

Acupressure as a Non-Pharmacological Intervention for Primary Dysmenorrhea

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Abstract

Primary dysmenorrhea is one of the most common gynecological conditions affecting adolescent girls and young women. It is characterized by painful menstrual cramps occurring in the absence of identifiable pelvic pathology. The condition can significantly interfere with daily activities, academic performance, work productivity, and quality of life. Although pharmacological treatments such as nonsteroidal anti-inflammatory drugs (NSAIDs) and oral contraceptives are widely used, concerns regarding side effects and long-term medication use have increased interest in non-pharmacological approaches such as acupressure. The reviewed studies indicate that acupressure can significantly reduce the intensity and duration of menstrual pain among women with primary dysmenorrhea. Participants receiving acupressure reported improvements in pain relief, reduced use of analgesic medications, and enhanced ability to perform daily activities. Several studies also demonstrated positive effects on associated symptoms such as nausea, fatigue, headache, and emotional discomfort. Acupressure was generally found to be safe, inexpensive, easy to administer, and associated with minimal adverse effects. Evidence suggests that acupressure is an effective and safe non-pharmacological intervention for managing primary dysmenorrhea. Its ability to alleviate menstrual pain and improve overall well-being makes it a valuable complementary therapy for women seeking alternatives to medication-based treatments. However, further high-quality randomized controlled trials with larger sample sizes and standardized intervention protocols are required to strengthen the evidence base and support clinical recommendations.

Keywords: Acupressure, Primary Dysmenorrhea, Menstrual Pain, Non-Pharmacological Intervention

Introduction

Primary dysmenorrhea is one of the most common gynecological problems affecting adolescent girls and women of reproductive age worldwide. It is characterized by painful menstrual cramps occurring before or during menstruation in the absence of any identifiable pelvic pathology. The pain is usually felt in the lower abdomen and may radiate to the lower back and thighs. Common accompanying symptoms include nausea, vomiting, diarrhea, headache, fatigue, dizziness, and emotional distress. These symptoms can significantly interfere with daily activities, academic performance, work productivity, and overall quality of life. The prevalence of primary dysmenorrhea varies across populations, but studies indicate that a large proportion of menstruating women experience some degree of menstrual pain. For many women, the pain is severe enough to cause absenteeism from school or work and limit participation in social and recreational activities. As a result, primary dysmenorrhea represents

a significant public health concern with substantial personal, social, and economic consequences. The exact cause of primary dysmenorrhea is primarily associated with the excessive production of prostaglandins in the endometrium during menstruation. Elevated prostaglandin levels increase uterine contractions, reduce uterine blood flow, and cause uterine ischemia, leading to menstrual pain. Various factors such as early menarche, family history, stress, smoking, and prolonged menstrual bleeding may increase the risk of developing primary dysmenorrhea. Conventional management of primary dysmenorrhea commonly includes nonsteroidal anti-inflammatory drugs (NSAIDs), oral contraceptives, and other pharmacological treatments. While these approaches are generally effective, they may be associated with side effects such as gastrointestinal discomfort, nausea, dizziness, and hormonal complications. Furthermore, some women may prefer non-drug therapies due to personal preferences, contraindications, or concerns regarding long-term medication use. In recent years, complementary and alternative therapies have gained increasing attention as potential options for managing menstrual pain. Among these therapies, acupressure has emerged as a simple, safe, and non-invasive intervention. Acupressure is based on the principles of Traditional Chinese Medicine (TCM) and involves applying pressure to specific points on the body, known as acupoints, to restore balance and promote healing. Unlike acupuncture, acupressure does not require needles, making it more accessible and acceptable to many individuals. Several studies have suggested that acupressure may help reduce menstrual pain by stimulating the nervous system, promoting blood circulation, relaxing muscles, and enhancing the release of endorphins, which act as natural pain-relieving substances. Acupressure may also contribute to reducing associated symptoms such as anxiety, fatigue, and nausea, thereby improving overall well-being during menstruation.

