

Global Perspectives on Bell's Palsy: A Cross-Country Analysis of Therapeutic Approaches

By Andrew Liu

AUTHOR BIO

Andrew Liu is a rising Junior at Kent School in Kent, CT, with a passion for neuroscience and a goal of pursuing a career in medicine. He is a driven student, athlete, and has an ultimate goal of becoming a professional sports team physician; he plays football, basketball, and lacrosse at his high school. His interest in neuroscience stems from his unique experience being diagnosed with Bell's palsy, a neurological disorder that causes peripheral facial paralysis. While receiving treatment in the United States, Andrew reached out to many Chinese doctors online and noticed the difference in treatment between the two countries. With this experience, he aspires to conduct a research on Bell's palsy, specifically focusing on comparing and contrasting the different types of treatments used by physicians practicing in different countries.

ABSTRACT

Bell's palsy, an acute facial paralysis, causes significant physical and psychological distress in patients. This paper conducts a systematic review to compare and contrast treatment methods used worldwide. These countries include the United States (U.S.), China, India, and Brazil. This analysis reveals profound differences in practice and treatment philosophy between those countries. The U.S. employs a standardized, evidence-based pharmacological approach using corticosteroids and antiviral medications. This method is evidence-based and is supported by robust clinical trials that have demonstrated high recovery rates. China's approach employs Traditional Chinese Medicine, which primarily focuses on acupuncture, though evidence is still needed to demonstrate its efficacy. India's Ayurvedic system offers a holistic approach that features Nasya therapy and special neuroprotective herbs. Brazil presents an emerging alternative: bee venom therapy, which shows promising results in animal models but has not been rigorously tested in humans. Across this wide spectrum of treatment methods, the U.S. pharmacological protocol currently stands as the safest and most effective treatment based on clinical data. However, this study stresses the patient-centered model, where the physician's role is to guide the patient towards this evidence-based method while respectfully incorporating the patient's cultural preferences.

Keywords: *Bell's Palsy, Facial Paralysis, Therapeutic Approaches, Cross-country Comparison, Acupuncture, Corticosteroids, Ayurvedic System, Pharmacological Approach, Nasya Therapy, United States, China, India, Brazil*

INTRODUCTION

Bell's palsy (BP) is a common cranial neuropathy, causing acute unilateral lower motor neuron facial paralysis. It is estimated that 10–50 patients per 100,000 population are affected each year. The most common cause is idiopathic facial nerve palsy in 60–75% of cases. Immune and infectious mechanisms are all potential contributing factors to BP, but the precise cause remains unclear, although doctors must eliminate the possibility of viral infection when diagnosing. Bell's palsy results from the dysfunction of the 7th cranial nerve. The human facial nerve is the seventh cranial nerve (CN VII) comprising motor, sensory, and parasympathetic components. The seventh cranial nerve is responsible for voluntary and mimetic facial movement, taste to the anterior two-thirds of the tongue, and control of salivary gland and lacrimal gland secretions (Zhang et. al, 2019).

Bell's palsy is a disfiguring disease that has a serious impact on the patient's mental health and related social activities. Psychological distress was the single predictor of social disability for facial paralysis (VanSwearingen et al., 1998). Sugiura et al. evaluated patients with facial palsy and found high levels of psychological stress following the onset of the condition. Macgregor et al. found that patients with facial paralysis suffered distress each day and had problems with social interaction (Huang et al., 2012). What's more, many female patients experience more severe distress from their altered appearance as compared to their male counterparts. The negative behavioral factors, such as sensitivity, vigilance, and apprehension, are significantly more severe in female patients (Huang et al., 2012). Despite this overwhelming evidence, the standard treatment remains narrowly focused on physical recovery. The psychological trauma—social exclusion, reduced self-esteem, and the daily insecurity—continues to be overlooked in clinical practice. This shows a huge gap in patient care that demands attention, as true healing means addressing both the physical paralysis and the invisible scars that accompany it.

