



ACUPRESSURE AS A COMPLEMENTARY INTERVENTION IN THE MANAGEMENT OF ANEMIA: A CONCEPTUAL REVIEW

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<https://doi.org/10.47211/idcij.2026.v13i02.009>

ABSTRACT

Anaemia remains a significant global public health concern, particularly among adolescent girls and women of reproductive age. Conventional management strategies primarily focus on iron supplementation, dietary modification, and treatment of underlying causes. However, challenges such as poor compliance, side effects, and limited accessibility necessitate exploration of complementary approaches. Acupressure, a non-invasive technique derived from traditional Chinese medicine, has gained attention as a supportive therapy. This conceptual paper explores the theoretical basis, mechanisms, and potential role of acupressure in the management of anaemia. It proposes that acupressure may enhance blood circulation, improve gastrointestinal function, and promote physiological balance, thereby supporting haematological health. The paper also presents a conceptual framework integrating acupressure with conventional anaemia management and highlights directions for future research.

Key Words: Acupressure, anaemia, complementary therapy, haemoglobin, integrative medicine, adolescent health

INTRODUCTION

Anaemia is a blood related disease or disease of blood forming organs. Anaemia is a condition in which there is insufficient haemoglobin in the circulation which in return causes the alteration of the delivery of oxygen to the cell. Anaemia can be caused because of many reasons like less formation of red blood cells, repression of bone marrow, unusual haematolysis, haemorrhage, kidney disorder, drug addiction, not taking iron orally in meal. Anaemia can be categorised by drowsiness, lethargic, fragility, dyspnoeic, dizzy, trembled, dull appearance and tachycardia. The girls with menstrual cycle, antenatal mothers, heredity with haematological disorder, unbalanced meal or meal with insufficient nutrition are the population at the risk of anaemia.¹

Anaemia is a very general red blood cells disease. It is a considerable health issue in the people. Anaemia can influence the public of all age brackets. In anaemia the red blood cells in the body are reduced up to noticeable levels. There are different types of anaemia which includes anaemia in which there is destruction of RBCs in the body called as haemolytic anaemia; anaemia in which there is very few Red blood cells present in the body due to little intake of iron, called as Iron Deficiency Anaemia, anaemia which is caused by the lack of Vitamin B₁₂ and Folate in the body, known as (Megaloblastic anaemia) where the body is unable to absorb enough vitamin B₁₂ (Pernicious anaemia). Person who is suffering from anaemia may face its complications, such as cardiac infarction where due to lack of Hb the body tissues are not receiving enough O₂ forcing the heart to work harder to fulfil the requirement of the tissues. Feeling of numbness is common in pernicious anaemia along with acute change in the mental status because of insufficient supply of O₂ to the brain cells.²

Anaemia is a serious general health issue in India which influences a female all through her life. Anaemia restricts the growth, academic capability and working capacity. It brings down the focus in routine work; the afflicted person becomes more susceptible to acquire contaminated diseases and it also brings down the task productivity in both the genders. Anaemia in women is related to pre-term birth and maternal morbidity and mortality during pregnancy. Puberty is a good time to act to mark the issue, as this is the crucial period of growth.³

An Acupressure technique was created long ago in China as an alternative treatment therapy. The principle behind the acupressure therapy is triggering the acupressure points on the body around the meridian points. During acupressure therapy, the pressure is applied with thumb of the hands at the particular points to maintain the passage of psychological energy throughout the body. By putting pressure and relieving the acupressure points it will help in reducing the muscular rigidity which will result in flow of energy within the body.⁴



Acupressure provokes capillarisation in circulation. Capillarisation is the process of enhancing the number of capillaries in the circulation. This is done by stimulating a revival of blood flow to a portion by applying a pressure to a localised area. It results raising the level of O₂ in the cells. Acupressure also helps in exchanging the cells within soft tissues. Exchanging cells means interchanging the cells inside and outside of the tissues. Acupressure raises the circulation of blood to a portion which results in replacing the metabolic wastes and contaminations with O₂ and nutrients. Interchanging the cells in the tissue helps in removing the wrong cells and keeping the tissues healthy. All this helps in healing the injured tissue by providing proper O₂ and nutrition to the cells through improving the circulation.⁵

