

Effects of Acupressure on Anxiety Reduction in Preoperative Patients**Dr. Elena V. Markovic**

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Abstract

Preoperative anxiety is a common psychological response among patients awaiting surgical procedures and is often associated with increased stress, elevated blood pressure, prolonged recovery, and higher analgesic requirements. Non-pharmacological interventions are increasingly being explored to complement standard medical care. This study examines the effects of acupressure on anxiety reduction in preoperative patients and evaluates its potential as a safe, cost-effective supportive therapy. The application of acupressure at specific therapeutic points prior to surgery and assesses changes in anxiety levels using validated psychological scales and physiological indicators such as heart rate and blood pressure. The findings indicate that acupressure significantly reduces preoperative anxiety compared to routine care alone. Patients receiving acupressure demonstrated lower self-reported anxiety scores and improved physiological stability before surgery.

Keywords: Acupressure; Preoperative Anxiety; Non-Pharmacological Intervention**Introduction**

Undergoing surgery is often associated with significant psychological stress. Many patients experience fear related to anesthesia, postoperative pain, surgical outcomes, and potential complications. This preoperative anxiety can trigger physiological responses such as elevated heart rate, increased blood pressure, and hormonal imbalance, which may negatively influence surgical recovery and overall patient well-being. Managing anxiety before surgery has therefore become an important component of perioperative care. Pharmacological agents such as sedatives and anxiolytics are commonly used to reduce preoperative anxiety. However, these medications may cause side effects including drowsiness, respiratory depression, and delayed recovery. As a result, healthcare providers increasingly explore complementary and non-pharmacological approaches that can safely support emotional stability without adverse effects. Acupressure, a technique rooted in traditional Chinese medicine, involves applying pressure to specific points on the body to stimulate physiological responses. It is based on the concept that stimulating certain meridian points can promote relaxation, regulate energy flow, and restore balance within the body. Unlike acupuncture, acupressure does not involve needles, making it non-invasive and easy to administer in clinical settings. Emerging evidence suggests that acupressure may reduce anxiety by influencing the autonomic nervous system and promoting the release of endorphins. Stimulation of commonly used points, such as Pericardium 6 (P6) and Yintang, has been associated with decreased stress levels and improved emotional calmness. These effects make acupressure a promising supportive therapy for patients awaiting surgery. The effects of acupressure on anxiety reduction in preoperative patients. It examines

both psychological and physiological outcomes to assess whether acupuncture can serve as an effective complementary intervention within perioperative care protocols. By evaluating its potential benefits, the research aims to contribute to patient-centered strategies that enhance comfort and improve surgical outcomes.

Preoperative Anxiety: Causes and Clinical Implications

Preoperative anxiety refers to the emotional distress and fear experienced by patients prior to undergoing surgical procedures. It is a common and clinically significant concern that can affect both psychological well-being and physiological stability. Understanding its causes and implications is essential for developing effective interventions such as acupuncture.

1. Causes of Preoperative Anxiety

Preoperative anxiety arises from multiple psychological and situational factors. Common causes include:

- Fear of surgical complications or unfavorable outcomes
- Concern about anesthesia and loss of consciousness
- Anticipation of postoperative pain
- Previous negative medical experiences
- Lack of clear information about the procedure
- Separation from family or unfamiliar hospital environments

Individual characteristics such as age, gender, educational background, and personality traits may also influence anxiety levels. Patients undergoing major or first-time surgeries often report higher anxiety compared to those with prior surgical experience.

2. Psychological Impact

Anxiety before surgery can intensify feelings of helplessness, uncertainty, and emotional instability. Elevated anxiety levels may impair patients' ability to process medical information and provide informed consent. It can also reduce trust in healthcare providers and negatively affect overall patient satisfaction.

Persistent psychological stress may lead to sleep disturbances, irritability, and decreased coping ability prior to surgery.

3. Physiological Responses to Anxiety

Preoperative anxiety activates the sympathetic nervous system, leading to physiological changes such as:

- Increased heart rate
- Elevated blood pressure
- Rapid breathing
- Increased cortisol and stress hormone levels

These responses may complicate anesthesia induction and surgical procedures. Heightened physiological stress can also impair immune function and delay wound healing.