METHODOLOGY

A narrative literary review was conducted using PubMed, Google Scholar, and the China National Knowledge Infrastructure (CNKI) as primary databases. CNKI was selected for access to Chinese-language peer-reviewed journals. The databases were searched using the key terms “Bell's palsy psychological factors,” “Bell's palsy Treatment,” “Bell's palsy Around the World,” and “Bell's palsy in (country name)”, where both English and Chinese were applicable. The search was limited to articles published between 1995 and 2025. Out of all the selected articles, 23 articles were used for analysis. The articles were selected based on the following criteria: relevance, source type, and experimental rigor. All these sources must be peer-reviewed journal articles or systematic reviews that directly address the treatment or therapeutic methods of Bell's palsy in the four focused countries (the U.S.A., China, India, and Brazil). More importantly, sources with clear methodology, such as randomized control experiments, were used. Sources without peer review and those with unclear methods were excluded.

Cross Country Comparison

While Bell's palsy affects patients worldwide, the management of Bell's palsy reveals noticeable variations across healthcare systems. These variations include different treatment protocols, therapeutic priorities, and rehabilitation strategies. For instance, while some regions emphasize pharmacological

interventions with corticosteroids and antivirals, others prioritize surgical options or alternative therapies. The following analysis explores the differences in treatment type amongst different countries, highlighting both innovative solutions and ongoing challenges.

United States

In the United States, pharmacological treatment of Bell's palsy follows a standardized approach centered on corticosteroids. Prednisone is typically prescribed as a 60 mg daily dose for the first five days, then reduced by 10 mg each day for the next five days, while 50 mg per day for 10 days seems to work out effectively (Salinas et al., 2010). This protocol, also endorsed by the American Academy of Neurology and AAO-NHS, has a maximum efficacy within 72 hours of symptom onset. A Cochrane review has demonstrated their benefits in the treatment of BP, with patients receiving corticosteroids exhibiting less postoperative sequelae, such as gustatory lacrimation (“crocodile tears”) and synkinesis. According to this systematic review, if 10 BP patients are treated with corticosteroids, 1 incomplete recovery will be avoided (Tiemstra et al., 2007). What’s more, a study on prednisone effectiveness shows that over 94% of patients experienced complete recoveries with prednisone in a 9 month time span, while only 82% claimed to have complete recoveries with placebo (Holland et al., 2013).

Due to the possible role of HSV-1 (Herpes) in the etiology of Bell's palsy, the antiviral drugs acyclovir (Zovirax) and valacyclovir (Valtrex) are recommended. Either acyclovir 400 mg can be given five times per day for seven days or valacyclovir 1 g can be given three times per day for seven days. It is also notable that two recent placebo-controlled trials demonstrated full recovery in a higher percentage of patients treated with an antiviral drug in combination with prednisolone than with prednisolone alone (100 percent versus 91 percent and 95 percent versus 90 percent) (Hato et al., 2007). What’s more, it has been shown that while 15% of patients receiving antivirals and corticosteroids claimed to have incomplete recoveries, over 28% reported incomplete recoveries in the placebo control group (Holland et al., 2013). Current U.S practice reflects this approach, prioritizing rapid steroid initialization while reserving antivirals for high-risk groups, underscoring the necessity for individualized differential diagnosis.

Overall, this pharmacological treatment is well-documented and is the most standard approach that is proven to be capable of treating Bell's palsy.

China

In Traditional Chinese Medicine (TCM), acupuncture is the cornerstone and the most common treatment for Bell's palsy. Facial paralysis treatment is carefully set for different approaches for the recovery and sequelae phases. Acupuncture is a procedure involving the insertion of a fine needle into the skin or deeper tissues at specific locations of the body (acupoints) to prevent and treat diseases (Hao et al., 1995). Acupuncture practice is one of the most popular forms of alternative and complementary medicine in the world. As a medical practice with roots in China, it has been widely applied for many years and has amassed significant clinical and theoretical evidence (Zhang et al., 2019).

