Enhancing China's Soft Powers with Traditional Chinese Medicine and Global Healthcare Integration

Christine Seo1 and Catherine Fillebrown#

¹Bergen County Academies, USA #Advisor

ABSTRACT

During a time where global influence is increasingly shaped by cultural engagement and soft power, Traditional Chinese Medicine (TCM) is a pivotal element in elevating China's global standing and soft powers. Beyond its role as an alternate medical practice, TCM's deep roots in Chinese culture and philosophy serve as its strengths to enhance China's global stature. This study looks at TCM's potential as a catalyst for bolstering China's soft powers by examining the historical context, contribution to cultural diplomacy, challenges in global integration and strategic importance with the Belt and Road Initiative (BRI). It discusses the significant market share of TCM and its potential as a key economic driver, alongside the scientific scrutiny it faces under Western medical standards. The role of TCM in Chinese healthcare and its increasing scientific credibility in the Western world are analyzed, emphasizing the need for a nuanced approach to integrate TCM in global healthcare. In conclusion, the study evaluates the potential of TCM as a tool for cultural exchange, understanding, and influence, proposing strategies for its international promotion and integration into global healthcare practices. It emphasizes the opportunity for China to bolster its soft power and demonstrate its commitment to global healthcare innovation through TCM. The paper suggests that TCM, with its unique health and wellness approach, can contribute significantly to global health improvements and position China as a key player in the international healthcare domain.

Introduction

In an era where global influence is as much about cultural engagement and soft power as it is about economic and military readiness, Traditional Chinese Medicine (TCM) may be the key player in advancing China's soft power. Rooted in rich cultural practices, TCM offers more than just an alternative medical practice; it represents a profound aspect of Chinese culture and philosophy, poised to enhance China's global stature. This paper investigates the resurgence of Chinese soft power that can be significantly bolstered by implementing policies to increase the availability of TCM and bring more attention to the practice. These initiatives not only promise to extend the reach of this ancient medical wisdom but also serve as a tool for cultural exchange, understanding, and influence. This paper explores the potential of TCM as a soft power tool, examining its role in cultural diplomacy, the challenges and opportunities in its global integration, and the strategic importance of educational institutions in disseminating TCM knowledge worldwide. By integrating TCM into global healthcare, China can revitalize its soft power, showcasing its unique contributions to the healthcare industry globally.

Historical Context of Traditional Chinese Medicine

In past decades, Traditional Chinese Medicine (TCM) has faced challenges in maintaining its market share and presence within the healthcare industry. Rooted in concepts like yin and yang, the five phases, and the harmony between heaven and humanity, TCM traces its origins back to 3,000 years ago during the Zhou dynasty. Influenced significantly by Confucian ethics emphasizing altruism, kindness, and adherence to rituals, TCM practitioners employ personalized observation techniques, including pulse diagnosis and tongue examination, inpatient treatment (Wang, 2019).

Despite China's considerable advancements in healthcare following the 2009 implementation of the "New Medical Reform," with a specific emphasis on expanding health insurance coverage and infrastructure, TCM has struggled, accounting for only 8% of total outpatient visits. Nevertheless, China's healthcare system has undergone expansions through various reforms, such as universal health insurance programs, zero-markup drug policies, patient referral systems, and medical alliances (Chen, 2019). By 2017, China had developed a robust healthcare infrastructure, boasting 8.91 million health technicians, including 3.35 million physicians and 3.79 million registered nurses, along with a network of over 30,000 hospitals and 94,000 township clinics (Zhou).

In contrast, TCM clinics face challenges with lower profit margins, with approximately 75% of TCM prices being lower than the actual costs. This pricing issue, combined with a shortage of licensed TCM professionals, particularly in rural areas, has resulted in a prevalent reliance on Western medicine. Rural China's healthcare scenario is further complicated by inadequate health facilities and personnel, revealing the intricacies within the public health services framework (Xu).