4. Clinical Consequences

High levels of preoperative anxiety have been associated with:

- Greater requirement for anesthetic and analgesic medications
- Increased perception of postoperative pain
- Longer hospital stays

- Delayed recovery
- Higher risk of postoperative complications

Additionally, anxious patients may experience increased postoperative nausea, vomiting, and sleep disturbances, further affecting recovery outcomes.

5. Importance of Early Intervention

Given its psychological and physiological effects, early identification and management of preoperative anxiety are critical. Non-pharmacological approaches such as relaxation techniques, patient education, music therapy, and acupressure offer supportive strategies that complement conventional medical care.

Preoperative anxiety is a multifactorial condition with significant clinical implications. Its impact extends beyond emotional discomfort to influence physiological stability and surgical recovery. Addressing anxiety through safe and effective interventions can improve patient comfort, enhance perioperative outcomes, and support holistic healthcare practices.

Physiological Mechanisms of Acupressure in Anxiety Reduction

Acupressure is believed to reduce anxiety through complex neurophysiological and biochemical mechanisms. Although rooted in traditional healing systems, modern research increasingly explains its effects through interactions with the nervous, endocrine, and circulatory systems. Understanding these mechanisms helps clarify how acupressure may benefit preoperative patients experiencing anxiety.

1. Modulation of the Autonomic Nervous System

Anxiety activates the sympathetic branch of the autonomic nervous system, producing the “fight-or-flight” response. This leads to elevated heart rate, increased blood pressure, and heightened stress hormone release.

Acupressure stimulation at specific points is thought to enhance parasympathetic activity while suppressing excessive sympathetic stimulation. This shift promotes relaxation, stabilizes heart rate, and lowers blood pressure. The resulting physiological calmness contributes directly to reduced anxiety levels.

2. Release of Endorphins and Neurotransmitters

Pressure applied to therapeutic points may stimulate sensory nerve endings, triggering the release of endogenous opioids such as endorphins. These natural chemicals promote relaxation and reduce stress perception.

Acupressure may also influence neurotransmitters such as serotonin and gamma-aminobutyric acid (GABA), which are associated with mood regulation and emotional stability. Increased serotonin levels are linked to improved psychological well-being and reduced anxiety symptoms.

3. Regulation of the Hypothalamic–Pituitary–Adrenal (HPA) Axis

The HPA axis plays a central role in the body’s stress response. Anxiety leads to increased secretion of cortisol and other stress hormones.

Studies suggest that acupressure may modulate HPA axis activity, resulting in lower cortisol levels. Reduced stress hormone production helps maintain physiological balance and supports emotional relaxation before surgery.

4. Improved Blood Circulation and Oxygenation

Stimulation of acupressure points may enhance local and systemic blood circulation. Improved circulation supports oxygen delivery to tissues and promotes overall physiological stability.

Better circulation can reduce muscle tension and physical discomfort often associated with anxiety, contributing to a sense of calmness.

5. Sensory Stimulation and Gate Control Theory

According to the gate control theory of pain and sensory perception, stimulation of specific nerve fibers can influence how the brain processes stress and discomfort signals.

Acupressure activates mechanoreceptors in the skin and muscles, which may modulate neural pathways involved in stress perception. This sensory input can reduce the intensity of anxiety-related responses.