During the recovery, treatment focuses on yangming, taiyang, and shaoyang meridians using points like Taiyang (EX-HN5), Yangbai (GB14), Sibai (ST2), Fengchi (GB20), Cuanzhu (BL2), Dicang

(ST4), Quanliao (SI18), Jiache (ST6), Yingxiang (LI20), Quchi (LI11), Waiguan (TE5), and Hegu (LI4). Doctors typically apply shallow needling with needles that are 1 inch long to a depth of 1.7 mm into the human skin, retaining needles for 20 minutes during daily acupuncture sessions while alternating between 5-6 acupuncture points per treatment. For patients who have cold-damp constitution or deficiency patterns, moxibustion or warm needle acupuncture may be added to enhance meridian circulation (Wang et al., 2019).

For the challenging sequela phase—phases that have prolonged symptoms—bloodletting therapy plays a crucial role for blood stasis. This type of therapy involves puncturing specific areas like ear apex, ear lobe, Ashi points, Wangu (GB12), or finger tips to release blood until the color normalizes (Wang et al., 2019). Needling techniques are switched to deeper insertions, with depths between 1.7-2.7mm. Moreover, these sessions are prescribed 2-3 times per week, with a duration of 20 minutes. A special technique called “penetrating needling” can also be used. This technique involves a single needle connecting multiple acupuncture points. For example, a needle can be inserted at Touwei (ST8), and leading through Eryan (GB3) (Wang et al., 2019).

Overall, acupuncture has been proven to be somewhat effective. In a study conducted with 130 patients, all the patients were randomly divided into the control group (drug treatment) and the experimental group (acupuncture). In the experimental group, the treatment consisted of inserting 12 needles (30*45 mm) into various acupuncture points such as Yangbai (BL 14) and Sibai (ST2), while the control group received vitamin B, diltiazem, and Dibazol. The results suggest the cure rate and effective rate in the experimental group are both higher than the control group (74% cure rate + 23% effective rate vs. 45% cure rate + 31% effective rate) (Chen et al., 2010). However, current results are limited; more clinical research is needed to form reliable conclusions on the efficacy of acupuncture.

India

Bell's palsy is known as “ardita” by Ayurveda, the traditional system of medicine in India.

Ayurveda offers an extensive range of treatment for Bell's palsy including Panchakarma detoxification and herbal medications (Aneesh et al., 2024). Nasya therapy is central to the Ayurveda treatment, which involves medicated oils like Anu Taila and Ksheerabala Taila (Jhirmiria et al., 2025). Nasya therapy has been shown to provide significant improvement in facial muscle strength and symmetry. Similarly, Shirodhara therapy, which drips medicated oils like Brahmi oil on the forehead, was found to be effective in reducing paralysis symptoms (Aneesh et al., 2024). Key herbal treatments include Ashwagandhara (with a herb called *Withania somnifera*) and Bala, which also demonstrated therapeutic effects. A study brought out by Patil et al. in 2018 reported that these herbs are crucial for reducing inflammation while supporting nerve recovery (Patil et al., 2018). In particular, Ashwagandhara is known for its adaptogenic properties, which aids the body's response to stress and improves nerve function (Patil et al., 2011). Bala (with a herb named *Sida cordifolia*), is another herb used to strengthen the nervous system. A clinical trial conducted by Namboothiri et al. reported that Bala effectively enhanced nerve function and reduced paralysis features (Namboothiri et al., 2020). Thaker et al. provided an overview that highlighted Bala's anti-inflammatory neuroprotective properties (Thaker et al., 2011). Bala has been

widely used in Ayurveda medicine for its benefits to the nervous system, expediting recovery from nerve injuries.