CONCEPTUAL BASIS OF ACUPRESSURE

Traditional Chinese Medicine Perspective

In Traditional Chinese Medicine (TCM), conditions resembling anaemia are not described only in terms of reduced haemoglobin levels; rather, they are interpreted as imbalances of *Blood* (Xue) and *Qi* (vital energy). Blood is considered essential for nourishing body tissues and maintaining physiological functions, while Qi is regarded as the vital force responsible for movement, transformation, and protection in the body. Deficiency or imbalance in either of these components can result in symptoms similar to anaemia, including fatigue, pallor, dizziness, and weakness.⁶

Acupressure is based on the principle of restoring internal balance by stimulating specific acupoints located along meridians. This stimulation is believed to regulate the flow of Qi and Xue (blood) and thereby improve overall health status.⁷ Special emphasis is placed on strengthening the spleen and stomach systems, which are considered fundamental in the production and regulation of Qi and Xue in TCM (Traditional Chinese Medicine).⁸ The spleen is believed to transform nutrients into vital energy and blood, whereas the stomach plays a key role in receiving and digesting food.⁶

Regular stimulation of acupoints is thought to produce several beneficial effects, such as enhancing the spleen's transformation and transportation functions, improving digestion and nutrient absorption, promoting the formation and circulation of blood, and restoring the smooth flow of Qi throughout the body.⁸

The key meridians involved in this process include the spleen meridian, which is associated with blood production and fluid balance; the stomach meridian, which supports digestion and nutrient absorption; and the liver meridian, which regulates the storage and smooth circulation of Blood. The coordinated functioning of these meridians is essential for maintaining haematological balance and overall vitality.

Biomedical Perspective

From a modern biomedical perspective, the effects of acupressure are explained through neurophysiological and biochemical mechanisms rather than traditional energy flow concepts. When pressure is applied to specific acupoints, it stimulates peripheral sensory receptors, which transmit signals through afferent nerve pathways to the central nervous system. This neural activation contributes to the regulation of multiple physiological processes.⁹

Research suggests that acupressure can influence several body systems:

- *Peripheral nerve stimulation:* Activation of mechanoreceptors and nociceptors can alter pain perception and regulate autonomic responses.⁹
- *Microcirculation:* The application of pressure enhances local blood flow, improving oxygen supply and facilitating the removal of metabolic waste products.¹⁰
- *Autonomic nervous system balance:* Acupressure may promote parasympathetic activity, leading to reduced stress and improved physiological stability.¹¹
- *Hormonal regulation:* It may help lower stress-related hormones such as cortisol while increasing the release of endorphins and serotonin, thereby improving overall well-being.

Although acupressure does not directly stimulate haemoglobin production, these physiological effects may help create favourable internal conditions that support haematopoiesis, particularly when combined with appropriate nutritional and medical management.¹²



PATHOPHYSIOLOGY OF ANEMIA

Anaemia is defined as a reduction in haemoglobin concentration or red blood cell mass, resulting in decreased oxygen-carrying capacity of the blood. It is a multifactorial condition with a variety of underlying causes, which may include nutritional deficiencies, chronic diseases, genetic disorders, or blood loss.¹³

The major causes of anaemia are multifactorial including the following prime aetiological factors:

- **Nutritional deficiencies:** Iron deficiency remains the most common cause worldwide, followed by deficiencies of folate and vitamin B₁₂, all of which are major etiological factors related to reduced red blood cell production.¹⁴
- **Chronic diseases:** Conditions such as chronic kidney disease, persistent infections, and inflammatory disorders can interfere with erythropoiesis and reduce red blood cell production.¹⁴
- **Blood loss:** Both acute and chronic blood loss contribute significantly to anaemia. In adolescent girls, menstrual blood loss is a major contributing factor.¹⁴
- **Impaired red blood cell production:** Disorders affecting the bone marrow or hormonal imbalances may disrupt normal erythropoiesis.¹⁴

Among these causes, iron deficiency anaemia is the most prevalent form globally, particularly among adolescent girls due to increased nutritional requirements, menstrual losses, and inadequate dietary intake.

