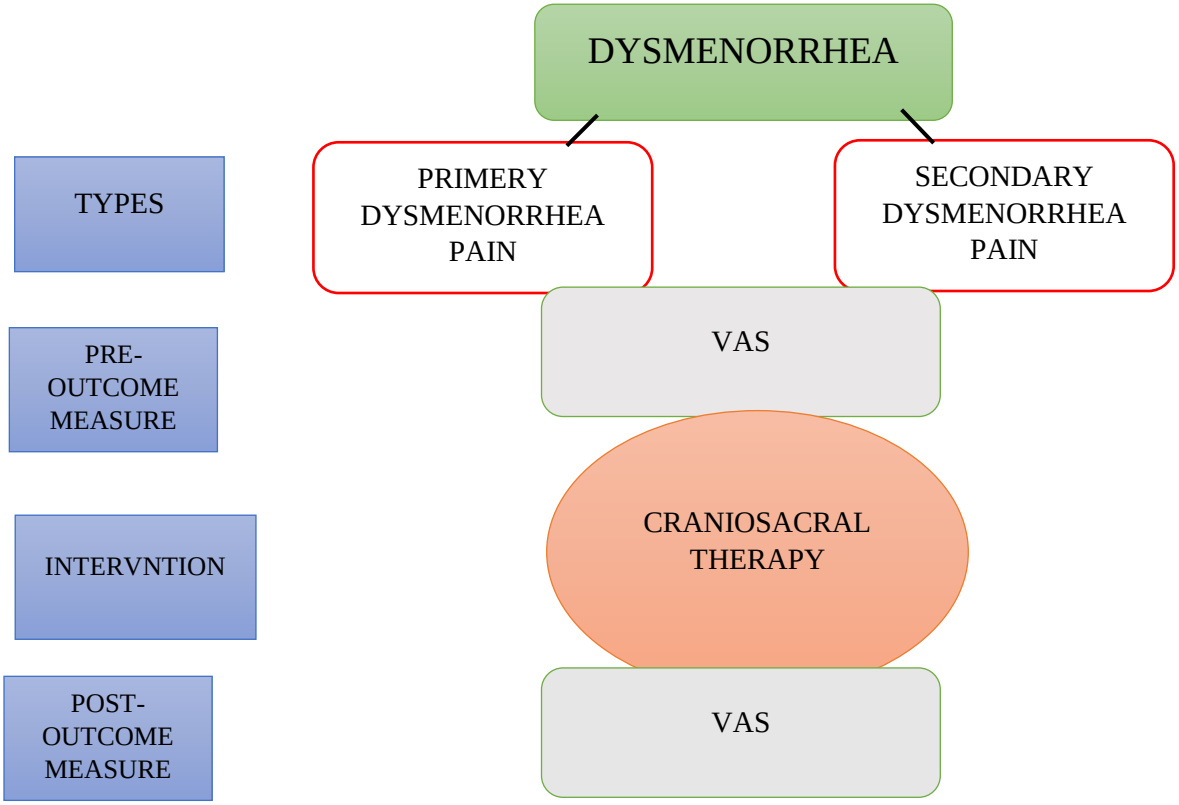

Fig.1 Flow Chart of CST on Dysmenorrhea Pain

Material and Methods

STUDY DESIGN: Experimental

STUDY TYPE: Quasi-Experimental

SAMPLE SIZE: 12

STUDY DURATION: 6 months

STUDY SETTING:

INCLUSION CRITERIA:

- Women age between 13 to 40 with a regular menstrual cycle.
- Women suffering from Primary and secondary dysmenorrhea

EXCLUSION CRITERIA:

- Pregnancy
- Other Pelvic Disease
- Menopause

PROCEDURE

Craniosacral Therapy is a hands-on therapy that uses gentle touch to release restrictions in the tissues surrounding the central nervous system. The CST practitioner may also use light massage to release any knots or blockages in the patient's muscles. Before beginning the session, the participant is given education about CST and the procedure was explained. Then, subjects were asked to rate the severity of discomfort and adjust to a comfortable supine posture. With the subject's consent, the therapist will place her hand on the lower back or below the subject's head. Following this subject, the subject is asked to relax the body, and the therapist will issue an audio order to focus on the breathing pattern. Throughout the session, the participant is asked to focus on her breathing pattern. The session lasts 15 to 25 minutes. Following the session, the subject is asked to assess the level of pain once again.

OUTCOME MEASURE

Visual Analog scale (VAS)

Results

Table 1. Pre and Post outcome of CST Using VAS Scale.