The decline of TCM can be traced back to historical events, notably the 1910 pneumonia epidemic in Manchuria, which solidified Western medicine's perceived superiority in treating patients. Western medicine not only contained the disease and prevented new cases but also allowed the imperial government to refrain from depending on Russian and Japanese military-led healthcare efforts. Although Western medicine was introduced to China by Western missionaries in the early 19th century, its widespread adoption occurred when the imperial government recognized its effectiveness in combating pneumonia in 1910 (Lei, 2014). Consequently, with the emergence of influential foreign powers like Japan, China assimilated Western medical practices to engage in modern medical discourse. Later, in 1949 under Mao Zedong's leadership, the official hybridization of Chinese and Western medicine took place. Early Western observers appreciated aspects of TCM while also acknowledging its foundations in mysticism and superstition. Intriguingly, as early as 1863, the French consul Dary de Thiersant pursued the study of TCM, publishing a book on medicine that integrated acupuncture techniques and philosophical principles from TCM (Contatore, 2018).

Role of TCM in Chinese Healthcare

Recent years have witnessed a shift in perspective towards Traditional Chinese Medicine (TCM). In 2018, TCM-related terms, such as "matrimony and ginger," emerged among the top 10 keywords associated with healthcare. Statistical data reveals significant TCM expansion in China until 2015: 3,996 TCM hospitals, 452,000 practitioners and assistants, over 42,000 TCM clinics, and a staggering 910 million TCM-related medical visits (Hu, 2021). From 2009 to 2015, TCM medical services grew by over 1%, climbing from 14.3% to 15.7%. TCM's total output in 2015 reached nearly USD 110 billion, accounting for about 28.55% of China's pharmaceutical industry revenue. This substantial market share suggests economists foresee TCM as a great source of economic growth in the forthcoming years. The cultivation of Chinese medicinal herbs in rural areas has played a pivotal role in rural industrialization, creating job opportunities and improving livelihoods for countless rural farmers. Additionally, the export value of Chinese herbs to foreign nations surged to USD 3.72 billion in 2015. This growth propelled TCM to surpass the average net yield and profits of China's medical industry, countering previous concerns about its slim profit margins. As a result, projections indicate the potential for the TCM industry to reach a valuation of USD 100 billion by 2025 (Xu, 2019).

Concurrently, alongside its rapid growth, there has been a heightened scientific scrutiny of TCM. An increasing number of clinical trials, aligning with Western standards of randomized studies, have intensified over the years. By 2015, there were 1,270 registered TCM interventional trials, marking a substantial increase from an average of 6 in 2005-2010 to 13 in 2010-2015. This surge highlights a growing interest in scientifically substantiating TCM practices. The majority of TCM studies actively involve both male and female participants, indicating a comprehensive approach to inclusive research. Around 35% of these studies were in the process of recruiting participants, nearly half were completed, yet only 9% had reported their results on ClinicalTrials.gov. These trials typically included a median of 90 participants, with almost 90% being randomized and having two arms, indicating a robust methodological approach (Chen, 2017). From 2004 to 2016, public TCM hospitals remained relatively consistent, while private TCM hospitals witnessed a notable increase from 294 in 2004 to 1,560 in 2016 (Shi, 2020). There was a marginal annual increase in TCM physicians (0.280%), pharmacists (0.298%), revenue from Chinese medicines (0.331%), and TCM prescriptions (1.613%) per hospital. However, the contribution of Chinese drugs to total drug prescriptions stayed below 50%, accounting for just a third of drug revenue in TCM hospitals. This suggests that the proportions of physicians, pharmacists, revenue from Chinese drug sales, and traditional medicine prescriptions have yet to reach the 60% benchmark required for mainstream status in TCM hospitals. Conversely, the number of high-cost medical equipment increased significantly by over 13% annually, while the proportion of inpatient surgeries displayed a declining trend of 0.830 percentage points per hospital per year. This mixed trend reflects a nuanced adoption of Western medical practices in TCM hospitals. Thus, while TCM has made strides towards mainstream status in the healthcare system, reaching close to the 60% benchmark, it remains a complementary rather than dominant force in TCM hospitals during the period under study (Shi, 2020). This contrasts with its burgeoning economic value and global outreach, indicating a complex and evolving role for traditional medicine in modern Chinese healthcare. The rising prominence of TCM within China suggests its potential for broader international acceptance. Increased domestic credibility may also prompt more government initiatives aimed at promoting TCM among its allies.

