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Running head: Efficacy of Arvigo Techniques of Maya Abdominal Therapy™

Efficacy of the Arvigo Techniques of Maya Abdominal Therapy™ on Relief of
Dysmenorrhea Symptoms in Women

Thesis submitted in partial fulfillment of the requirements for the
College of Nursing Honors-In-Discipline Program

By

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Abstract

Dysmenorrhea is one of the most reported symptoms by women in OB/GYN departments with an effect on up to 95% of women. Because pain experienced during menstrual cycles influences the mental and physical health of women, it is important to find practical and effective relief.

Complementary and alternative medicine (CAM) is a new clinical and scientific field in the practice of Western medicine. The use of CAM by the public has increased dramatically in recent years and among the practiced modalities lies a fairly new massage technique aimed at treatment of uterine abnormalities attributed to misplacement. The Arvigo Techniques of Maya Abdominal Therapy™ (ATMAT) is rooted in traditional practices by the Maya people of Belize. It is a non-invasive, slow, penetrating external massage of the abdomen that repositions the uterus in women. This study is aimed to measure the patient's perception of menstrual pain before and after therapy with completion and return of a Short-Form McGill Pain Questionnaire. Each type of data represents a quantitative index of pain quality and intensity as a result of ATMAT. Percent change calculated through paired *t*-test analysis will provide data on the effectiveness of the therapy.

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Introduction

Dysmenorrhea is one of the most reported symptoms by women in obstetrics and gynecology departments (ACOG, 2010). It has an effect on 45-95% of women with varying intensities (Holtzman, Petrocco-Napuli, Burke, 2008). Despite its high prevalence, understanding of its pathophysiology and its relation to other pain syndromes in women is still limited. Painful periods influence the mental and physical health of women, particularly those who are not seeking healthcare or treatment.

Dysmenorrhea can be divided into two broad categories: primary; occurring in the absence of pelvic pathology, and secondary; resulting from identifiable organic diseases (ACOG, 2010). Common risk factors for primary dysmenorrhea include age <30 years, low BMI, smoking, earlier menarche (before age 12 years), longer cycles, heavy menstrual flow, nulliparity, premenstrual syndrome, sterilization, clinically suspected pelvic inflammatory disease, sexual abuse, and psychosocial symptoms (Latthe, et al. 2006). The cause of PD is usually from natural chemicals called prostaglandins. Prostaglandins, a smooth muscle contractor, proceeds into the uterine muscle 2-4 days before menstruation and builds up to aid in the expulsion of endometrium (Campbell & McGrath, 1997; Durain, 2004).

Primary dysmenorrhea (PD) is considered the major cause of absenteeism from work and is characterized as spastic abdominal pain shortly before or at the onset of menstruation and persisting for approximately 2-3 days without gynecological pathologies (Durain, 2004). The problem of absenteeism from school or work is underappreciated. It is estimated that 140 million work hours are lost due to symptoms

associated with dysmenorrhea, totaling a loss of \$2 billion a year in the United States (Ehrental, Hoffman, Hillard, 2006). In one study, 42 percent of college females reported absenteeism or loss of activity on at least one occasion (Harlow & Park, 1996). In several longitudinal studies of young women, rates of absenteeism ranged from 34 to 50 percent (Sundell, Milson & Andersch, 1990).

Presentation

PD frequently presents during adolescence, within three years of menarche (Smith, 1997). Affected women experience sharp, intermittent spasms of pain, and the pain is often described as crampy or colicky. It is usually centered in the suprapubic area and may radiate to the back of the legs or the lower back. Systemic symptoms of nausea, vomiting, diarrhea, fatigue, fever, headache or lightheadedness are fairly common. Pain usually develops within hours of the start of menstruation and peaks as the flow becomes heaviest during the first day or two of the cycle.

Pelvic examination for confirmation of PD generally reveals prominent uterine tenderness during menstruation, although in patients with secondary dysmenorrhea, the uterus may be painful outside of menses. Physical examination findings in dysmenorrhea differ distinctively from pelvic inflammatory disease; palpation of the cervix is not typically excessively painful in dysmenorrhea patients (IASP, 2007).