6. Psychological Relaxation Response

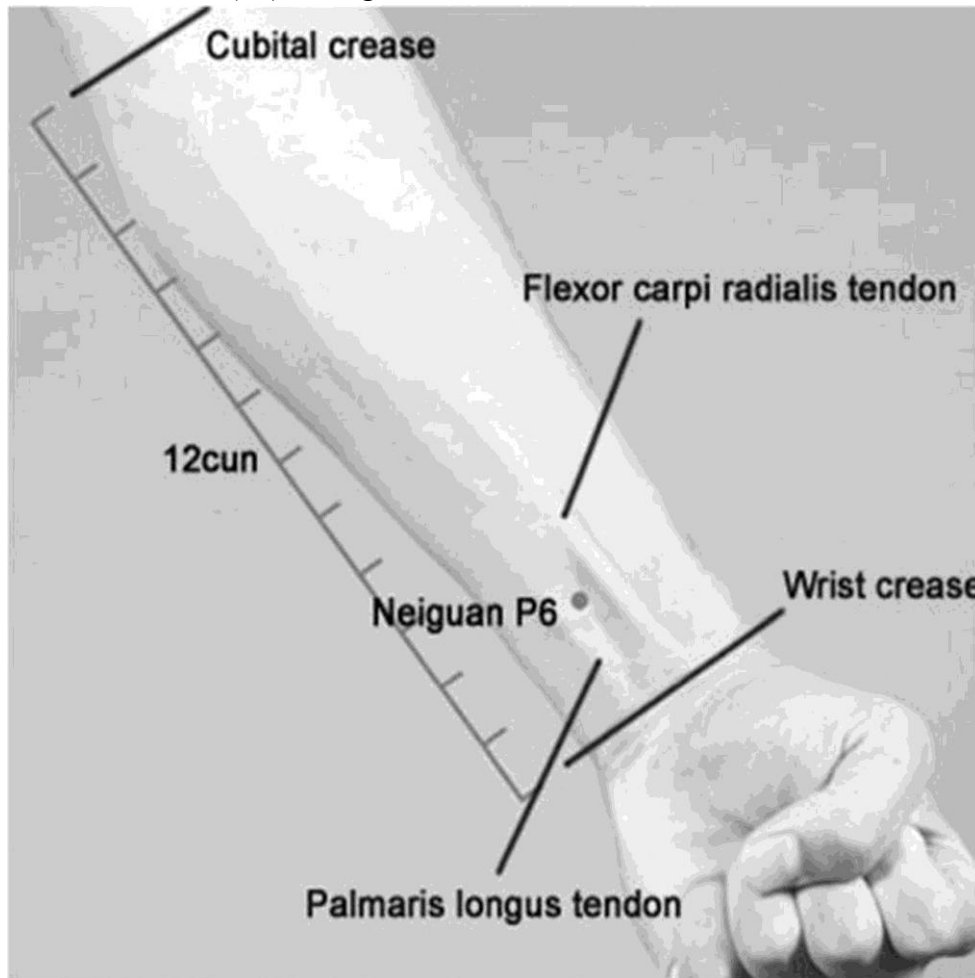
Beyond physiological effects, acupressure often induces a relaxation response characterized by slower breathing, reduced muscle tension, and enhanced mental focus. This response counteracts the physiological stress reaction and promotes emotional balance.

Acupressure reduces anxiety through multiple interconnected physiological pathways, including autonomic nervous system regulation, neurotransmitter release, hormonal balance, and sensory modulation. These mechanisms collectively promote relaxation and emotional stability. In preoperative settings, such physiological effects may help stabilize patients, reduce stress responses, and improve overall surgical outcomes.

Common Acupressure Points Used in Preoperative Care

In preoperative settings, specific acupressure points are commonly stimulated to promote relaxation, reduce anxiety, and stabilize physiological responses. These points are selected based on traditional meridian theory and growing clinical evidence supporting their calming effects. Among the most frequently used points are Pericardium 6 (P6), Yintang (EX-HN3), and Shenmen (HT7).

1. Pericardium 6 (P6) – Neiguan



Location: P6 is located on the inner forearm, approximately three finger-widths below the wrist crease, between the two prominent tendons.

Clinical Significance: P6 is widely used to reduce anxiety, nausea, and vomiting. It is particularly common in perioperative care because of its dual benefits in controlling preoperative anxiety and postoperative nausea.

Mechanism of Action: Stimulation of P6 is believed to regulate autonomic nervous system activity, promoting parasympathetic dominance and reducing stress responses. It may also influence serotonin pathways, contributing to emotional stability.