Scientific Credibility of TCM in the Western World

Establishing scientific credibility for Traditional Chinese Medicine (TCM) presents unique challenges when subjected to Western medical research's rigorous standards, particularly in Randomized Controlled Trials (RCTs). Within evidence-based medicine's traditional framework, classical RCTs hold high regard, complemented by methodologies like cohort studies in a comprehensive evidence hierarchy. However, the intricate and distinct nature of TCM interventions often defies complete encapsulation within classical RCTs. TCM's focus on individualized treatment based on the philosophy of differing "qi" energies (derived from yin and yang balance) complicates research, leading to an emphasis on therapeutic efficacy rather than real-world effectiveness or safety aspects.

As China prepares to export TCM globally, a growing recognition of the need for a nuanced approach has emerged. One promising strategy involves progressively standardizing key diagnostic and treatment factors influencing TCM treatment outcomes (Sun, 2021). This approach acknowledges the complexities of standardizing unique TCM aspects, such as syndrome differentiation, proposing a phased standardization process.

Notably, acupuncture and Chinese patent medicines have become focal points in the new RCT framework due to their higher standardization compared to practices involving tongue examination and customized herbal prescriptions. The escalating rate of acupuncture trials exceeds herbal medicine trials, indicating heightened scientific interest, particularly in stroke treatment globally. Across various countries, significant percentages of stroke patients have resorted to Traditional, Complementary, and Alternative Medicine (TCAM) treatments (Huang), where TCM exhibits notable improvements in symptoms and motor functions – 46% in the US, 66% in Malaysia, 36% in India, and 54% in Korea (Huang, 2021).

However, the financial implications of integrating TCM with conventional treatments raise concerns. While TCAM may reduce average conventional medication costs, combined TCM and conventional treatments for ischemic stroke patients incurred significantly higher expenses compared to using conventional medication alone. This indicates that TCM often complements rather than replaces conventional treatments, adding substantially to patients' total medical costs. Comparatively, when contrasted with physical therapy, TCM, especially in stroke rehabilitation, assumes a complementary role. Nonetheless, the added financial burden of combining TCM with conventional treatments prompts inquiries into its overall cost-effectiveness. The ongoing scientific evolution of TCM, evidenced by an increasing number of rigorous clinical trials, continues to influence its integration into modern healthcare systems, reshaping perceptions among practitioners and patients alike.

Despite research complexities, TCM has gained credibility in Western and multilateral institutions. Tu Youyou's Nobel Prize in 2005 for discovering artemisinin, which aids in malaria treatment, highlighted TCM's innovation beyond Western drugs. The recognition prompted further dissemination of TCM knowledge by the Chinese government, bolstering its global acceptance. However, critics contend that TCM, due to its dependency on herbal quality, requires stricter regulations than Western medicine. Challenges regarding herb quality, pesticide residues, and heavy metals impede global credibility, especially in Western nations.

Enhancing China's Soft Power Through TCM

To leverage Traditional Chinese Medicine in boosting its economy and enhancing soft power, particularly in Southeast Asian nations, China can integrate TCM into its Belt and Road Initiative (BRI). BRI, conceptualized in 2014, further integrates TCM into its broader international engagement strategy. This initiative envisions extensive collaborations across numerous fields, including healthcare, where TCM plays a pivotal role. As a result, TCM has gained a presence in 183 countries and regions, with increasing global acceptance reflected in the World Health Organization's acknowledgment of acupuncture and moxibustion practices by numerous member states (Fan, 2020).