Pain

Pain, as defined by the International Association for the Study of Pain, is an unpleasant sensory and emotional experience associated with actual or potential tissue

damage, or described in terms of such damage (Bogduk & Merskey, 2012). Pain is always a subjective experience. Each individual learns the application of the word through experiences related to injury early in life and, accordingly, pain is that experience we associate with actual or potential tissue damage. It is unquestionably a sensation in a part or parts of the body, but it is also always unpleasant with distinct discriminative and emotional components.

Many people report pain in the absence of tissue damage or any likely pathophysiological cause and usually this happens for psychological reasons. There is usually no way to distinguish their experience from that due to tissue damage since we rely on the subjective report. If they regard their experience as pain, and if they report it in the same ways as pain caused by tissue damage, it should be accepted as pain. This definition avoids tying pain to the stimulus (Bogduk & Merskey, 2012).

Menstrual pain and discomfort can be experienced through a plethora of symptoms and complaints including cramping, nausea and vomiting, headaches, irritability, anxiety, and depression. Once a young woman starts menstruating, she may begin to experience emotional changes around the time of her period. Seventy-five percent of women with regular period cycles report unpleasant physical or psychological symptoms before their periods. Premenstrual Syndrome, or PMS, affects 30 to 80 percent of women (Barclift 2010).

Psychological symptoms of PMS include: depression, anger, irritability, anxiety, sensitivity to rejection, feeling overwhelmed, and social withdrawal (Barclift, 2010). Physical symptoms of PMS include: fatigue, sleep disturbance, increased appetite,

abdominal bloating, breast tenderness, headaches/ menstrual migraines, muscle aches and cramps, joint pain, and swelling.

Premenstrual Dysphoric Disorder, or PMDD, is a more severe form of PMS. It affects 3 to 8 percent of women of reproductive age. Symptoms of PMDD include: severe irritability, depression, anxiety, and mood swings which occur in the latter phase of the menstrual cycle (ACOG, 2010). With the wide array of ways in which a woman's menstrual cycle can affect her health within a comprehensive view, it is important to find effective and practical relief.

Treatment Options

NSAIDs

Nonsteroidal anti-inflammatory drugs (NSAIDs) are the first line treatment by clinical specialists for primary dysmenorrhea patients and are readily available and inexpensive. Nevertheless, NSAIDs have many adverse effects, including indigestion, damage to the gastrointestinal tract, bleeding stomach ulcers, high blood pressure, renal toxicity, and even hemorrhagic stroke (Monahan et al., 2007). NSAIDs have also been found to have a failure rate of up to 20% in alleviating primary dysmenorrhea (Livshits & Seidman, 2010). These threats to a patient's well-being are important to monitor when implementing this type of pharmacologic therapy.

Hormonal Treatment

Combined oral contraceptive pills (COCs) comprising estrogen and progestin attenuate hyperactive myometrial activity by inhibiting ovulation, reducing menstrual fluid volume, lowering endometrial COX-2 levels throughout menstruation, and keeping

prostaglandin levels consistent (ACOG, 2010). Despite widespread use of COCs, few randomized controlled trials have been conducted to demonstrate their efficacy on relief of dysmenorrhea versus placebo (Proctor, 2001).

COCs and NSAIDs are considered first-line therapy for women with primary dysmenorrhea. Possible adverse effects associated with COC use include nausea, vomiting, headaches, breast tenderness, and the risk of venous thrombosis leading to pulmonary embolism or myocardial infarction associated with estrogen use (Farmer, 1997).

Surgery

Surgical approaches including pelvic nerve transection and extirpative surgery for endometriosis or leiomyomas may be considered after failure of medical management (ACOG, 2010). The published literature is limited, however, and evidence is scarce to conclusively demonstrate noteworthy pain relief from these procedures (Proctor et al., 2005). This ultimately leads many women to seek complementary and alternative treatment methods for primary dysmenorrhea.

Complementary and Alternative Medicine

Complementary and alternative medicine (CAM), also referred to as integrative medicine, is a new clinical and scientific field in the practice of Western medicine. CAM has been defined as:

A broad domain of healing resources that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs, other than those intrinsic to the politically dominant health system of a particular society or

culture in a given historical period. [It] includes all such practices and ideas self-defined by their users as preventing or treating illness or promoting health and well-being. (Defining and Describing Complementary and Alternative Medicine, 1997, p.50)

The use of CAM by the public has increased dramatically in recent years, reflecting changes in the values and needs of society.