Brazil

In Brazil, the treatment for Bell's palsy has incorporated multiple approaches. An alternative to the conventional pharmacological approach includes prescribing bee venom therapy (BV). Bee venom therapy involves controlled injections of purified bee venom that stimulates nerve recovery. This bee venom consists of a complex mixture of more than 18 pharmacological compounds, which include melittin, apamin, phospholipase A2, PLA2, and a high concentration of water (over 80%) (Pucca et al., 2019). Melittin is the primary component that exerts anti-inflammatory, anti-arthritis, and neuroprotective effects (Lee et al., 2016). At the same time, PLA2 (approximately 10-12% of the dry weight of the venom) is proven to have promising therapeutic benefits in neurodegenerative diseases, including Parkinson's and Alzheimer's diseases (Hossen et al., 2016).

Multiple research studies have examined bee venom therapy in nerve damage models. In a 2023 study published in *Biomolecules*, mice were used as the animal model, which has a genetic similarity of 85% compared to humans (Er-Rouassi et al., 2023). This high level of similarity of genetic information makes mice a very prominent animal model. In a recent study, mice treated with bee venom in the span of 2 weeks compared to control groups in 4 weeks exhibited faster restoration of whisker movement as well as a complete resolution of nasal deviation (Er-Rouassi et al., 2023). Moreover, it is reported that bee venom restored over 93% of facial motoneuron connections in the experimental group, significantly higher than the 38% recovery rate in the untreated control group. It is also interesting to note that the whole bee venom mixture was proved more effective than PLA2 used alone, as PLA2 can be improved by the presence of melittin (Er-Rouassi et al., 2023). While the mouse model captures the potent therapeutic effects of bee venom therapy, human trials and tests are still needed.

DISCUSSION

The intercountry analysis reveals a fascinating variety of treatments from different countries, ranging from the ancient tradition of acupuncture to modern research-driven bee venom therapy.

However, when considering the rigor of experimental testing, the quality of results, and a risk-benefit analysis, the United States' standardized pharmacological method used is the most reliable treatment. The strength of the pharmacological approach lies in its robust clinical evidence. Holland et al. reported that patients prescribed with prednisone have 94% of complete recoveries compared to 82% for patients who received placebo treatment (Holland et al., 2013). Ultimately, the goal of any treatment is to ensure the highest percentage of complete recoveries. Based on current evidence, the U.S. pharmacological method achieves this goal.

Despite this evidence-based superiority of the U.S. pharmacological method, the ultimately chosen treatment method must align closely with the patient's perspective. A patient with a preference for traditional medicine might be hesitant to try pharmacological therapy, fearing the side effects of "Western drugs". In this case, the physician's role is not to dismiss their beliefs entirely, but more importantly frame

the corticosteroids as an effective means to cure Bell's palsy. Conversely, a patient who explicitly wants a pharmacological approach from a doctor who prescribes a non-pharmacological approach may feel frustrated because the efficacy-based pharmacological intervention is being ignored. Ultimately, the goal of any treatment is to ensure the highest percentage of recoveries, and this is best achieved through a patient-centered dialogue that respects their preferences while presenting the strong evidence of corticosteroid treatment. However, it is also important to note that none of the treatment methods is “perfect.” Not to mention, this analysis does not claim that any country exclusively uses a single treatment. Rather, it identifies the therapies that are most locally researched, or most distinct to the country’s medical literature. For instance, a patient in China may still receive corticosteroids as a form of treatment, just as a patient in the United States might seek acupuncture in addition to corticosteroids.

Many of these therapeutic methods are complementary.

In addition to differing in therapies, the four countries also diverged in how they addressed the psychological aspects of BP. In the United States, the American Academy of Neurology’s guideline focuses nearly exclusively on corticosteroid doses and timing, with no formal recommendations for psychological support (Gronseth et al., 2012). Similarly, the Chinese therapy method also lacks psychological treatment. By contrast, India’s Ayurvedic framework addresses mental well-being, as treatments such as Shirodhara are designed to reduce stress and anxiety along with physical symptoms (Aneesh et al., 2024). Brazil lacks a unified rule for BP treatment, meaning that psychological treatment highly depends on the individual doctor’s judgement. This inconsistency highlights a very important issue: despite strong evidence that facial paralysis causes psychological distress, most countries do not mandate routine mental health screening. Future guidelines should integrate psychological assessment tools, such as the Facial Disability Index’s social well-being scale, into standard care routines.