The historical spread of TCM to Southeast Asia, dating back to the 19th century, provides a foundational basis for this integration (Kadetz, 2022). TCM's appeal among migrant worker populations, who believed it could counteract energy imbalances causing lethargy, demonstrates its cultural resonance and potential as a soft power tool.

The Potential of TCM as a Tool for Soft Power

China's soft power holds considerable significance in the modern world, wielding influence in decision-making and leverage. Instances like Qatar in the 2022 World Cup and Russia in the Winter Olympics have drawn accusations of sportswashing—attempting to cleanse tarnished human rights records through sports excellence and hosting large events (Iyer, 2022). Anticipated to elevate China's soft power akin to Western counterparts, the Beijing Winter Olympics faced setbacks due to COVID. If seen as a tool of Chinese soft power, the Olympics merely reinstated pre-COVID soft power levels.

Even amid COVID's impact on China's soft power, the nation trailed other Asian countries like Japan, South Korea, and Singapore in soft power (Roy, 2020). Efforts to curb Chinese influences, such as Confucius Institutes and CCP-backed local politicians, have been made by many nations. However, discussions on Chinese soft power often center around Western demographics, overlooking regions like the Middle East, Africa, Eastern Europe, and South America where China enjoys a favorable image. While the BRI initially garnered positive attention, subsequent controversies emerged, with African populations raising concerns about racism, violence

from Chinese workers, and the displacement of local businesses to favor Chinese enterprises. China's engagement in medical aid to rehabilitate its image in developing nations could present an opportunity to reshape its image positively in the West.

China's medical aid strategy isn't new; it finds roots in a 1955 conference among China, India, and Burma establishing the five principles of peaceful co-existence for guiding aid policies in Africa. China's health diplomacy in Africa has been notably successful, with a focus on providing more professional human resources to rural communities compared to the West. Over 23,000 Chinese medical personnel serve in 47 African states, catering to over 180 million patients. China's holistic approach involves training students, building healthcare infrastructure, and maintaining ongoing healthcare systems, diverging from Western one-time interventions. This strategy allows for more accurate sustainability assessments and precise data collection intervals (Kadetz, 2021). Rather than creating tensions by interfering with local businesses, Traditional Chinese Medicine (TCM) serves as a means to foster cooperation and improve relations, emphasizing China's strengths.

In Nigeria, U.S. medical doctors have observed increasing public acceptance of TCM, witnessing a rise in healthcare centers offering TCM therapies. Particularly in treating COVID-19, TCM approaches have been comprehensive, including both pre and post-diagnosis treatments. Chinese medical teams in Ghana have noticed a surge in TCM's popularity, with up to 800 patients seeking its remedies for obesity and glaucoma. This shift showcases TCM as a less invasive and safer alternative compared to Western medicine. China's soft power rejuvenation can potentially be achieved by its impact on developing nations, where TCM is uniquely positioned to flourish (Wang, 2020).

Commercialization and Modernization of TCM

The influence of China's Traditional Chinese Medicine (TCM) extends beyond humanitarian assistance to encompass a rising preference among Chinese physicians and consumers for commercially manufactured products, such as herbal pills and capsules. This shift towards ease of consumption and the positioning of TCM as part of naturopathy appeals to modern sensibilities, emphasizing chemical-free treatments. In Southeast Asia, where climatic conditions like heat and humidity are prevalent, TCM products, such as cooling herbal drinks, are essential for managing bodily energies. The popularity of TCM among the younger generation, especially products linked to beauty and wellness like gingko, lingzhi mushroom, ginseng, and various cosmetic products, highlights its broad appeal. To further this global expansion, China must seek legitimization from international bodies like the World Health Organization (WHO). With over 60 million ethnically Chinese individuals in Southeast Asia, there is a substantial base for TCM's acceptance and integration (Liu, 2013).