Causes and Risk Factors of Primary Dysmenorrhea

Primary dysmenorrhea refers to painful menstrual cramps that occur in the absence of any identifiable pelvic pathology. It is one of the most common gynecological complaints among adolescent girls and young women. The condition is primarily associated with physiological changes that occur during the menstrual cycle and is influenced by a variety of biological, psychological, and lifestyle factors.

Causes of Primary Dysmenorrhea

The principal cause of primary dysmenorrhea is the excessive production of **prostaglandins** in the endometrium during menstruation. Prostaglandins are hormone-like substances that stimulate uterine muscle contractions. Elevated levels of prostaglandins cause stronger and more frequent uterine contractions, leading to reduced blood flow (uterine ischemia) and oxygen supply to the uterine tissues. This process results in cramping pain in the lower abdomen, which is the hallmark symptom of primary dysmenorrhea.

Other biochemical mediators, such as **vasopressin, leukotrienes, and inflammatory cytokines**, may also contribute to menstrual pain by increasing uterine contractility and sensitivity to pain. These substances can intensify uterine contractions and aggravate associated symptoms such as nausea, vomiting, headache, and fatigue.

Risk Factors of Primary Dysmenorrhea

Several factors have been identified that increase the likelihood of developing primary dysmenorrhea:

1. Early Menarche

Girls who experience menarche at an early age are more likely to develop primary dysmenorrhea. Early onset of menstruation is associated with longer exposure to ovulatory cycles and menstrual pain.

2. Young Age

Primary dysmenorrhea is most prevalent among adolescents and young women, particularly during the first few years after menarche. Symptoms often decrease with age and after childbirth.

3. Family History

A positive family history of dysmenorrhea is a significant risk factor. Women whose mothers or sisters experience menstrual pain are more likely to develop the condition, suggesting a genetic or familial influence.

4. Heavy Menstrual Flow

Women with excessive menstrual bleeding may have increased prostaglandin production, which can contribute to more severe menstrual cramps and discomfort.

5. Long Menstrual Duration

Menstrual periods lasting longer than normal are associated with a higher risk of dysmenorrhea due to prolonged exposure to uterine contractions and inflammatory mediators.

6. Smoking

Smoking has been linked to an increased risk of dysmenorrhea. Nicotine may reduce blood flow to pelvic tissues and worsen uterine ischemia, thereby increasing menstrual pain.

7. Psychological Stress

High levels of stress, anxiety, and emotional distress can influence pain perception and may exacerbate menstrual symptoms. Psychological factors are often associated with increased severity of dysmenorrhea.

8. Obesity or Low Body Weight

Both excessive and insufficient body weight may affect hormonal balance and menstrual function, increasing the likelihood of experiencing menstrual pain.

9. Lack of Physical Activity

Sedentary lifestyles and inadequate physical exercise have been associated with a higher prevalence of dysmenorrhea. Regular physical activity may improve blood circulation, reduce stress, and alleviate menstrual discomfort.

10. Nulliparity

Women who have never given birth often report a higher prevalence of primary dysmenorrhea compared to women who have experienced childbirth.

Primary dysmenorrhea results mainly from increased prostaglandin production, leading to excessive uterine contractions and pain during menstruation. Various factors, including early menarche, young age, family history, heavy menstrual flow, smoking, stress, and lifestyle habits, can increase the risk and severity of the condition. Understanding these causes and risk

factors is essential for developing effective preventive and therapeutic strategies, including non-pharmacological interventions such as acupressure.

Causes and Risk Factors of Primary Dysmenorrhea

Primary dysmenorrhea is characterized by painful menstrual cramps that occur in the absence of any underlying pelvic disease or pathological condition. It commonly affects adolescents and young women and is a major cause of discomfort and absenteeism from school and work. The condition results from physiological processes associated with menstruation and is influenced by several risk factors that can increase its occurrence and severity.