CONCLUSION

Bell's palsy treatment strategies vary significantly across the world, reflecting distinct traditions, history, as well as differences in healthcare infrastructure. This study introduced and contrasted the different types of Bells Palsy treatments prescribed around the world. The United States emphasizes pharmacological treatment using prescribed corticosteroids and antivirals, with support from robust evidence. On the other hand, China relies heavily on acupuncture therapy, which requires more clinical research for its efficacy. Meanwhile, India’s Ayurvedic therapy (nasya therapy and neuroprotective herbs) highlights the role of traditional medicine in nerve injuries. Last but not least, Brazil’s bee venom therapy shows promising results on animal models, though human models are still needed (Rousassi et al., 2023).

To improve future research, more clinical trials are needed with proper sample sizes and further investigation of the overall efficacy of different treatments. In particular, randomized controlled experiments comparing the pharmacological method and traditional therapy methods—acupuncture, nasya therapy, and bee venom therapy—can help prove their effectiveness. Future studies should quantify their outcomes, including facial nerve function scores and recovery time lengths, to establish a more meaningful cross-country comparison. Additionally, greater attention should be given to evaluating the psychological effects and social factors of Bell’s palsy, as current studies show a strong focus on the physical recovery despite having some quality evidence for the psychological effects. Ultimately, by

combining the strengths of evidence-supported medicine, the medical community can work toward more holistic strategies for this disorder.

REFERENCES

- Aneesh. (2024, July). Ayurvedic Management of Bell's Palsy: A Systematic Review. Ollur.
- Chen, N., Zhou, M., He, L., Zhou, D., & Li, N. (2010). Acupuncture for Bell's palsy. *The Cochrane database of systematic reviews*, 2010(8), CD002914. <https://doi.org/10.1002/14651858.CD002914.pub5>
- Er-Rouassi, H., Bakour, M., Touzani, S., Vilas-Boas, M., Falcão, S., Vidal, C., & Lyoussi, B. (2023). Beneficial Effect of Bee Venom and Its Major Components on Facial Nerve Injury Induced in Mice. *Biomolecules*, 13(4), 680. <https://doi.org/10.3390/biom13040680>
- Eviston, T. J., Crosson, G. R., Kennedy, P. G., Hadlock, T., & Krishnan, A. V. (2015). Bell's palsy: aetiology, clinical features and multidisciplinary care. *Journal of neurology, neurosurgery, and psychiatry*, 86(12), 1356–1361. <https://doi.org/10.1136/jnnp-2014-309563>
- Hato, Naohito et al. "Valacyclovir and prednisolone treatment for Bell's palsy: a multicenter, randomized, placebo-controlled study." *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology* vol. 28,3 (2007): 408-13. doi:10.1097/01.mao.0000265190.29969.12
- Hao, J., Zhao, C., Cao, S., and Yang, S. (1995). Electric acupuncture treatment of peripheral nerve injury. *J. Tradit. Chin. Med.* 15, 114–117.
- Hossen, M. S., Shapla, U. M., Gan, S. H., & Khalil, M. I. (2016). Impact of Bee Venom Enzymes on Diseases and Immune Responses. *Molecules (Basel, Switzerland)*, 22(1), 25. <https://doi.org/10.3390/molecules22010025>
- Huang, B. (2012). Psychological Factors Are Closely Associated with the Bell's Palsy: A Case-control Study. Wuhan, China.
- Hotten, M. (2020). The psychosocial impact of facial palsy: A systematic review.
- Holland, N. J., & Bernstein, J. M. (2014). Bell's palsy. *BMJ clinical evidence*, 2014, 1204.
- Jhirmiria, D. G., & Tathed, P. . (2025). Efficacy of Panchendriya Vardhan Taila Nasya in management of Bells's palsy – A case report. *Ayurlog: National Journal of Research in Ayurved Science*, 13(02). Retrieved from <https://www.ayurlog.com/index.php/ayurlog/article/view/1268>
- Lee, G., & Bae, H. (2016). Anti-Inflammatory Applications of Melittin, a Major Component of Bee Venom: Detailed Mechanism of Action and Adverse Effects. *Molecules (Basel, Switzerland)*, 21(5), 616. <https://doi.org/10.3390/molecules21050616>