Therapies referred to as “alternative,” “complementary,” or “unorthodox” have existed for thousands of years. Many cultures, including the Greeks, Romans, Egyptians, Arabs, and Indians have relied on manipulative and body-based methods, such as massage as a healing therapy. In the terms of CAM, massage therapy is defined as a mean of manipulating soft tissues using pressure and traction (Ernst, Pittler, Wider, Boddy, 2006) and is reported as effective for menstrual pain relief (Hernandez-Reif, et al., 2000; Kim, Jo, Hwang, 2005; Baliani, Ghasemi, Bahadoran, Heshmat, 2010).

Many physiological and psychological benefits of massage are documented in the literature. Massage is an effective short-term intervention to reduce pain in patients with cancer (Weinrich & Weinrich, 1990); it has been shown to improve mood (Corley, Ferriter, Zexh , & Gifford, 1995); it reduces pain and agitation (Sansone & Schmitt, 2000); and, can reduce distress, nausea, and anxiety (Ahles et al., 1999). All of these complaints are also reported by women suffering with primary dysmenorrhea (Tariq, et al., 2009).

The Arvigo Techniques of Maya Abdominal Therapy™

For centuries, the Maya shamans of Central America have effectively treated female reproductive ailments with a combination of abdominal massage, realignment techniques, herbal preparations and prayer (Arvigo, 2001). One specific method that has been recently introduced is the Arvigo Techniques of Maya Abdominal Therapy™ (ATMAT).

Based on over thirty years of training and experience in massage, herbology, spiritual healing, and naprapathy, Dr. Rosita Arvigo developed these techniques which now bear her name. Dr. Arvigo, a doctor of naprapathy (DN) developed her techniques to synthesize modern understanding of anatomy, physiology, herbology and the elements of naprapathy with traditional Maya healing techniques. Naprapathy encompasses aspects in regards to advanced soft tissue manipulation that facilitates the recuperative and regenerative processes of the body. ATMAT incorporates a holistic approach to health care which includes massage, anatomy and physiology, herbology, nutrition, and emotional and spiritual healing. Dr. Arvigo believes that with any natural healing technique, these areas must be simultaneously addressed to promote optimal health (Arvigo, 2001).

In 1983, Chicago-native Arvigo began a concentrated 12-year apprenticeship with Don Eljio Panti, a Maya shaman in Central America, who, when he died at the age of 103, was known as the last Mayan master healer in Belize (Thomas,1996). Don Eljio was already 90 years of age when Arvigo began to study with him in his remote village. She learned about native healing plants, the Maya prayers, herbal bathing for physical and spiritual healing, and feminine massage.

In the old Maya traditions, training as a healer begins at home with the wise grandmother or mother who has knowledge and experience with home remedies passed down from generation to generation. If a home remedy suggested by the granny healer does not work, they seek out the more experienced village healer, such as Don Elijio (Arvigo, 1994).

Don Elijio believed that a woman's center is her uterus, and if it were out of balance then so was she. Throughout the course of a woman's life, the uterus can shift out of its normal anatomical position; behind the bladder in the center of the pelvis, about one and a half inches above the pubic bone. It is held in this position by muscles, the vaginal wall and ligaments, which all have elasticity. These ligaments and muscles can weaken, causing the uterus to fall down (inferior), forward (antero), backward (retro), or to either side.

In Western medicine, a tipped or fallen uterus is usually not treated unless the symptoms bother the woman (Lentz, 2007). Vaginal pessaries, surgical fixation, or even hysterectomies are prescribed for the resulting health issues (Atnip, 2009). Medicinal options for mild cases include estrogen therapy and muscle relaxants, which have their own impending health side effects including blood clots, stroke, liver tumors, and gall stones (Lentz, 2007).

Many women with a misplaced uterus are left with symptoms such as painful/irregular menstruation, dark or brown blood at the onset and end of menstruation, headache or migraine with period, low backache or back pain with period, and even difficulty becoming pregnant.