The number of students in China studying TCM is substantial, with a predicted 13,000 students coming to China every year. The Chinese government has also established colleges in 30 nations and 17 international TCM healthcare centers (Li, 2021). Already, 103 states have been approved to practice acupuncture and moxibustion with 18 nations including acupuncture and moxibustion treatments in their insurance provisions (Xu, 2019). In this expansion, the government played a key role, as the State Food Drug Administration (SFDA) has continually lessened the restrictions on TCM herb and drug sales, which the government is now working to increase once more, with more international attention towards the products.

Moreover, the diversity in TCM's dosage forms has dramatically expanded from the traditional array of pills, powders, ointments, and pellets to over 40 different forms, including modern pharmaceutical varieties such as dropping pills, tablets, pods, and capsules. This diversification not only marks a significant leap in the technological prowess of Chinese medicinal drug production but also symbolizes the inception of a modern TCM industry, intricately woven with medicinal material production, industrial manufacturing, and commercial dynamics. The increasing preference for TCM, especially among China's aging population, further catalyzes its growth. A survey conducted by Horizon Research Co., covering 300,000 individuals across 31 provinces, autonomous regions, and cities, revealed that over 31% of the respondents preferred TCM as their primary

healthcare choice, compared to only 6.8% favoring Western medicine. TCM's deep roots in Chinese civilization, spanning 5,000 years, have not only fostered a sense of national pride but also imbued it with a cultural supremacy over Western medicine in the eyes of its supporters. Societal advancements and shifts in the disease spectrum have prompted a paradigm shift in medical models, focusing more on comprehensive disease management encompassing prevention, treatment, and health protection. This shift aligns perfectly with the inclination towards natural medicine, given the adverse effects often associated with chemical drugs. TCM, with its naturalistic approach, fits seamlessly into this evolving healthcare narrative (Xu, 2019). The international community's gradual acceptance and recognition of TCM and natural herbal medicine, driven by factors like high biopharmaceutical R&D costs, has led to growing market demand. Over 90 countries and regions have now introduced laws and regulations for the registration of Chinese herbal medicine. Particularly in the European Union, TCM herbal drugs are witnessing increasing usage. Efforts by the European Pharmacopoeia (Ph Eur) and the European Directorate for the Quality of Medicines (EDOM) in developing TCM herbal drug quality monographs further attest to this acceptance. The Ph Eur has established a working program consisting of 75 monographs, with almost 50 new TCM herbal drug monographs already implemented, ensuring quality and eliminating the risk of counterfeit products. China's admission to the World Trade Organization (WTO) has opened up more opportunities for international cooperation and exchange in the field of TCM, allowing for the wider dissemination of Chinese medicinal culture and the promotion of TCM's efficacy. The reduction in tariffs has also enabled Chinese enterprises to adopt advanced foreign technologies, accelerating TCM's internationalization. The implementation of the BRI creates an unprecedented opportunity for TCM's entry into the international community. This strategy, leveraging historical "Silk Road" symbolism, fosters economic cooperation and cultural exchange, bridging the gap between Eastern and Western medical systems and enhancing TCM's international profile. The strategy's focus on collaboration and exchange, including policy enhancement, quality standard improvement, and regulatory establishment, is pivotal for TCM's global acceptance and advancement (Cui, 2010).

Thus, the commercialization and modernization of TCM, backed by significant statistics and strategic initiatives, symbolize its transition from a traditional medical practice to a globally integrated, modern healthcare solution. This journey reflects not only the adaptation and innovation within TCM but also the burgeoning recognition and acceptance of this ancient practice in the global healthcare arena.

Conclusion and Evaluation

The resurgence of TCM presents a unique opportunity for China to bolster its soft power globally. TCM's growing acceptance and integration into global healthcare systems reflect a critical opportunity for policy makers. It can re-establish relations with developing countries and salvage its reputation among Western nations. The journey of TCM, from historical skepticism to modern-day scientific validation and commercialization, mirrors China's own trajectory on the world stage – one that is increasingly influential and integrated.