- Mikulska, P., Malinowska, M., Ignacyk, M., Szustowski, P., Nowak, J., Pesta, K., Szelağ, M., Szklanny, D., Judasz, E., Kaczmarek, G., Ejiohuo, O. P., Paczkowska-Walendowska, M., Gościński, A., & Cielecka-Piontek, J. (2023). Ashwagandha (*Withania somnifera*)-Current Research on the Health-Promoting Activities: A Narrative Review. *Pharmaceutics*, 15(4), 1057. <https://doi.org/10.3390/pharmaceutics15041057>
- Namboothiri M, et al. Neuroprotective Effects of Bala in Bell's Palsy: A Clinical Trial. *Indian J Tradit Know*.2020;19(1):112-118.
- Patil V, et al. Role of Ashwagandha in the Treatment of Bell's Palsy: A Randomized Controlled Trial. *Int J Ayurveda Res*. 2018;9(4):45-51.
- Pucca, M. B., Cerni, F. A., Oliveira, I. S., Jenkins, T. P., Argemí, L., Sørensen, C. V., Ahmadi, S., Barbosa, J. E., & Laustsen, A. H. (2019). Bee Updated: Current Knowledge on Bee Venom and Bee Envenoming Therapy. *Frontiers in immunology*, 10, 2090. <https://doi.org/10.3389/fimmu.2019.02090>
- Pang, J., Liu, Y., Zheng, Y., & Wang, Y. (2012). 王寅教授针刺治疗贝尔面瘫经验摘要. *辽宁中医杂志*, 39(5). <https://wenku.baidu.com/view/4eab9b7200768e9951e79b89680203d8ce2f6af9>
- S, I., Vijayan, R., & Sukeshan, S. (2022). Sadyovamana - An effective therapy in the management of Bell's palsy - A case report. *Journal of Ayurveda and integrative medicine*, 13(4), 100634. <https://doi.org/10.1016/j.jaim.2022.100634>
- Salinas, R. A., Alvarez, G., Daly, F., & Ferreira, J. (2010). Corticosteroids for Bell's palsy (idiopathic facial paralysis). *The Cochrane database of systematic reviews*, (3), CD001942. <https://doi.org/10.1002/14651858.CD001942.pub4>
- Tiemstra, J. D., & Khatkhate, N. (2007). Bell's palsy: diagnosis and management. *American family physician*, 76(7), 997–1002.
- VanSwearingen, J. M., Cohn, J. F., Turnbull, J., Mrzai, T., & Johnson, P. (1998). Psychological distress: linking impairment with disability in facial neuromotor disorders. *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*, 118(6), 790–796. [https://doi.org/10.1016/S0194-5998\(98\)70270-0](https://doi.org/10.1016/S0194-5998(98)70270-0)
- Zhang, W., Xu, L., Luo, T., Wu, F., Zhao, B., & Li, X. (2020). The etiology of Bell's palsy: a review. *Journal of Neurology*, 267(7). <https://doi.org/10.1007/s00415-019-09282-4>
- Zhang, R., Wu, T., Wang, R., Wang, D., & Liu, Q. (2019). Compare the efficacy of acupuncture with drugs in the treatment of Bell's palsy: A systematic review and meta-analysis of RCTs. *Medicine*, 98(19), e15566. <https://doi.org/10.1097/MD.00000000000015566>