According to Dr. Arvigo, 90% of women will have a misplaced or tipped uterus at some point in their life. Unfortunately, the causes for uterine displacement are common and varied. Some of them include: falls that impact the lower back, sacrum and tailbone; car accidents; difficult labor and delivery with prolonged periods of pushing; poor care during any stage of pregnancy; repeated pregnancies close together, falls to the sacrum, poor alignment of the pelvic bones; high impact dancing and aerobics; wearing high-heeled shoes; chronic constipation etc.

ATMAT is a non-invasive, slow, penetrating external massage of the abdomen that repositions the internal organs, specifically the uterus, which have shifted out of place and restricted the normal flow of blood, lymph, and nerve impulses. This work corrects a fallen or tilted uterus through softening of musculature, alignment of pelvic bones, and enhancing the circulation of blood and lymphatic fluids. These techniques correct poor hemodynamics of the abdomen and its many organs so fundamental to digestion, absorption, elimination, secretions, and reproduction (Arvigo 2001).

Arvigo watched as her mentor's skillful and wrinkled hands massage thousands of abdomens with impressive results. Arvigo states that she was drawn to specialize in ailments of women using these time-honored body techniques to alleviate common complaints.

Chu'lel

Fundamental to Maya medicine is the concept of "life force" or *chu'lel*. This energy force is everywhere and permeates everything: plants, trees, animals, mountains, rivers, and humans. It is said to be from a divine, spiritual source and

sacred within all forms of life (Arvigo, 2001). *Chu'lei* is similar to *Qi* (chi) in Chinese medicine, as well as *prana* in India. Life force is believed to be inherent in all things and is likened to the flow of energy around and through the body, forming a cohesive and functioning unit. This concept is recognized in all healing and spiritual beliefs from around the world before the rise of modern medicine (Maoshing, 1995).

Chu'lei is the elemental substance constituting the universe, and all phenomena are produced by the changes and movement of *chu'lei*. Proper flow of *chu'lei* is responsible for the physical integrity of the body. This vital energy flows among organs and all parts of the body through energetic pathways called meridians as well as through the blood stream. This *chu'lei* travels around the exterior of the body, helping to protect against bacteria and viruses that may be airborne (Maoshing, 1995).

With ATMAT, *chu'lei* and blood are circulated in a way that corrects insufficiencies or imbalances to vital organs. Relief of these imbalances can also be corrected through various other techniques including herbology, essential oil therapy, food therapy, physical training regimens, and acupuncture (Arvigo, 2001).

ATMAT aims to relax tight ligaments and tone weaker ones, facilitate the movement of arterial and venous blood, move congested lymph fluids and open energy channels that are stagnant to allow nutrients, disease fighting agents, hormones, proper nerve signals, and *chu'lei* to flow through the entire body unimpeded.

Dr. Arvigo has attempted to address and prevent symptoms of a misplaced uterus, particularly dysmenorrhea and infertility, with her techniques. Arvigo states:

“It is just not necessary to have painful periods, painful ovulation and irregular menses for a lifetime. Once the uterus is gently and gradually coaxed back to a normal position by strengthening the elasticity of the uterine ligaments that hold it in place, the uterus is able to clean itself out more efficiently from month to month and the hormones can flow freely through the feedback loop from the pelvis to the hypothalamus. Generally painful periods diminish within two or three cycles” (Arvigo, 1994 & 2001).

Self-Care

Self care refers to actions and attitudes which contribute to the maintenance of well-being and personal safety and promote human development. In terms of health maintenance, self care is any activity of an individual, family or community, with the intention of improving or restoring health, or treating or preventing disease. Additionally, self-care can also be looked at as preventive medicine.

Purpose

At present, an extensive database review of PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Allied and Complementary Medicine (AMED) produce no research studies conducted on the perceived effectiveness of ATMAT with relief to dysmenorrhea symptoms. The purpose of this study is to determine the efficacy of ATMAT in providing relief from painful menses and decreasing the severity of symptoms experienced by women during their menstrual cycles.

Methods and Design

Overview

To determine the effectiveness of ATMAT in reducing symptoms of dysmenorrhea in women, patients having received the treatment at licensed facilities will be asked to complete a short-form McGill Pain Questionnaire (SF-MPQ) rating menstrual pain and discomfort prior to treatment, and an additional modified SF-MPQ regarding menstrual symptoms at any point following therapy. Also, a multidimensional scoring (MDS) of the severity of dysmenorrhea concluded the questionnaire.