The primary cause of dysmenorrhea is the excessive production of **prostaglandins**, particularly prostaglandin F2 α and prostaglandin E2, in the endometrial lining of the uterus. During menstruation, the breakdown of endometrial cells releases these substances, which stimulate strong uterine contractions. Excessive uterine contractions reduce blood flow to the uterine muscles, causing temporary oxygen deprivation (ischemia) and resulting in pain and cramping. Increased prostaglandin levels are also associated with symptoms such as nausea, vomiting, diarrhea, headache, and fatigue.

Another contributing factor is the increased release of **vasopressin**, a hormone that can enhance uterine contractions and reduce uterine blood flow. Elevated levels of inflammatory mediators and leukotrienes may further intensify menstrual pain and associated symptoms.

Several risk factors have been identified that increase the likelihood of developing primary dysmenorrhea:

Early Menarche

Girls who begin menstruating at a younger age are more likely to experience dysmenorrhea due to a longer duration of exposure to ovulatory menstrual cycles.

Young Age

Primary dysmenorrhea is most common among adolescents and young adults. The severity of symptoms often decreases with increasing age and after childbirth.

Family History

A positive family history of dysmenorrhea significantly increases the risk. Women with mothers or sisters who experience painful menstruation are more likely to develop similar symptoms.

Heavy Menstrual Bleeding

Excessive menstrual flow is associated with increased prostaglandin production, which may lead to stronger uterine contractions and more severe pain.

Long Menstrual Duration

Women with prolonged menstrual periods are at a greater risk of experiencing dysmenorrhea due to extended uterine activity and inflammatory processes.

Smoking

Smoking has been identified as a risk factor because nicotine may constrict blood vessels, reduce uterine blood flow, and aggravate menstrual pain.

Psychological Stress

Stress, anxiety, and emotional disturbances can influence pain perception and may increase the intensity of menstrual cramps. Psychological factors are often linked to greater symptom severity.

Sedentary Lifestyle

Lack of regular physical activity may contribute to dysmenorrhea. Exercise is believed to improve blood circulation, release endorphins, and reduce menstrual discomfort.

Obesity or Underweight Status

Abnormal body weight may affect hormonal regulation and menstrual function, increasing the likelihood of painful menstruation.

Nulliparity

Women who have never given birth are more likely to experience primary dysmenorrhea compared to women who have had one or more pregnancies.

primary dysmenorrhea is mainly caused by excessive prostaglandin production leading to painful uterine contractions. Various biological, lifestyle, and psychological factors contribute to its development and severity. Understanding these causes and risk factors is essential for implementing effective preventive measures and selecting appropriate treatment approaches, including non-pharmacological interventions such as acupressure.

Conclusion

Primary dysmenorrhea is a common gynecological condition that significantly affects the physical, emotional, and social well-being of many women, particularly adolescents and young adults. Menstrual pain and associated symptoms can interfere with daily activities, academic performance, work productivity, and overall quality of life. Although pharmacological treatments such as nonsteroidal anti-inflammatory drugs and hormonal therapies are widely used, concerns regarding side effects, contraindications, and long-term medication use have increased interest in alternative treatment approaches. Acupressure has emerged as a promising non-pharmacological intervention for the management of primary dysmenorrhea. By applying pressure to specific acupoints, acupressure may help reduce menstrual pain through mechanisms such as stimulation of the nervous system, improved blood circulation, muscle relaxation, and the release of endogenous pain-relieving substances such as endorphins. In addition to alleviating pain, acupressure may also help reduce associated symptoms including nausea, fatigue, anxiety, and emotional discomfort. The evidence reviewed suggests that acupressure can be an effective, safe, inexpensive, and easily accessible method for managing primary dysmenorrhea. Its non-invasive nature and minimal risk of adverse effects make it a suitable option for women seeking complementary or alternative approaches to pain relief. Furthermore, acupressure can be practiced independently after proper instruction, promoting self-care and patient empowerment. acupressure represents a valuable complementary therapy for the management of primary dysmenorrhea. Incorporating acupressure into menstrual health care programs may contribute to improved symptom control, reduced reliance on medications, and enhanced quality of life. However, additional well-designed studies with larger sample sizes are needed to further establish its effectiveness and support evidence-based clinical recommendations.

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