Age	Pre	Post
21	**7**	**4**
34	**5**	**3**
18	**8**	**4**
26	**6**	**5**
15	**5**	**2**
22	**8**	**6**
19	**7**	**3**
20	**9**	**7**
28	**6**	**5**
33	**9**	**4**
23	**8**	**7**

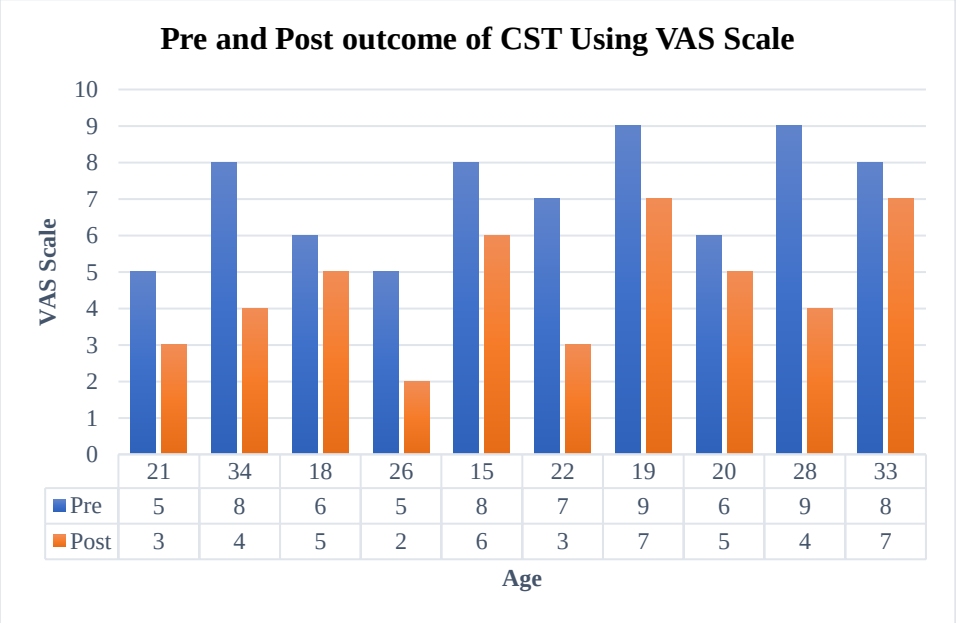

Fig.1.The Graph Shows the Pre and Post outcomes of CST using VAS Scale.

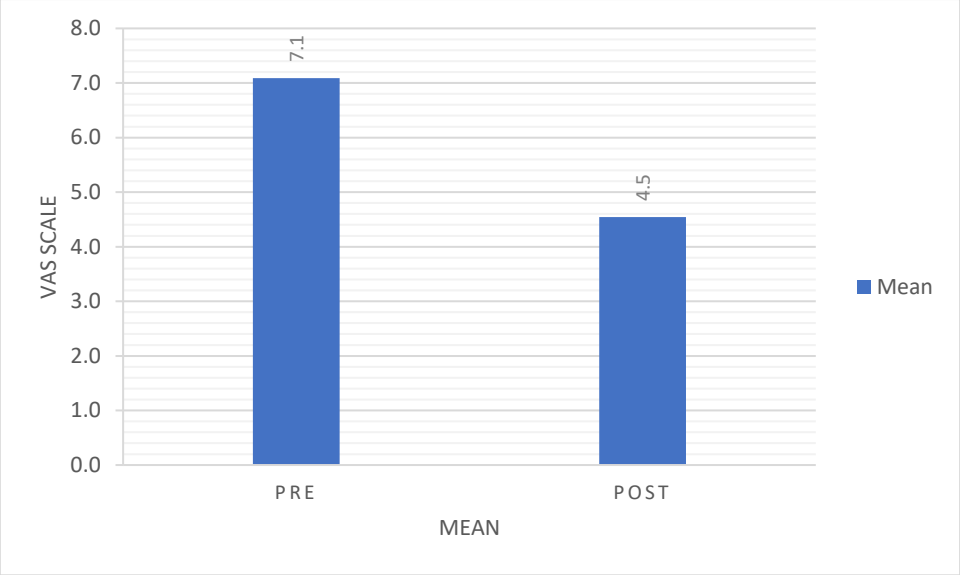

Fig.2.The Following graph illustrates Pre and Post Mean.

Discussion

Craniosacral Therapy (CST) is a naturalistic approach to physical and psychological healing that is based on the idea that the body's nervous system is the root cause of many ailments. The therapy session consists of the practitioner lightly touching the patient's head and spine in order to release tension and improve the flow of cerebrospinal fluid. The CST practitioner may also use light massage to release any knots or blockages in the patient's muscles. This therapy is said to be beneficial for a wide range of conditions, including migraines, anxiety, pain, and fatigue. Craniosacral Therapy had remarkable effects, as maximal pain alleviation was observed following the session**.** However, a few respondents had side effects such as nausea and dizziness following the therapy session.

Helen Elden et. al[16] Found that Pregnant women diagnosed with severe PGP described their CST experience as providing them with new awareness of their widespread muscle tension. They described increased body awareness, pain distraction, relaxation and calm, and feelings of security and optimism. These factors may have assisted them in actively improving posture and lowering muscle tension, thereby alleviating PGP symptoms. Adelaida María Castro-Sánchez et.al[17] Suggested that in patients suffering from low back pain, craniosacral therapy improved pain intensity, hemoglobin oxygen saturation, systolic blood pressure, serum potassium, and magnesium levels statistically more than 10 sessions of a classic massage. Our study suggests that craniosacral therapy improves the symptoms of medium-term pain in women with dysmenorrhea.

Conclusion

Participants in the study reported a significant decrease in pain after treatment after 20 minutes of the session of craniosacral therapy. According to these findings in this experiment, craniosacral therapy is a complementary therapeutic approach to dysmenorrhea pain that reduces the patient's experience of pain. This therapy should be included in the multimodal treatment approach for these patients**.**

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