There is no particular requirement of reasons for seeking therapy; just that the treatment was obtained, women suffered from primary dysmenorrhea before therapy and menstrual cycles continued for some time after therapy was completed. This study will rely on the subjective self-report of symptoms and perceived relief, if any, of symptoms following treatment.

Data Source

Twenty two ATMAT licensed practitioners from thirteen states solicited via the Arvigo Institute participated in the study. A total of 400 questionnaires were mailed to participating practitioners for distribution to qualified clientele. Each individual questionnaire, with directions, was in a pre-stamped, sealed outer envelope with an additional pre-stamped inner envelope addressed to the researcher included. The practitioners addressed the outer envelopes with patient addresses that have had the ATMAT in their office and then mailed them. Once the questionnaire was received by the patient, it was completed with no personal, identifying information except for the woman's age and returned in the inner envelope addressed to the researcher. There

was no return address put on the envelopes to further ensure patient privacy. Receipt of the completed questionnaire acted as implied consent from the patient for use of the data in the research.

Variables and Their Measurement

Demographic data such as age, duration of menstruation in days (pretreatment and post-treatment), duration of pain in days (pretreatment and post-treatment) are the first section of the questionnaire followed by the modified short-form McGill Pain Questionnaire.

SF-MPQ

The questionnaire begins with eleven descriptors representing the sensory dimension of pain experience with an intensity rating of none (0), mild (1), moderate (2), and severe (3). Four more descriptors represent the affective dimension of pain with the same intensity rating scale. It specifies the qualities of pain, determines the intensities implied by the words used, and obtains a measure that comprehends all dimensions of pain that are meaningful to the patients (Melzack & Turk, 1992).

MDS

The multidimensional scoring of the severity of dysmenorrhea consists of three grades: Mild – rarely affected working ability, no systemic symptoms, and analgesics rarely required; moderate- working ability moderately affected, few systemic symptoms, and analgesics required; and severe- working ability clearly inhibited, apparent systemic symptoms, and analgesics have a poor effect.

Reliability/Validity

The most important requirement of a measure is that it be valid, reliable, consistent, and useful. The MPQ appears to meet all of these requirements providing a rapid way of measuring subjective pain experience (Melzack, 1983). Additionally, Strand, Ljunggren, Bogen, Ask, Johnsen (2008), established test-retest reliability, and Adelmanesh, et al. (2012) found the tool a sensitive and valid instrument.

Findings

Study Sample

Of the 400 questionnaires mailed, 233 were returned with 12 incomplete/missing data and unusable, resulting in a response rate of 58%. Participating females ranged in age from 18 to 54 with a majority under age 33 (59%).

Major Findings

Mean duration of menstruation in days before intervention was 6.16 and after intervention were 5.42. The mean length of pain in days before the intervention was 3.26 and after intervention was 1.95. Additionally, the maximum length of pain in days before intervention was 15, and maximum length after intervention was 12 days. Likewise, the maximum length of pain in days before intervention was shortened from 15 to six following the intervention.

Each of the eleven categories measuring sensory perception of pain (throbbing, shooting, stabbing, sharp, cramping, gnawing, hot/burning, aching, heavy, tender, splitting) showed a statistically significant change ($p < .001$) after ATMAT treatment.

Similarly, the four categories measuring change to affective pain qualities also showed statistical significance ($p < .001$) following therapy. Most (82%) women reported

