Photobiomodulation Therapy (PBMT) Can be One of the Major Therapy in the Healthcare

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Photobiomodulation Therapy (PBMT) is regarded as an alternative or complementary medicine in the current therapy, however, this medical treatment will be one of the most recent trends in healthcare. In the modern world, the life span of human beings has been prolonged by the progress of science and technology. Nevertheless, at the beginning, elderly will have some mild illness or symptoms such as sleep and pain disorders due to the Qi or energy gradually reducing at this range of generation.

As we know, medicine may cause side effects which can lead to several serious symptoms then result in severe new diseases. This vicious circle can worsen human healthcare. In this article, I present the potential of PBMT which can treat the diseases of pain and sleep disorders and can help alleviate these symptoms, therefore the usage of conventional medicine can be reduced.

For pain disorder, analgesics are usually used to reduce pain, however they have many side effects which are serious and lethal. Nowadays, the symptoms of Post Herpes Neuralgia (PHN) can be improved by radiating the area with an 830nm laser [1] which can moderate pain disorder instead of using Lyrica accompanied with unnecessary side effects. In our previous report, low back pain can be reduced by laser acupuncture [2,3] and in our animal study of PBMT [4], the pain factors can be reduced by radiating Zusanli (ST36) acupoint with laser acupuncture. PBMT can relieve pain and improve the healing process of Closed Bone Fractures (CBFs) in the human wrist and hand by 830nm diode lasers [5]. In addition, PBMT was effective in alleviating pain and symptoms, and improving functional ability and finger and hand strength for mild and moderate Carpal Tunnel Syndrome (CTS) patients with no side effects [6,7]. A systematic review and meta-analysis results revealed that applying PBMT on tender points or Myofascial Trigger Points (MTrPs) is an effective means to improve the Effect Size (ES) of pain release after treatment and follow-up [8]. Many researches and our studies reveal that PBMT can help pain relief, so the use of analgesics can be reduced. Further, the side effects caused by medicine can be reduced too.

In clinical, sleep disorders can almost be improved by using medication. For instance, insomnia is one of the most commonly reported sleep problems. Although taking medicine for treating short term insomnia is not a serious issue, long term insomnia can cause serious side effects, including deficiency of attention, lower immunity, even accidents. In 2009, we used a single laser to radiate the Neiguan acupoint on night shift workers to adjust their Parasympathetic Nervous System (PSN) and Heart Rate Variability (HRV) [9]. In 2012, we used an array laser to radiate the left palm of the subjects. Their brain waves were changed, especially α band had been increased in some regions and β band had been decreased for normal subjects in open eyes condition [10]. In closed eyes study, the alpha diffusion in the frontal lobe has been found in the laser group, it means the PBMT can help induce sleep [11]. Excepting medication, other alternative or complementary therapies are used to treat sleep problems, like as Massage Therapy, Energy Medicine, Aromatherapy, Tai Chi, Qi Gong etc. However, PBMT is the advanced way which can be operated and combined with other therapies to improve the efficiency of treatment. Moreover, PBMT can also adjust the rhythm in our body. Chronobiology is a science that study the time rhythm in our body; it means the endogenous substances in our body are controlled by circadian rhythm. Normally, the Qi in our body follow the exactly time to go through our organs according to the sequences: Gall bladder meridian (11 PM to 1:00 AM) → Liver meridian (1:00 AM to 3:00 AM) → Lung meridian (3:00 AM to 5:00 AM), etc., as shown in figure 1. Stay-up late and jet lag will change the circadian rhythm. We just need to stimulate the specific acupoint of meridian in specific periods. The circadian rhythm can be adjusted quickly, it means that the use of serotonin will be reduced too. For example, to stimulate Shangyang acupoint (Large intestine meridian) during 5 AM to 7 AM, Zhongchong acupoint (Pericardium meridian) during 7 PM to 9 PM and Guanchong acupoint (Triple energizer meridian) during 9 PM to 11 PM can help adjust the circadian rhythm, as shown in figure 2(a). Real operation of laser acupuncture is shown in figure 2(b).

From many scientific reports and our studies, PBMT has high potential to replace parts of conventional therapies. Due to the light energy input, it can energize the cells in our body and make the meridians connect organs smoothly. It can help to prevent diseases caused by aging. The side effects of medication will be reduced tremendously because of the reduction of drug use. Human health will be improved apparently.
References