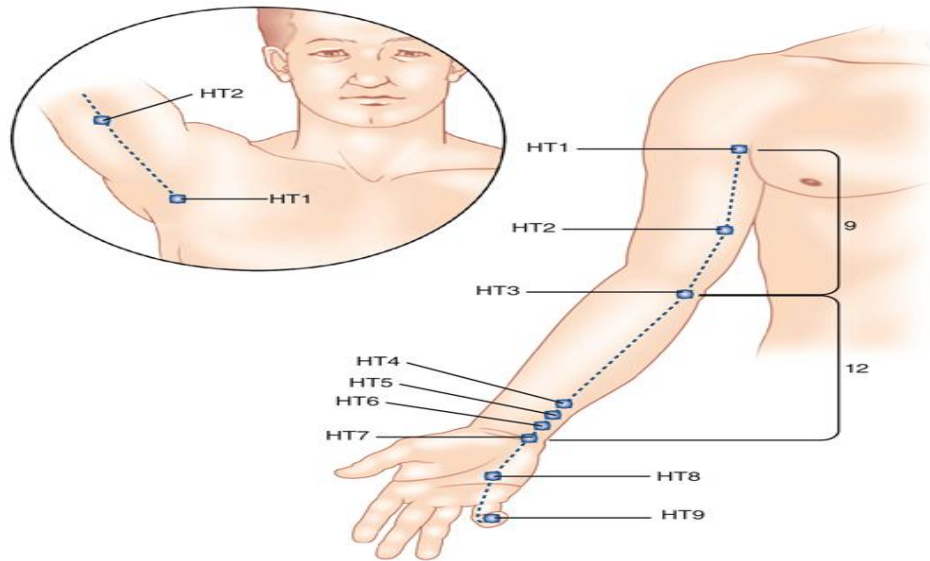
2. Yintang (EX-HN3)

Location: Yintang is located between the eyebrows, at the midpoint of the forehead.

Clinical Significance: Often referred to as the “third eye point,” Yintang is associated with calming the mind and reducing agitation. It is commonly used to alleviate anxiety, stress, insomnia, and restlessness.

Mechanism of Action: Gentle pressure on Yintang may stimulate relaxation responses and reduce sympathetic nervous activity. Its calming effect can help stabilize heart rate and promote emotional balance prior to surgery.

3. Shenmen (HT7)



Location:

HT7 is located on the inner wrist crease, on the little finger side, near the tendon area.

Clinical Significance: Shenmen, meaning “Spirit Gate,” is traditionally used to calm the mind and reduce emotional disturbances. It is frequently applied in cases of anxiety, insomnia, and palpitations.

Mechanism of Action: Stimulation of HT7 is thought to influence neurotransmitter regulation and promote parasympathetic activation. This contributes to reduced anxiety and improved emotional stability.

Yintang (EX-HN3), and Shenmen (HT7) are among the most commonly utilized acupressure points in preoperative care. Their stimulation supports relaxation, autonomic regulation, and emotional balance. When applied correctly, these points offer a safe and non-invasive method to reduce anxiety and enhance patient comfort before surgical procedures.

Conclusion

Preoperative anxiety is a common and clinically significant concern that can negatively influence both psychological well-being and physiological stability in surgical patients. Elevated anxiety levels are associated with increased heart rate, blood pressure fluctuations, higher anesthetic requirements, and delayed recovery. Addressing this condition through safe and effective interventions is therefore essential for improving perioperative outcomes. The evidence discussed highlights that acupressure offers a promising complementary approach for reducing preoperative anxiety. By stimulating specific points such as Pericardium 6 (P6), Yintang (EX-HN3), and Shenmen (HT7), acupressure may regulate autonomic nervous system activity, promote neurotransmitter balance, and reduce stress hormone levels. These physiological responses contribute to emotional calmness and improved patient stability prior to surgery. In addition to its clinical effectiveness, acupressure presents several practical advantages. It is non-invasive, cost-effective, easy to administer, and associated with minimal risk. It can be applied by trained healthcare professionals or guided for self-administration under supervision, making it a feasible addition to routine perioperative care. While further large-scale clinical trials may strengthen the evidence base, current findings support the

integration of acupressure as part of a holistic, patient-centered approach to surgical care. Incorporating such non-pharmacological strategies may enhance patient comfort, reduce reliance on sedative medications, and contribute to improved overall surgical experiences and outcomes.

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