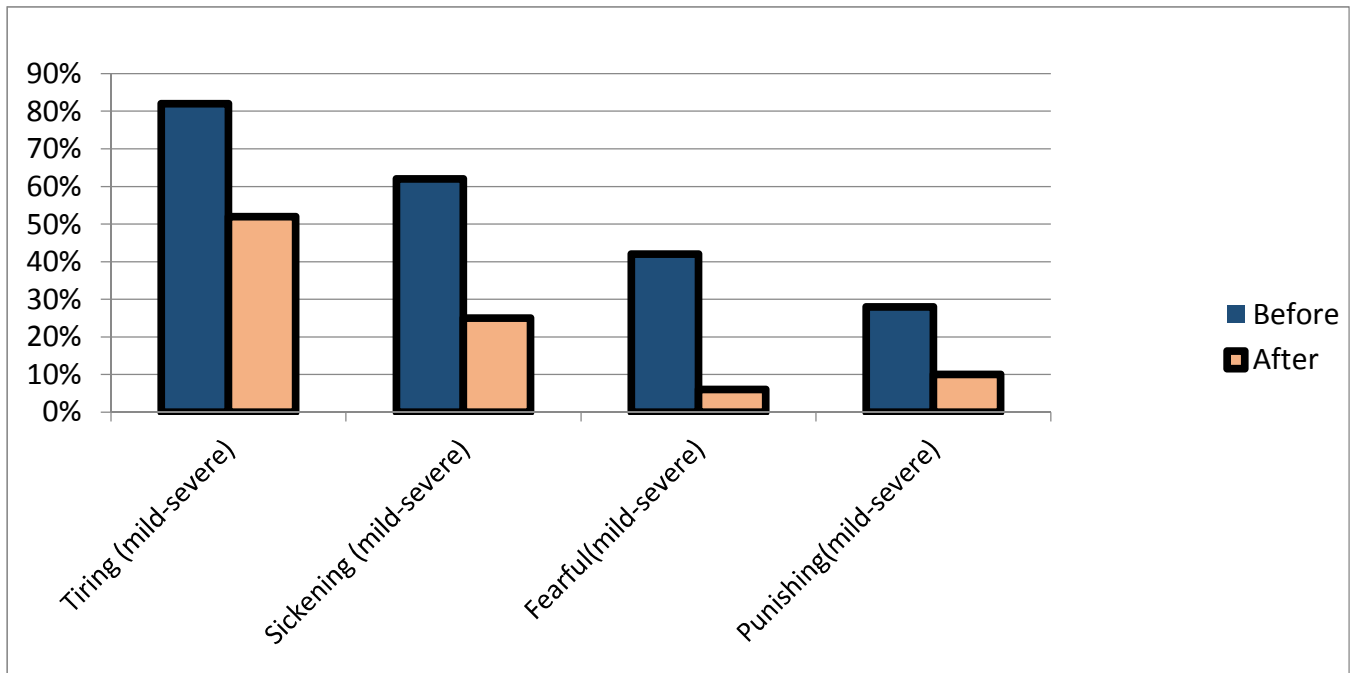
mild to severe feelings of a 'tiring' menstruation before therapy, and 48% reported no 'tiring' following therapy. A majority (63%) had mild to severe sickening qualities experienced with their periods, followed by a change of 75% expressing no sickening qualities. 42.1% of women were fearful of their periods before therapy, and 93% reported no feelings of fearfulness following therapy. Some women (27%) viewed their menstrual cycle as punishing, which improved after therapy to 89% not viewing their period as punishing/cruel.

The categories for multi-dimensional scoring (severity grading, working ability, analgesics) also showed statistical significance before and after ($p < .001$) for each. A majority (84%) of women indicated a severity grading of moderate to severe before therapy, which then fell to an 82% report of mild severity following therapy. Working ability for the women before therapy was moderately to clearly inhibited for 73% of the sample which improved to 79% reporting working ability rarely affected during menstruation. Eighty-three percent of women reported having systemic symptoms during menstruation, with 82% of those requiring analgesics that ultimately had a failure rate of 47%. Following ATMAT therapy, 61% reported no systemic symptoms with only 22% seeking analgesic therapy.

Table 1. Paired Sample Correlations

	N	Correlation	Significance (p)
Length of period Before vs. After	222	.727	<.001
Length of pain Before vs. After	226	.560	<.001
Severity Before vs. After	227	.404	<.001
Working ability affected Before vs. After	227	.361	<.001
Systemic symptoms Before vs. After	227	.402	<.001
Analgesic use Before vs. After	227	.334	<.001

Chart 1. Affective Pain Measurements



Discussion

The results indicate that women utilizing ATMAT experience shortened periods with more pain-free days. Over 80% of the sample classifies the pain experienced in the first eleven categories as none to mild following a minimum of one therapy session. The improvement in affective pain is important to consider because the affective dimension of pain is made up of feelings of unpleasantness and emotions associated with future implications. In keeping with the recent shift in acknowledgement of the importance of mental health, we must consider the culpable suspects for mental irregularities during menstruation cycles. Sensory and affective pain symptoms contribute greatly to these mental irregularities. In reducing these symptoms to mild or none, we decrease work or school absenteeism rates; we decrease the need for analgesics that have high failure rates; we avoid medical implications with avoidance of over-the-counter medications; and we decrease distress, nausea, and anxiety. At the same time, we increase work productivity rates; we increase women's ability to ease aspects of their body systems, and ultimately we increase the comfort and exploration of a woman with her own body.