In order to promote TCM on an international stage, China should continue to strongly advocate for the inclusion of TCM in global healthcare practices, continuing to opt for legitimacy through organizations like WHO. Ultimately, this can be best achieved through rigorous testing and using clinical trials to bolster its credibility. The government can also work to establish more educational institutions that teach TCM, which have proven to be extremely effective at increasing the number of TCM clinics worldwide in the past. Increased discussion of TCM in educational settings will also lead to more collaborative efforts to increase innovation in the sector, possibly even lowering costs for patients and making TCM more accessible.

Additionally, this serves as a key opportunity for China to relieve a lot of the backlash they have been receiving over the BRI; instead of only building commercial infrastructure, by taking a healthcare related approach, developing and Western nations are likely to be far more receptive. If correctly seized, this could showcase China's commitment to global well-being.

The successful implementation of these policies could significantly enhance China's soft power and demonstrate its commitment to global healthcare innovation. TCM, with its unique approach to health and wellness, provides a platform for cultural exchange, understanding, and influence. As TCM continues to gain recognition and acceptance worldwide, it not only contributes to global health improvements but also positions China as a key player in the international healthcare domain.

Acknowledgments

I would like to thank my advisor for the valuable insight provided to me on this topic.

References

- Chen, J., Lin, Z., Li, L., Li, J., Wang, Y., Pan, Y., Yang, J., Xu, C., Zeng, X., Xie, X., & Xiao, L. (2021). Ten Years of China's New Healthcare Reform: A Longitudinal Study on changes in health resources. *BMC Public Health*, 21(1). https://doi.org/10.1186/s12889-021-12248-9
- Chen, Junchao, Huang, J., Li, J. V., Lv, Y., He, Y., & Zheng, Q. (2017). The characteristics of TCM Clinical Trials: A systematic review of Clinicaltrials.gov. *Evidence-Based Complementary and Alternative Medicine*, 2017, 1–9. https://doi.org/10.1155/2017/9461415
- Contatore, O. A., Tesser, C. D., & Barros, N. F. (2018). Medicina Chinesa/acupuntura: Apontamentos históricos sobre a colonização de um saber. *História, Ciências, Saúde-Manguinhos, 25*(3), 841–858. https://doi.org/10.1590/s0104-59702018000400013
- Cui, X., Wang, Y., Kokudo, N., Fang, D., & Tang, W. (2010). Traditional Chinese medicine and related active compounds against hepatitis B virus infection. Bioscience trends, 4(2), 39–47.
- Fan, A. Y., He, D., Gu, S., Tian, H., Ouyang, H., Wei, H., Gong, C., Alemi, S. F., & Zhao, X. (2020). Estimated number of acupuncture practitioners in mainland China in 2018: Multiperspectives. *Medical Acupuncture*, 32(5), 310–319. https://doi.org/10.1089/acu.2020.1439
- Hu, Q. (2021). The regulation of Chinese medicine in China. *Longhua Chinese Medicine*, *4*, 7–7. https://doi.org/10.21037/lcm-2021-001
- Huang, Z., Shi, X., Nicholas, S., Maitland, E., Yang, Y., Zhao, W., Ma, Y., & Jiang, Y. (2021). Use of traditional Chinese medicine and its impact on medical cost among urban ischemic stroke inpatients in China: A national cross-sectional study. *Evidence-Based Complementary and Alternative Medicine*, 2021, 1–9. https://doi.org/10.1155/2021/8554829
- Lei, X. (2014). *Neither donkey nor horse: Medicine in the struggle over China's modernity.* The University of Chicago Press.
- Lewis, K. (2009). China's counterfeit medicine trade booming. *Canadian Medical Association Journal*, 181(10). https://doi.org/10.1503/cmaj.109-3070
- Li, F., Li, D., & Ding, X. (2022). The enhancement of the international influence of TCM cultural soft power under the belt and road initiative. *Proceedings of the 4th International Seminar on Education Research and Social Science (ISERSS 2021)*. https://doi.org/10.2991/assehr.k.220107.041
- Liu, Y., Ahmed, S., & Long, C. (2013). Ethnobotanical survey of cooling herbal drinks from southern China. *Journal of Ethnobiology and Ethnomedicine*, 9(1). https://doi.org/10.1186/1746-4269-9-82
- Kadetz, P., & Stanley-Baker, M. (2022). About face: How the people's republic of china harnessed health to leverage soft power on the World Stage. *Frontiers in Human Dynamics*, 3. https://doi.org/10.3389/fhumd.2021.774765
- Regret Iyer, S., Pavlik, J., & Jin, S. V. (2022). Leveraging virtual reality (VR) for sports public relations and sports journalism: Qualitative analyses of VR Content Productions for 'russia 2018' and 'qatar 2022'