MECHANISMS LINKING ACUPRESSURE AND HEMOGLOBIN IMPROVEMENT

Enhancement of Blood Circulation

One of the key physiological effects of acupressure is the improvement of both peripheral and systemic blood circulation. Mechanical stimulation of acupoints can lead to vasodilation and increased local blood flow. Improved circulation enhances the delivery of oxygen and essential nutrients to body tissues, which is necessary for maintaining cellular function.⁷

Better blood flow may also facilitate the transport of iron and other nutrients involved in haematopoiesis, thereby indirectly supporting haemoglobin synthesis. Furthermore, increased circulation to vital organs such as the liver and spleen may enhance their roles in metabolism and regulation of blood components.⁷

Improvement in Digestive Function

The gastrointestinal system plays a central role in the absorption of nutrients required for haemoglobin production. Acupressure has been reported to positively influence digestive function by stimulating specific acupoints. One commonly used point is **ST36 (Zusanli)**, which is known for its beneficial effects on gastrointestinal health and overall vitality.¹⁰

By improving digestion and nutrient absorption, acupressure may indirectly contribute to better availability of iron and other micronutrients necessary for red blood cell formation.

Stimulation of specific acupoints is believed to enhance gastrointestinal function in several ways:

- Improving gastric motility and digestive secretions
- Enhancing intestinal absorption of nutrients
- Increasing the bioavailability of iron and other essential micronutrients

By improving overall digestive efficiency, acupressure may complement nutritional interventions aimed at correcting anaemia. This is particularly beneficial in populations where anaemia is associated with inadequate dietary intake or malabsorption of nutrients.

Stress Reduction and Hormonal Balance

Chronic stress can significantly affect physiological processes, including haematopoiesis. Elevated levels of stress hormones, particularly cortisol, may suppress bone marrow activity and impair red blood cell production.

Acupressure may help reduce stress through several mechanisms:

- Activation of the parasympathetic nervous system
- Reduction in cortisol levels
- Promotion of relaxation and emotional stability.

Improvement in neuroendocrine balance creates a more supportive internal environment for red blood cell production and overall physiological well-being.⁹



Stimulation of Haematopoietic Activity (Theoretical Perspective)

Although direct scientific evidence linking acupressure to increased haemoglobin synthesis remains limited, several indirect mechanisms suggest a supportive role in haematopoiesis. Improved blood circulation, enhanced nutrient absorption, and reduced physiological stress may collectively contribute to optimal bone marrow function.

From a conceptual perspective, acupressure may:

- Enhance overall metabolic efficiency
- Support better utilisation of nutrients involved in red blood cell formation
- Promote internal balance necessary for haematopoietic processes.¹⁶

From a conceptual standpoint, acupressure may:

- Enhance metabolic efficiency
- Support organ systems involved in blood production
- Improve overall physiological homeostasis

These combined effects may lead to gradual improvements in haemoglobin levels when acupressure is used alongside conventional treatments such as iron supplementation and dietary modifications.

INTEGRATION WITH CONVENTIONAL TREATMENT

Acupressure + Iron Supplementation

- Improves absorption
- Reduces side effects
- Enhances compliance

Acupressure + Nutritional Therapy

- Supports digestion
- Enhances nutrient utilisation

Acupressure in Community Health Programmes

- Easily taught to adolescents
- Cost-effective intervention
- Promotes self-care

CONCLUSION

Acupressure represents a promising complementary approach in the management of anaemia. While its mechanisms are not fully understood, its potential to improve circulation, digestion, and overall physiological balance makes it a valuable adjunct to conventional therapies. Further empirical research is necessary to validate its effectiveness and establish clinical guidelines.

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