Limitations

The major deficit of the current study is that the analysis did not account for other modalities that may have been influential with menstrual relief pursued by each client. Additionally, although a majority of those participating noted a significant improvement in menstrual relief, the number of sessions varied among each individual, and consideration must be given for the possibility of placebo effect. Because ATMAT

relies heavily on self-care, varied technique, and frequency may have altered outcomes for some. Analysis is also largely based on retrospective data, therefore, recall bias could be a concern.

Conclusion

The data suggests that ATMAT may be profoundly effective in alleviating menstrual pain. Oral analgesics, such acetaminophen and NSAIDs, are widely used for managing pain. However, frequent dosing is required, the failure rate is high, and drug interactions or other adverse effects may occur. The availability of abdominal massage, convenience of self-care, and return to exploring one's self make this therapy attractive, especially since it is shown to be as efficacious, if not more, as other options.

Interestingly enough, massage therapy is already in utilization in labor and delivery units. Upon assessment following delivery, a woman's uterus determined to be "boggy" increases the risk of hemorrhage and is therefore massaged so that the uterus will contract down. Therefore, using ATMAT as a pre-treatment regimen appears to be a promising preventative measure for decreasing bleeding and pain.

ATMAT proposes high success at dysmenorrhea improvement, and given the limited effectiveness of current pharmacological treatments and the increasing demand for non-pharmacological alternatives for menstrual pain relief, further investigation into effectiveness of ATMAT is needed as this is the first investigation of its kind.

The power of healing the body is put into the hands of the owner through the teaching of these ancient techniques. The concept of mind-body spirit in nursing care has been around as long as the practice of nursing. Recalling the pioneer of

professional nursing, Florence Nightingale, conditions of disease occur as a result of life circumstances or the failure of the nurse to put the patient in the best condition for nature to act upon him (Nightingale, 1860). Her multi-faceted approach, which emphasized the need for fresh air, hygiene, light and touch, has been narrowed and our view of healing has led us towards the medical model of cure rather than our holistic origins that emphasize care. Finding therapies that allow nurses as a whole to turn back to our holistic roots, such as those based deeply on touch and massage should be first choice interventions. As a society, we are touch deprived and this can lead to disease or emotional dysfunction. From the cradle to the nursing home, tactile stimulation and the emotional assurance of caring touch bring about a sense of well-being and security.

Initiating a touch-based therapy to nursing patients while subsequently teaching them ways to care for themselves, and giving them responsibility in their recovery and a sense of control should be a forefront in a nursing care plan, especially since education is our supreme ally.

Age: _____ Length of Period (in days): _____ Length of Pain (in days): _____

	NONE	MILD	MODERATE	SEVERE
Throbbing	0)_____	1)_____	2)_____	3)_____
Shooting	0)_____	1)_____	2)_____	3)_____
Stabbing	0)_____	1)_____	2)_____	3)_____
Sharp	0)_____	1)_____	2)_____	3)_____
Cramping	0)_____	1)_____	2)_____	3)_____
Gnawing	0)_____	1)_____	2)_____	3)_____
Hot-Burning	0)_____	1)_____	2)_____	3)_____
Aching	0)_____	1)_____	2)_____	3)_____
Heavy	0)_____	1)_____	2)_____	3)_____
Tender	0)_____	1)_____	2)_____	3)_____
Splitting	0)_____	1)_____	2)_____	3)_____
Tiring-Exhausting	0)_____	1)_____	2)_____	3)_____
Sickening	0)_____	1)_____	2)_____	3)_____
Fearful	0)_____	1)_____	2)_____	3)_____
Punishing-Cruel	0)_____	1)_____	2)_____	3)_____

Severity Grading	Working Ability	Systemic Symptoms	Analgesics
Mild (1)	Rarely affected	None	Rarely Required
Moderate (2)	Moderately affected	Few	Required
Severe (3)	Clearly inhibited	Apparent	Poor effect

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