FIFA world cups. *Journal of Sport & amp; Tourism*, 26(4), 335–362. https://doi.org/10.1080/14775085.2022.2097942

- Roy, D., & Taryn. (2021, July 16). *Pacnet #47 the collapse of chinese soft power*. Pacific Forum. https://pacforum.org/publication/pacnet-47-the-collapse-of-chinese-soft-power
- Shi, X., Zhu, D., Nicholas, S., Hong, B., Man, X., & He, P. (2020). Is traditional Chinese medicine "mainstream" in China? trends in traditional Chinese medicine health resources and their utilization in Traditional Chinese Medicine Hospitals from 2004 to 2016. *Evidence-Based Complementary and Alternative Medicine*, 2020, 1–8. https://doi.org/10.1155/2020/9313491
- Sun, X., Li, L., Liu, Y., Wang, W., Yao, M., Tan, J., Ren, Y., Deng, K., Ma, Y., Wang, Y., Chen, J., Huang, W., Xia, Q., Li, Y., & Shang, H. (2021). Assessing clinical effects of traditional Chinese medicine interventions: Moving beyond randomized controlled trials. *Frontiers in Pharmacology*, 12. https://doi.org/10.3389/fphar.2021.713071
- Tang, H., Huang, W., Ma, J., & Liu, L. (2018). SWOT analysis and Revelation in traditional chinese medicine internationalization. *Chinese Medicine*, 13(1). https://doi.org/10.1186/s13020-018-0165-1
- Wang, H. (n.d.). Xinhua Headlines: Traditional Chinese Medicine gaining popularity in Africa amid covid-19 outbreak. Xinhua. http://www.xinhuanet.com/english/2020-03/19/c_138895469.htm
- Wang, Y. (2019). The scientific nature of traditional Chinese medicine in the post-modern era. *Journal of Traditional Chinese Medical Sciences*, 6(3), 195–200. https://doi.org/10.1016/j.jtcms.2019.09.003
- Wang, Z., Wang, L., Xiao, F., Chen, Q., Lu, L., & Hong, J. (2021). A traditional Chinese medicine traceability system based on lightweight blockchain. *Journal of Medical Internet Research*, 23(6). https://doi.org/10.2196/25946
- Xu, J., & Xia, Z. (2019). Traditional Chinese Medicine (TCM) does its contemporary business booming and globalization really reconfirm its medical efficacy & safety? *Medicine in Drug Discovery*, 1, 100003. https://doi.org/10.1016/j.medidd.2019.100003
- Xu, Judy, & Yang, Y. (2009). Traditional Chinese medicine in the Chinese Health Care System. *Health Policy*, 90(2–3), 133–139. https://doi.org/10.1016/j.healthpol.2008.09.003
- Zhou, M., Zhao, L., Kong, N., Campy, K. S., & Qu, S. (2018, July). What caused seriously shortage of Chinese nurses?. Iranian journal of public health. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6119566/